

# HPBOSE Class 12 Syllabus

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**Note:-** The Syllabus of Subjects mention at S. No 27 - 37 & 38 will be provided by the State Project Director (SPD) Rashtriya Madhyamik Shiksha Abhiyan (RMSA) Shimla-1 & National Stock Exchange (NSE) New Delhi.

## SCHEME OF EXAMINATIONS

**THE FOLLOWING IS THE SCHEME OF EXAMINATION FOR PLUS TWO EXAMINATION:-**

Sr. No.	Subject	Comp/Ele/Voc	Prt/non prt	THEORY MARKS	PRACTICAL MARKS	INA
1.	English	Compulsory	NP	85	-	15
<b>Humanities Group</b>						
2.	Hindi		NP	85	-	15
3.	Mathematics	Common Sc. Comm	NP	85	-	15
4.	Human Ecology and Family Science	Common Sc. Comm	Prt	60	25	15
<b>5. (Anyone of the Following)</b>						
	i) Computer Science	Common Sc. Comm	Prt	60	25	15
	ii) yoga	Common Sc. Comm	Prt	60	25	15
	iii) Phy. Education	Common Sc. Comm	Prt	60	25	15
6.	Geography	Common Sc. Comm	Prt	60	25	15
7.	Economics	Common Sc. Comm	NP	85	-	15
8.	History		NP	85	-	15
9.	Political Science		NP	85	-	15
10.	Psychology		Prt	60	25	15
11.	Sociology		NP	85	-	15
12.	Public Administration		NP	85	-	15
13.	Sanskrit		NP	85	-	15
14.	<b>Music (any one)</b>		Prt	25	60	15
	i) Hindustani Vocal					
	ii) Hindustani Instru. Melodic					
	iii) Hindustani Instru. Percussion					
15.	<b>Dance (any one)</b>		Prt	25	60	15
	i) Kathak					

	ii) Bharat Natyam					
16.	Urdu		NP	85	-	15
17.	Philosophy		NP	85	-	15
18.	Fine Art		Prt	25	60	15
19.	French		NP	85	-	15
	<b>Science Group</b>					
20.	Physics	Compulsory	Prt	60	25	15
21.	Chemistry	Compulsory	Prt	60	25	15
22.	Biology	Compulsory	Prt	60	25	15
	<b>Commerce Group</b>					
23.	Accountancy	Compulsory	Prt	65	20 Proj. work	15
24.	Business Studies	Compulsory	NP	85	-	15
	<b>Vocational Subject Under NSQF</b>					
25.	ITES	Vocational	Prt	35	50	15
26.	Automobiles	Vocational	Prt	35	50	15
27.	Security	Vocational	Prt	35	50	15
28.	Retail	Vocational	Prt	35	50	15
29.	Healthcare	Vocational	Prt	35	50	15
30.	Agriculture	Vocational	Prt	35	50	15
31.	Tourism	Vocational	Prt	35	50	15
32.	Telecom wef.2018	Vocational	Prt	35	50	15
33.	Phy. Education	Vocational	Prt	35	50	15
34.	BFSI (Banking, Finance Service and Insurance w.e.f. 2019)	Vocational	Prt	35	50	15
35.	Media & Entertainment wef 2019	Vocational	Prt	35	50	15
36.	Financial Literacy		NP	85	-	15

## Scheme of Studies

### Compulsory for All Group

1. English (Core)

#### I. Humanities Group:

Elective Subjects (Combination of four subjects to be offered from the following)

#### 1. Dance (Any one of the following Indian Classical Dances)

- (a) Kathak
- (b) Bharat Natyam

2. Economics (Common with Commerce Group)

3. Geography (Common with Science Group)

4. History

5. Human Ecology and Family Science (Common With Science Group)

6. Mathematics (Common with Science and Commerce Groups)

#### 7. Modern Indian Language (Any one of the following)

- (a) Hindi
- (b) Urdu

#### 8. Music (Any one of the following)

- (a) Hindustani (Vocal)
- (b) Hindustani (Instrumental Melodic)
- (c) Hindustani (Instrumental Percussion)

9. Philosophy

10. Political Science

11. Psychology

12. Sanskrit

13. Sociology

14. Public Administration

#### 15. Any one of the following:-

- (a) Informatics Practices (Common with Science & Commerce Groups)
- (b) Yoga (Common with Science & Commerce Groups)
- (c) Physical Education (Common with Science & Commerce Groups)

#### Subjects under NVEQF

- (d) Information Technology Enabled Services (Common with Science & Commerce Groups) (Under Normal Track Level 4)

**OR**

Information Technology Enabled Services (Common with Science & Commerce Groups) (Under Fast Track Level 3 & Level 4)

- (e) Automobiles (Common With Science & Commerce Groups) (Under Normal Track Level 4)

**OR**

Automobiles (Common with Science & Commerce Groups) (Under Fast-Track Level 3 & 4)

- (f) Security (Common with Science & Commerce Groups) (Under normal Track Level 4)

**OR**

Security (Common with Science & Commerce Groups) (Under normal Track level 3 & 4)

- (g) Retail (Common with Science & Commerce Groups)(Under Normal Track Level 4)

**OR**

Retail (Common with Science & Commerce Groups)(Under Fast Track Level 3 & 4)

- (h) Healthcare (Common with Science & Commerce Groups)(Under Normal Track Level 4)

**OR**

Healthcare (Common with Science & Commerce Groups)(Under Fast Track Level 3&4)

- (i) Financial Literacy-2018  
(j) Agriculture-2018  
(k) Tourism-2018  
(l) Telecom (2019)  
(m) Phy. Education-2020  
(n) BFSI(Banking, Finance Service & Insurance)-2020  
(o) Media & Entertainment-2020

16. Fine Arts

17. French

## **II. Science Group**

### **Compulsory**

1. Physics
2. Chemistry
3. Biology and or Mathematics (Mathematics common with Humanities and Commerce Groups)

**4. Any One OF The Following:**

- (i) Mathematics/Biology (Mathematics Common with Humanities & Commerce Groups)
- (ii) Home Science (Common with Humanities Group)
- (iii) Geography (Common with Humanities Group)
- (iv) **Any one of the following:-**
  - (a) Informatics Practices (Common with Science, Humanities & Commerce Groups)
  - (b) Yoga (Common with Science, Humanities & Commerce Groups)
  - (c) Physical Education (Common with Science, Humanities & Commerce Groups)
- (v) All other subjects mentioned as Electives under the humanities Group.

**Subjects under NVEQF**

- (d) Information Technology Enabled Services (Common with Science & Commerce Group) (Under Normal Track Level 4)  
**OR**  
Information Technology Enabled Services (Common with Science & Commerce Group) (Under Fast Track Level 3 & Level 4)
- (e) Automobiles (Common With Science & Commerce Groups)(Under Normal Track Level 4)  
**OR**  
Automobiles (Common With Science & Commerce Groups)(Under Fast Track Level 3 & 4)
- (f) Security (Common With Science & Commerce Groups)(Under Normal Track Level 4)  
**OR**  
Security (Common With Science & Commerce Groups)(Under Fast Track Level 3 &4)
- (g) Retail (Common With Science & Commerce Groups)(Under Normal Track Level 4)  
**OR**  
Retail (Common With Science & Commerce Groups)(Under Fast Track Level 3 &4)
- (h) Healthcare (Common With Science & Commerce Groups)(Under Normal Track Level 4)

**OR**

Healthcare (Common With Science & Commerce Groups)(Under Fast Track Level 3 & 4)

- (i) financial Literacy-2018
- (j) Agriculture-2018
- (k) Tourism-2018
- (l) Telecom (2019)
- (m) Phy. Education-2020
- (n) BSFI (Banking, Finance Service & Insurance)-2020
- (o) Media & Entertainment-2020

### III. Commerce Group

#### Compulsory

1. Accountancy
2. Business Studies
3. Economics and or Mathematics (Economics Common with Humanities Group and mathematics common with Humanities and Science Groups).
4. **Any one of the Following:-**

All Subjects mentioned as Electives under the Humanities Group

**NOTE:** The subjects mentioned at serial number 15 (d), (e), (f), (g), and (h) under Humanities and 4(iv) (d),(e), (f), (g) and (h)) under Science Groups have been incorporated under the NVEQF. The Candidates opting for one of these subjects should ensure that they have studied and passed the said subject in the level III in 11<sup>th</sup> Class if they are seeking admission under normal mode prescribed for these subjects.

## 1. ENGLISH CORE

### BACKGROUND

Students are expected to have acquired a reasonable degree of language proficiency in English by the time they come to class XII, and the course will aim, essentially, at promoting the higher-order language skills.

For a large number of students, the senior secondary stage will be a preparation for the university, where a fairly high degree of proficiency in English may be required. But for another large group, the senior secondary stage may be a preparation for entry into the world of work. The Core Courses should cater to both groups by promoting the language skills required for academic study as well as the language skills required for the workplace.

### OBJECTIVE

The general objective at this stage are :

- to listen to and comprehend live as well as recorded oral presentations on a variety of topics.
- to develop greater confidence and proficiency in the use of language skills necessary for social and academic purposes.
- to participate in group discussion/interviews, making short oral presentation of given topics.
- to perceive the overall meaning and organization of the text (i.e., the relationships of the different "chunks" in the text to the each other).
- to identify the central/main point and supporting details etc.
- to build communicative competence in various registers of English.
- to promote advance language skills with an aim to develop the skills of reasoning, drawing inferences etc. through meaningful activities.
- to develop ability and knowledge required in order to engage in independent reflection and enquiry.
- to develop the capacity to appreciate literary use of English and also use English creatively and imaginatively.

**At the end of this stage learners will be able to do the following :**

- read and comprehend extended texts (prescribed and non-prescribed) in the following genres : fiction, science fiction, drama, poetry, biography, autobiography, travel and sports literature, etc.



- text-based writing (i.e., writing in response to questions or tasks based on prescribed or unseen texts)
- understand and respond to lectures, speeches, etc.
- write expository/argumentative essays of 250-500 words, explaining or developing a topic, arguing a case, etc.
- write formal/informal letters and applications for different purposes.
- write items related to the workplace (minutes, memoranda, notices, summaries, reports; filling up of forms, preparing CVs, e-mail messages etc.)
- taking/making notes from reference materials, recorded talks etc.

## LANGUAGE ITEMS

The Core Course should draw upon the language items suggested for classes IX-X and develop deeper into their usage and functions. Particular attention may, however, be given to the following areas of grammar:

- The uses of different tense forms for different kinds of narration (e.g. media, commentaries, reports, programmer, etc)
- The use of passive forms in scientific and innovative writings.
- Converting one kind of sentence/clause into a different kind of structure of well as other items to exemplify stylistic variations in different discourses
- Modal auxiliaries – used based on semantic considerations.

## METHODS AND TECHNIQUES

The techniques used for teaching should promote habits of self-learning and reduce dependence on the teacher. In general, we recommend a multi-skill, learner-centred, activity based approach, of which there can be many variations. The core classroom activity is likely to be that of silent reading of prescribed/selected texts for comprehension, which can lead to other forms of language learning activities such as role play, dramatization, group discussion, writing, etc. although many such activities could be carried out without the preliminary use of textual material. It is important that students be trained to read independently and intelligently, interacting actively with texts, with the use of reference materials (dictionaries, thesauruses, etc.) where necessary. Some pre-reading activity will generally be required, and the course books should suggest suitable activities, leaving teachers free to devise other activities when desired. So also, the reading of texts should be followed by post reading activities. It is important to remember that every text can generate different readings. Students should be encouraged to interpret texts in different ways.

Group and pair activities can be resorted to when desired, but many useful language activities can be carried out individually.

In general, teachers should encourage students to interact actively with texts and with each other. Oral activity (group discussion, etc.) should be encouraged.

**UNIT-WISE WEIGHTAGE**

Unit/Areas of Learning	Marks
<b>Section A</b>	
A. Reading Skills Reading unseen prose passages and note making	17
<b>Section B</b>	
B. Advanced writing skills	29
<b>Section C</b>	
i. English Reader	26
ii. Supplementary Reader	13

**SECTION - A****READING UNSEEN PASSAGES AND NOTE MAKING**

17 Marks

The total length of the two passages will be between 950-1200 words. The passages will include two of the following :

- (a) **Factual Passages** e.g. instructions, descriptions, reports.  
 (b) **Discursive Passage** involving opinion e.g. argumentative, persuasive or interpretative text.  
 (c) **Literary Passage** e.g. extract from fiction, drama, Poetry, essay or biography.

**SUMMARY**

Unseen Passages	No. of Words	Testing Areas	Marks Allotted
1.	600-700	1. MCQ 2. Short answer type questions To test local, global and Inferential comprehension, 3. Vocabulary	04 07 03 10
2.	350-500	Note-making in an appropriate Format Abstraction	04 03 07

A passage of about 600-700 words carrying 10 marks and another passage of about 350-500 words carrying 07 marks.

1. A passage to test reading comprehension. The passage can be literary factual or discursive. The length of the passage should be between 600-700 words. **10 Marks**
2. A shorter passage of 350-500 words for note-making and abstraction. **07 Marks**

**SECTION - B**

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**Advanced writing Skills** **29 Marks**

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3. One out of two short compositions of not more than 50 words each e.g. advertisement and notices, designing or drafting posters, writing formal and informal invitations and replies. 05
4. A report or a factual description based on verbal input provided (one out of two) (100-125 words) 08
5. Writing one out of two letters based on verbal input. 08  
**Letter types include :**
  - (a) business or official letters (for making enquiries, registering complaints, asking for and giving information, placing orders and sending replies);
  - (b) letters to the editor (giving suggestions on an issue)
  - (c) application for a job
6. One out of two compositions based on visual or verbal inputs (150-200 words). Output may be descriptive or argumentative in nature such as an article, or a speech. 08

**SECTION - C**

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**Text Books** **39 Marks**

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**Prescribed Books :**

- English reader** **26**
7. One out of two extracts based on poetry from the text to test Comprehension and appreciation 04
  8. Three out of four short questions from the poetry sections to test local and global comprehension of text. 06
  9. Four short answer question based on the lessons from prescribed text. (2X4) 08
  10. One out of two long answer type questions based on the text to test global comprehension and extrapolation beyond the set text. (Expected w word limit about 125-150 words each) 0 8

<b>Supplementary Reader</b>	<b>13</b>
11. One out of two long answer type question based on supplementary Reader to test comprehension and extrapolation of theme, character and incidents (Expected word limit about 125-150 words)	05
12. Four short answer question from the Supplementary Reader (2X4)	08

**Prescribe Books :**

1. **Flemingo** - Published by H.P. Board of School Education, Dharamshala.
2. **Vistas** - Published by H.P. Board of School Education, Dharamshala.



## 2-fgluh ¼ PNd½

mPprj ek/; fed Lrj ea iðsk ysus okyk fo |kFkz igys ckj l keW; f"kk l s fo"ksk vuqkkl u dh f"kk dh vlg mlle[k gkrk gA nl o'kkā ea fo |kFkz Hkk'kk ds dkskyka l s i fjpr gks tkrk gA Hkk'kk vlg l kfgR; ds Lrj ij ml dk nk; jk vc ?kj, vkl & iMkl ] Ldny] ikr vlg nsk l s gkrk gvrk /hvj&/khjs fo"o rd Qsy tkrk gA og bl mez ea igp pndk gSfd nsk dh l kldfrd] l kelftd] jktuhfrd vlg vkfFkd l eL; kvka ij fopkj&foe"lz dj l dš , d fteenkj ukxfjd dh rjg viuh fteenkfj; ka dks le> l dsrFkk nsk vlg [km dks l gh fn"kk ns l dusea Hkk'kk dh rkdr dks igpku l dA , d sn<+ Hkkf'kd vlg opkfjd vk/kkj ds l kFk tc fo |kFkz vkrk gS rks ml s foe"lz dh Hkk'kk ds : lk ea fgnh dh 0; kid l e> vlg iz, sxx ea n{k cukuk l cl sigyk ml s; gksxA fd"kkj koLFkk l s; økoLFkk ds bl uktpl ekM+ ij fdl h Hkh fo'k; dk puko djrs le; cPps vlg muds vfHkHkkod bl ckr dks yd] l cl s vf/kd fprr jgrs gA fd p; fur fo'k; muds Hkkoh dš; j vlg tfodk ds voljka ea enn djsk fd ughA bl mez ds fo |kFkz; ka ea fpru vlg fu.kz; djus dh iðrr Hkh izy gkrh gS bl h vk/kkj ij os viusekufd] l kelftd] cl) d vlg Hkkf'kd fodkl dsifr l pr gksr gS vlg vius Hkkoh v/; ; u dh fn"kk r; djrs gA nl Lrj ij , PNd fgnh dk v/; ; u , d l tukRed] l kfgR; d] l kldfrd vlg fofHkuu iz fDr; ka dh Hkk'kk ds : i ea gksxA bl ckr ij Hkh cy fn; k tk, xk fd fuajrj fodfl r gkrh fgnh ds vf[ky Hkkjrh; Lo: lk l scPps dk fj"rk cu l dA

bl Lrj ij fo |kFkz; ka ea Hkk'kk ds fyf[kr iz, sxx ds l kFk&l kFk ml ds eks[kd iz, sxx dh dqrkrk vlg n{krk dk fodkl Hkh t: jh gA iz, kl ; g Hkh gksk fd fo |kFkz vius fc[kjs gg fopkjka vlg Hkkoka dh lgt vlg eksyd vfHko; fDr dh {kerk gkl y dj l dA

bl ikB; dē ds v/; ; u l s ¼½ fo |kFkz viuh : fp vlg vko"; drk ds vuq lk l kfgR; dk xgu vlg fo"ksk v/; ; u tkjh j[k l dA ½½ fo"fo|ky; Lrj ij fu/kkzjr fgnh l kfgR; l s l æf/kr ikB; dē ds l kFk lgt l æk LFkkfir dj l dA ⅓½ ys[ku dksky ds 0; kogkfjd vlg l tukRed : i ka dh vfHko; fDr ea l {ke gks l dA ¼½ jkst xkj dsfdl h Hkh {ks= ea tkus ij Hkk'kk dk iz, sxx i Hkkoh <æ l s dj l dA vlg ⅓½ ; g ikB; dē fo |kFkz dks l pkj rFkk izdk"ku tš s fofHkuu {ks=ka ea viuh {kerk vktkus ds volj inku dj l drk gA

### mnaš;

- L'tukRed l kfgR; dh l jkguk] ml dk vkun mBkuk vlg ml dsifr l tukRed vlg vkykpuRed nf'V dk fodkl A
- l kfgR; dh fofo/k fo/kkvka ¼dfor] dgkuh] fucak vkfn½ egroi wkz dfo; ka vlg jpukdjk] iæ[k /kkj kvka vlg "kšy; ka dk i fjp; dj kuka
- Hkk'kk dh l tukRed ckjhfd; ka vlg 0; kogkfjd iz, sxx dk cksk rFkk ml dk l anHkz vlg l e; ds vuq kj i Hkko"kkyh <æ l s eks[kd vlg fyf[kr vfHko; fDr dj l duka
- fofHkuu Kkukuqkkl uka ds foe"lz dh Hkk'kk ds : lk ea fgnh dh fof"kv izdfr , oa {kerk dk cksk dj kuka
- l kfgR; dh i Hkkodkjh {kerk dk mi ; sxx djrs gg l Hkh izdkj dh fofo/krkvka ¼ke] tkfr] fyæ] ox] Hkk'kk vkfn½ , oa varjka dsifr l dkjRed vlg l onu"khy još s dk fodkl dj kuka
- nš&fonš ea ipfyr fgnh ds : i ka l s i fjpr dj kuka

- I pjk&ek/; eka 1/2i 1/2 vks byDVMLud 1/2 ea iz, p r fgnh dh izdfr l svoxr djuk vks uohu fof/k; ka ds iz, kx dh {kerk dk fodkl djuka
- I kfgR; dh 0; ki d /kkj ds chp j [kdj jpuvkka dk fo"ysk.k vks foopu djus dh {kerk gkl y djuka
- foijhr ifjflFkr; ka ea Hkh Hkk'kk dk bLræky "kkfr ds l kFk djuka
- veirZ fo'k; ka ij iz, p r Hkk'kk dk fodkl rFkk dYiuk"khryk vks eksyd fpru ds fy, iz kx djuka

**iB; I lexb vks iB; fcmq**

- 1) dk0; vks x | l æg vlrjk Hkkx&2 ea izd[k jpuvdjka }kjk fyf[kr fof/k fo/kkva l s l æ) dk0; vks x | 1/2xHkx 20 iB 1/2 jpuv, i gkxhA ; s jpuv, i jpuvdjka vks fo/kkva dh fofHku "kfy; ka l s fo | kFkhZ dks ifjfr dj, xhA jpuvkka ea y[kd&ifjp; ea mudh l kfgR; d i "Bhkhf] l kfgR; d izdfr l {ki eanh tk l drh gA iz'u&vH; kl ka ea, d si'z'u gks tks fo | kFkhZ dh l tukRedrk vks eksydrk dk fodkl dj l dA jpuvkka dh izdfr bl izdj gkxh fd fo | kFkhZ ea l kfgR; ds fodkl kRed Lo: lk gh l e> cu l dA
- 2) , sPnd iB; dæ ds fy, ij d iBu dk iko/kku&l kfgR; dh fof/k fo/kkva dh jpuvkka dk , d l æy 1/2vlrjky Hkkx&2 1/2
- 3) jpuRed vks 0; kogkj d y[ku ij vk/kfjr , d i d rd 1/2d{k XI vks d{k XII nkska ds fy, 1/2 vfHk0; fDr vks ek/; eA bl i d rd ea fuEu fo'k; l fefyr gkxhA  
l tukRed y[ku&dfor] ukVd] Mk; jh] dgkuh  
l p u k r æ ds fy, y[ku  
1/2d 1/2fi 1/2ek/; e 1/4 ekpj i = vks if=dk 1/2  
oRr y[ku] i d rd&l eh{k} l k{kkrdkj] l ekftd fo'k; ka ij y[ku  
1/2k 1/2byDVMLud ek/; e  
j sM; k&njin"ku ds fy, y[ku] l ekpj y[ku  
0; kogkj d y[ku& ifronu] dk; l p h] dk; bRr

1/2d 1/2vi fBr cksk 1/2x   k k vks d10; k k cksk 1/2	1/2+8 1/2	16
1/2k 1/2jpuRed rFk 0; kogkj d y[ku		18
1/2x 1/2v rj k Hkkx&2 1/2dk0; Hkkx 1/2		18
1/2x   &Hkkx 1/2		17
l ij d i d rd] 1/2Hkkx&2 1/2		16
		<hr/> 85

- d- vi fBr cksk 1/2x | k k vks d10; k k cksk 1/2** 16
1. x | k k cksk % x | k k ij vk/kfjr i k p ogfodYih iz'u rFkk nks  
y?kk rj kRed iz'u rFkk "kh'kd dk puko 1/4+1+1+1+1+1 1/2+1 1/2+1/2 08
  2. dk0; k k cksk % dk0; k k ij vk/kfjr i k p ogfodYih iz'u rFkk  
y?kk rj kRed iz'u 1/4+1+1+1+1+1 1/2+1 1/2+1/2 08

[k jpuRed RfK 0; kogkj d y[ku %	18
l t ukRed y[ku l sl c i/kr nks i' u	
3. fuczk	05
4. i =	05
5 o 6- 0; kogkj d y[ku ij nks i' u	$\frac{1}{4} + 4\frac{1}{2}$ 08

**x- v r j k H k x & 2       $\frac{1}{4} 8 + 17$  v d l  $\frac{1}{2}$       35**

<b>dk0; H k x %</b>	<b>18</b>
7. l i l x 0; k [ ; k $\frac{1}{4}$ nks e a l s , d $\frac{1}{2}$	03
8. d f o r k d s d f ; i j r h u i ' u	$\frac{1}{2} + 2 + 2\frac{1}{2}$ 06
9. d f o r k d s d k 0 ; & l k n ; l i j , d i ' u	04
10. f d l h , d d f o d k i f j p ; &	<b>05</b>
> t h o u i f j p ;	02
> j p u k & i f j p ;	02
> d k 0 ; & f " k Y i d h f o " k s k r k	01

**x | H k x %      17**

11. l i l x 0; k [ ; k $\frac{1}{4}$ r h u e a l s n k s $\frac{1}{2}$	$\frac{1}{4} + 4\frac{1}{2}$ 08
12. i k B k a d h f o ' k ; o L r q i j p k j e a l s r h u i ' u	$\frac{1}{4} 1\frac{1}{2} + 1\frac{1}{2} + 1\frac{1}{2}$ 4 $\frac{1}{2}$
13. f n , x , n k s y [ k d k a e a l s f d l h , d d k i f j p ;	$\frac{1}{4} 1\frac{1}{2} + 1\frac{1}{2} + 1\frac{1}{2}$ 4 $\frac{1}{2}$
$\frac{1}{4}$ t h o u & i f j p ; ] j p u k & i f j p ; ] H k k ' k k & f " k Y i d h f o " k s k r k , $\frac{1}{2}$	

**i j d i l r d % H k x & 2  $\frac{1}{2}$       16**

14. f o ' k ; o L r q i j v k / k k f j r $\frac{1}{4}$ r h u e a l s n k s i ' u $\frac{1}{2}$	$\frac{1}{4} + 4\frac{1}{2}$ 08
15. f o f o / k f o / k k v k a i j v k / k k f j r n k s c k s k k R e d i ' u	$\frac{1}{4} + 4\frac{1}{2}$ 08

<b>f u / M j r i l r d a %</b> $\frac{1}{4} \frac{1}{2}$ v r j k H k x & 2 $\frac{1}{4}$ k B ; i l r d $\frac{1}{2}$	$\frac{1}{4} g - i z L d w f " k \{ k k c k M Z \} k j k i z d k f " k r \frac{1}{2}$
$\frac{1}{2} \frac{1}{2}$ i j d i l r d H k x & 2	$\frac{1}{4} g - i z L d w f " k \{ k k c k M Z \} k j k i z d k f " k r \frac{1}{2}$
$\frac{1}{4}$ o f o / k f o / k k v k a d k l d y u $\frac{1}{2}$	
$\frac{1}{3} \frac{1}{2}$ v f H k 0 ; f D r v l s e k / ; e	$\frac{1}{4} g - i z L d w f " k \{ k k c k M Z \} k j k i z d k f " k r \frac{1}{2}$

### 3.MATHEMATICS

The syllabus in the subject of Mathematics has undergone changes from time to time in accordance with growth of the subject and emerging needs of society. Senior secondary stage is a launching stage from where the students go either for higher academic education in Mathematics or for professional courses like engineering, physical and Bioscience, commerce or computer applications. The present revised syllabus has been designed in accordance with National curriculum Frame Work 2005 and as per guidelines given in Focus Group on teaching of Mathematics 2005 and which is to meet the emerging needs of all categories of students. Motivating the topics from real life situations and other subject areas, greater emphasis has been laid on application of various concepts.

#### OBJECTIVES

The board objectives of teaching Mathematics at senior school stage intend to help the pupil:

- To acquire knowledge and critical understanding particularly by way of motivation of visualization of basic facts, concepts, terms, principles and symbols and mastery of underlying processes and skills.
- To feel the flow of reasons while proving a result or solving a problem.
- To apply the knowledge and skills acquired to solve problems and wherever possible, by more than one method.
- To develop positive attitude to think, analyze and articulate logically.
- To develop interest in the subject by participating in related competitions.
- To acquaint students with different aspects of mathematics used in daily life.
- To develop an interest in students to study mathematics as a discipline.
- To develop awareness of the need for national integration, protection of environment observance of small family norms, removal of social barriers, elimination of sex biases.
- To develop reverence and respect towards great Mathematicians for their contribution to the field of Mathematics.



ONE PAPER		THREE HOURS	M.M. 85
Units		Marks	
I.	RELATIONS AND FUNCTIONS	9	
II.	ALGEBRA	11	
III.	CALCULUS	38	
IV.	VECTORS AND THREE-DIMENSION GEOMETRY	13	
V.	LINEAR PROGRAMMING	6	
VI.	PROBABILITY	8	
<b>TOTAL</b>		<b>85</b>	

### UNIT I. RELATIONS AND FUNCTIONS

- 1. Relations and Functions: (4) Marks**  
Types of relations: reflexive, symmetric, transitive and equivalence relations. One to one and onto functions, composite functions, inverse of a function. Binary operations.
- 2. Inverse Trigonometric Functions: (1+4) Marks**  
Definition, range, domain, principal value branches. Graphs of inverse trigonometric functions. Elementary properties of inverse trigonometric functions.

### UNIT II. ALGEBRA

(1+4(c)+6=11) Marks

- 1. Matrices:**  
Concept, notation, order, equality, types of matrices, zero matrix, transpose of a matrix, symmetric and skew symmetric matrices. Addition, multiplication and scalar multiplication of matrices, simple properties of addition, multiplication and scalar multiplication. Non-commutativity of multiplication of matrices and existence of non-zero matrices whose product is the zero matrix (restrict to square matrices of order 2). Concept of elementary row and column operations. Invertible matrices and proof of the uniqueness of inverse, if it exists; (Here all matrices will have real entries).
- 2. Determinants:**  
Determinant of a square matrix (up to 3 X 3 matrices), properties of determinants, minors, cofactors and applications of determinants in finding the area of a triangle. Adjoint and inverse of a square matrix. Consistency, inconsistency and number of linear equations by examples, solving system of linear equations in two or three variables (having unique solution) using inverse of a matrix.

**1. Continuity and Differentiability:****(1+3+4) Marks**

Continuity and differentiability, derivative of composite functions, chain rule. derivatives of inverse trigonometric functions., derivative of implicit function. Concept of exponential and logarithmic functions and their derivative. Logarithmic differentiation. Derivative of functions expressed in parametric forms. Second order derivatives Rolle's and Lagrange's Mean Value Theorems (without proof) and their geometric interpretations.

- 2. Applications of derivatives:** Rate of change, increasing/decreasing functions, tangents & normals, approximation, maxima and minima (first derivative test motivated geometrically and second derivative test given as a probable tool). Simple problems (that illustrate basic principles and understanding of the subject as well as real-life situations).

**(1+3+6(c)) Marks****3. Integrals:****(1+4(c)+4) Marks**

Integration as inverse process of differentiation. Integration of variety of functions by substitution, by partial fractions and by parts only simple integrals of the type.

$$\int \frac{dx}{x^2 \pm a^2}, \int \frac{dx}{\sqrt{x^2 \pm a^2}}, \int \frac{dx}{\sqrt{a^2 - x^2}}, \int \frac{dx}{\sqrt{ax^2 + bx^2 + c}}, \int \frac{dx}{\sqrt{ax^2 + bx + c}},$$

$$\int \frac{px+q}{ax^2+bx+c} dx, \int \frac{px+q}{\sqrt{ax^2+bx+c}} dx, \int \sqrt{a^2 \pm x^2} dx \quad \text{and} \quad \int \sqrt{x^2 - a^2} dx$$

to be evaluated.

Definite integrals as a limit of a sum, Fundamental Theorem of Calculus (without proof). Basic properties of definite integrals and evaluation of definite integrals.

**4. Applications of the Integrals:****(6(c)) Marks**

Applications in finding the area under simple curves, especially lines, areas of circles/parabolas/ellipses (ij standard form only). Area between the two above said curves (the region should be clearly identifiable).

**5. Differential Equation:****(1+4(c)) Marks**

Definition, order and degree, general and particular solutions of differential equation, Formation of differential, equation whose general solution is given, Solution of differential equations by method of separation of variables, homogenous differential equations of first order and first degree. Solutions of linear differential equation of the type:  $\frac{dx}{dx} + p(x)y = q(x)$ , where  $p(x)$  and  $q(x)$  are functions of  $x$ .

**UNIT IV. VECTORS AND THREE-DIMENSIONAL GEOMETRY****13 Marks****1. Vectors:****(1+1+4) Marks**

Vectors and scalars, magnitude and direction of a vector. Direction cosines/ratios of vectors. Types of vectors (equal, unit, zero, parallel and collinear vectors). Position vector of a point, negative of a vector, component of a vector, addition of vectors, multiplication of a vector by a scalar, position vector of a point dividing a line segment in a given ratio. Scalar (dot) product of vectors, projection of a vector on a line. Vector (cross) product of vectors.

**2. Three – Dimensional geometry:****(1+6(c)) Marks**

Direction cosines/ratios of a line joining two points. Cartesian and vector equation of a line, coplanar and skew lines, shortest distance between two lines. Cartesian and vector equation of plane. Angle between (i) two lines, (ii) two planes. (iii) a line and a plane. Distance of a point from a plane.

**UNIT V. LINEAR PROGRAMMING****1. Linear Programming:****(6) Marks**

Introduction, definition of related terminology such as constraints, objective function, optimization, different types of linear programming (L.P.) problems, mathematical formulation of L.P. problems, graphical method of solution for problems in two variables, feasible and infeasible regions, feasible and infeasible solutions, optional feasible solutions (up to three non-trivial constraints).

**UNIT VI. PROBABILITY****1. Probability:****(1+3+4) Marks**

Multiplication theorem on probability. Conditional probability, independent events, total probability, Baye's theorem, Random variable and its probability distribution, mean and variance of haphazard variable. Repeated independent (Bernoulli) trials and Binomial distribution.

**PRESCRIBED BOOKS:**

- |                        |  |
|------------------------|--|
| 1. Mathematics Part-I  | published by H.P. Board of school Education Dharamshala. |
| 2. Mathematics Part-II | published by H.P. Board of school Education Dharamshala. |

## 4.HUMAN ECOLOGY AND FAMILY SCIENCE

### OBJECTIVES

The Human Ecology and Family Sciences (HEFS) Curriculum has been framed to enable the learners to:

1. Develop an understanding of the self in relation to family and society.
2. Understand one's role and responsibilities as a productive individual and as a member of one's family, community and society.
3. Integrate learning across diverse domains and form linkages with other academic subjects.
4. Develop sensitivity and undertake a critical analysis of issues and concerns of equity and diversity.
5. Appreciate the discipline of HEFS for professional careers.

### THEORY

One paper (Theory)	Time : 3 Hours	60 Marks
<b>UNIT</b>		<b>MARKS</b>
I. Work, livelihood and career; Preparation, choices and selection		17
II. Career Opportunities		03
(A) Nutrition, Food Science and Technology		08
(B) Human Development and Family Studies		08
(C) Fabric and Apparel		08
(D) Resource and Management		08
(E) Communication and Extension		08
<b>Total</b>		<b>60</b>

### UNIT I: Work, livelihood and career; Preparation, choices and selection

- Work, age and gender
- Occupational heritage of India
- Career options
- Entrepreneurship and self-employment
- Life skills for career building

## **UNIT II: Career Opportunities**

Scope of Human Ecology and Family Science in higher education and careers Major concepts, relevance and skills in the following areas;

### **A. Nutrition, Food Science and Technology**

Specific Careers and Areas

- Clinical nutrition and dietetics
- Public nutrition and health
- Catering and food services management
- Food processing and technology
- Food quality and food safety

### **B. Human Development and Family Studies**

Specific Careers and Areas

- Early childhood care and education
- Guidance and counseling
- Special education and support services
- Support services for children in difficult circumstances
- Management of institutions and programs for children, youth and elderly

### **C. Fabric and Apparel**

Specific Careers and Areas

- Care and maintenance of fabrics in institutions
- Design for fabric and apparel
- Retailing and merchandising
- Production and quality control in garment industry
- Museumology and textile conservation

### **D. Resource Management**

Specific Careers and Areas

- Human Resource Management
- Hospitality management
- Designing of interior and exterior space
- Event management
- Consumer services

### **E. Communication and Extension**

Specific Careers and Areas

- Management of development programs
- Development communication and journalism
- Media management and advocacy
- Media design and production
- Corporate communication and public relations

## Practical

Time: 3 Hours	60 Marks
I. Nutrition, Food Science and Technology	08
II. Human Development and Family Studies	02
III. Fabric and Apparel	02
IV. Resource Management	03
V. Extension and Communication	02
Projects	03
Record	03
Viva	02
<b>Total</b>	<b>25</b>

Specializations in HEFS

### **Nutrition, Food Science and Technology**

1. Qualitative tests on food adulterations
2. Development and preparation of supplementary foods for nutrition programmes.
3. Planning messages for nutrition, health and life skills using different modes of communication for different focal groups.
4. Preservation of foods using traditional and /or contemporary methods.
5. Packaging and study of shelf life of the prepared products.

### **Human Development and Family Studies**

6. Preparation and use of teaching aids, using indigenous and locally available material to communicate socially relevant messages for children adolescents and adults in the community.
7. Conducting mock sessions among peers in career guidance, nutrition counseling and personal counseling under supervision.

### **Fabric and Apparel**

8. Preparation of articles using applied textile design techniques: tie and dye/batik/block printing.
9. Application of quality control techniques in garment industry:
  - a) Fabric inspection
  - b) Quality of seams and notions
  - c) Size labels
  - d) Packaging

10. Care and maintenance of fabric products:
  - a) Mending
  - b) Cleaning
  - c) Storage

### **Resource Management**

11. Open and account in bank/ post office. Learn basic banking operations (Mock exercises in the lab with real bank forms)
12. Application of traditional/contemporary techniques of home decorations:
  - a) Floor and wall decorations
  - b) Flower arrangement
  - c) Other forms of local decorations

### **Extension and Communication**

13. Analysis and discussion of print, radio, and electronic media with reference to: focus, presentation, technology and cost
14. Communicating with groups on any one of the following themes.
  - a) Social message-gender equality, AIDs, female foeticide, child labour, rights abuse and other such themes)
  - b) Scientific fact/ discovery
  - c) Any significant incident/event

### **Projects**

Anyone of the following may be undertaken and evaluated:

- 1a) Analysis of traditional occupations prevalent in one's own local area, their beginnings, present status and challenges faced.
- b) Analysis of gender roles, entrepreneurial opportunities, and future careers and family participation.
2. Documentation of any public/mass campaign being implemented in own area, with reference to:
  - a) Purpose of campaign
  - b) Focal group
  - c) Modalities of implementation
  - d) Stakeholders involved
  - e) Media and methods usedComment on the relevance of the campaign

3. Study of an integrated community-based programme being implemented in own area, with reference to:
  - a) Programme objectives
  - b) Focal group
  - c) Modalities of implementation
  - d) Stakeholders involved
4. Visit to the neighboring areas and interviews two adolescents and two adults regarding their perception of persons with special needs.
5. Profile any one person with special needs, child or adult: to find out their diet, clothing, activities, physical and psychological needs
6. Observe and document any event in your school/ home or neighbourhood. Evaluate the same with respect to:
  - a) Its relevance
  - b) Resource availability and mobilization
  - c) Planning and execution of the event
  - d) Financial Implications
  - e) Feedback from stakeholders

Suggest modifications for the future.

Viva

Record



## 5-Computer Science

### UNIT - I

#### **Network Operating System**

Basic network concepts, Overview and History of Linux, Linux Kernel, Linux Resources, Advantages of Linux, Creating and Viewing Files, Basic shell concept, shell commands, I/O redirection, pipelines, vi editor, Linux File System, manage files using shell, Cyber Laws.

### Unit II

#### **Network Operating System Administration (Configuration & Maintenance)**

Hardware and Network Operating System Maintenance, Network Security and IT Career opportunities, Window NT & its advantages, Difference between Linux and Windows NT, Linux firewall and its types, Managing Storage Devices Understanding basic disk concepts and manage system disks, logical volume concepts and managing logical columns, manage file system attributes and swap space, Mount point view, Introduction to shell Scripting. Administering User Accounts using GUI tool and Command Line.

### Unit III

#### **Desktop Publishing (Advanced)**

Introduction to CorelDraw, Various components of CorelDraw window, Tools in CorelDraw, Creating Graphics & saving files, Importing images of various graphic formats and editing them, Designing logos, Greeting Cards etc. Hands on with CorelDraw.

### Unit IV

#### **Elementary Server side Scripting through PHP**

Dreamweaver, XHTML, Difference between XHTML and HTML, Fundamentals of PHP, its advantages, Variables, Data Types, Operators, scope of variable, Control Program Flow (Decision statement and Looping statements), arrays, functions, working with applications submitting forms, get/post methods, Date/time session variables.

### Unit V

#### **RDBMS Concepts and MYSQL**

Basic of database systems, Problems in Traditional file oriented approach, Three level architecture of DBMS, Roles of DBA, Data Dictionary, Advantages and Disadvantages of RDBMS, Constraints: Domain level constraints, Referential Constraints, SQL Statements: DDL Statements, DML Statements, DCL Statements, TCL Statements, Concept of Keys, Constraints on Attributes, SQL Functions.

### Unit VI

#### **PL/SQL**

PL/SQL block structure, Basics of PL/SQL, Controlling PL/SQL Flow for Execution, If statements, IF-THEN-ELSE statement Execution Flow, IF-THEN-ELSEIF statement Execution Flow, LOOP Statement, Basic Loop, For Loop,

While Loop.

Triggers, Types of Triggers: Row-Level Triggers, Statement Level Triggers, BEFORE and AFTER Triggers.

Cursor, Types of Cursor: Implicit and Explicit Cursor.

## Unit VII

### Internet Business Applications

Concept of on line service-E-Commerce Practice, Net Banking, Online submission of various application forms, Various kinds of online reservations such as railways, Hotels etc., Online, Customer support services, online marketing & shopping, Social Networking viz, Facebook etc.

## Unit VIII

### Project Work

#### DISTRIBUTION OF TIME/PERIODS

Module Code	Name of Unit	Theory Hours	Practical Hours	Total Hours
CS – 401	Network Operating system	10	10	20
CS – 402	Network Operating system Administration	10	14	24
CS – 403	Desktop Publishing (Advanced)	12	16	28
CS – 404	Elementary Server side Scripting Though PHP	14	30	44
CS – 405	RDBMS Concepts & MySQL	12	18	30
CS – 406	PL/SQL	14	20	34
CS – 407	Internet Business Applications	12	16	28
CS – 408	On-Job Training/Project Work	0	16	16
<b>Total</b>		<b>84</b>	<b>140</b>	<b>224</b>

#### DISTRIBUTION OF MARKS

Unit	Theory	Practical	INA	Total
I	07	-	-	07
II	07	02	-	09
III	07	02	-	09
IV	12	06	-	18
V	10	05	-	15
VI	07	02	-	09
VII	10	-	-	10
VIII(Project work)	-	04	-	04
Viva Voce	-	04	-	04
INA	-	-	15	15
<b>TOTAL</b>	<b>60</b>	<b>25</b>	<b>15</b>	<b>100</b>

## 6.ECONOMICS

### Rationale

Economics is one of the social sciences, which has great influence on every human being. As economic life and the economic go through change, the need to ground education in children's own experience becomes essential. While doing so, it is imperative to provide them opportunities to acquire analytical skills to observe the understand the economic realities.

At senior secondary stage, the learners are in a position to understand abstract ideas, exercise the power of thinking and to develop their own perception. It is at this stage, the learners and exposed to the rigour of the discipline of economics in a systematic way.

The economics courses are introduced in such a way that in the initial stage, the learners are introduced to the economic realities that the nation is facing today along with some basic statistical tools to understand these broader economic realities. In the later stage, the learners are introduced to economics as a theory of abstraction.

The economics courses also contain many projects and activities. These will provide opportunities for the learners to explore various economic issued both from their day-to-day life and also from issues, which are broader and invisible in nature. The academic skills that they learn in these courses would provide opportunities to use information and communication technologies to facilitate their learning process.

### OBJECTIVES

1. Understanding of some basic economics concepts and development of economic reasoning which the learners can apply in their day-to-day life as citizens, workers and consumers.
2. Realization of learner's role in nation building and sensitivity to the economic issues that the nation is facing today.
3. Equipment with basic tools of economic and statistics to analyses economic issues. This is pertinent for even those who may not pursue this course beyond senior secondary stage.
4. Development of understanding that there can be more than one view on any economics issue and necessary skills to argue logically with reasoning.

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<b>Paper 1</b>	<b>3 Hours</b>	<b>85 Marks</b>
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<b>Units</b>	<b>Marks</b>
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**PART A : INTRODUCTORY MICRO ECONOMICS**

1.	Introduction	3
2.	Consumer Behavior and Demand	12
3.	Producer Behavior and Supply	20
4.	Forms of Market and Price Determination	8
5.	Simple applications of Tools of demand and supply curves	---
		<b>43</b>

**PART B : INTRODUCTORY MACRO ECONOMICS**

6.	National Income and Related Aggregates	12
7.	Determination of income and Employment	10
8.	Money and Banking	7
9.	Government Budget and the Economy	7
10.	Balance of Payments	6
		<b>42</b>

**UNIT 1 : INTRODUCTION**

**What is microeconomics?**

Central problems of an economy, production possibility curve and opportunity cost.

**UNIT 2 : CONSUMER BEHAVIOUR AND DEMAND**

Consumer's Equilibrium - meaning and attainment of equilibrium through Utility Approach: One and two commodity cases.

Demand, market demand, Determinants of demand, demand schedule, demand curve, movement along and shifts in demand curve, price elasticity of demand, measurement of price elasticity of demand - percentage, total expenditure and geometric methods.

**UNIT 3 : PRODUCER BEHAVIOUR AND SUPPLY**

Production function - Returns to a factor and returns to scale.

Supply, market supply, determinants of supply, supply schedule, supply curve, movement along and shifts in supply curve, price elasticity of supply, measurement of price elasticity of supply - percentage and geometric method.

Cost and Revenue - Short-run cost-total cost, Total variable cost, Total Fixed cost; Average Fixed cost, Average Variable cost and Marginal Cost-meaning and their relationship. Revenue total, average and marginal revenue-Producers' equilibrium-meaning and its conditions in terms of total cost and total revenue.

#### **UNIT 4 : FORMS OF MARKET AND PRICE DETERMINATION**

Forms of market - Perfect competition, Monopoly, Monopolistic competition - their meaning and features.

Price determination under perfect competition - Equilibrium price, effects of shifts in demand and supply.

#### **UNIT 5 : SIMPLE APPLICATIONS OF TOOLS OF DEMAND AND SUPPLY CURVES**

Part B : Introductory Macro-Economics

#### **UNIT 6 : NATIONAL INCOME AND RELATED AGGREGATES**

Macroeconomics: Meaning.

Circular flow of income, concepts of GDP, GNP, NDP, NNP (at market price and factor cost), National Disposable income (gross and net); Private income, Personal , Income and Personal Disposable Income, Measurement of National Income - value Added method, Income method and Expenditure method.

#### **UNIT 7 : DETERMINATION OF INCOME AND EMPLOYMENT**

Aggregate demand, Aggregate supply and their components.

Propensity to consume and propensity to save (average and marginal).

Meaning of Involuntary unemployment and full employment.

Determination of income and employment : Two sector model

Concept of investment multiplier and its working.

Problems of excess and deficient demand.

Measures to correct excess and deficient demand - availability of credit, change in Government spending.

### **UNIT 8 : MONEY AND BANKING**

Money - meaning and functions.

Central bank - meaning and functions.

Commercial banks - meaning and functions.

Recent significant reforms and issues in India Banking System.

Privatization and Modernization.

### **UNIT 9 : GOVERNMENT BUDGET AND THE ECONOMY**

Government budget - meaning and its components.

Objectives of government budget.

Classification of receipts - revenue and capital; classification of expenditure - revenue and capital, plan and non-plan, and development and non-development. Balanced budget, surplus budget and deficit budget : meaning and implications. Revenue deficit, fiscal deficit and primary deficit : meaning and implications; measures to contain different deficits.

Down sizing the role of government : Meaning and implications.

### **UNIT 10 : BALANCE OF PAYMENTS**

Foreign exchange rate - meaning (Fixed and Flexible), merits and demerits; Determination through demand and supply

Balance of payments account - meaning and components.

A brief analysis about recent exchange rate issues.

### **BOOKS RECOMMENDED :**

0; f"V vFkz kL= , d ifjp;

I ef"V vFkz kL= , d ifjp;

Introductory Microeconomics

Introductory Microeconomics

Published by N.C.E.R.T., NEW DELHI

## 7.HISTORY

### RATIONALE

Through a focus on a range of important historical sources the students would be introduced to a set of important historical events and processes. A discussion of these themes, it is hoped, would allow students not only to know about these events and processes, but also to discover the excitement of doing history.

### OBJECTIVES

- Effort in these senior secondary classes would be to emphasize to students that history is a critical discipline, a process of enquiry, a way of knowing about the past, rather than just a collection of facts. The syllabus would help them understand the process through which historians write history, by choosing and assembling different types of evidence, and by reading their sources critically. They will appreciate how historians follow the trails that lead to the past, and how historical knowledge develops.
- The syllabus would also enable students to relate/compare development in different situations, analyze connection between similar processes located in different time periods, and discover the relationship between different methods of social enquiry within different social sciences.
- In class XII the focus will be on a detailed study of some themes in Ancient, Medieval and Modern Indian history. The object would be to study a set of these themes in some detail and depth rather than survey the entire chronological span of Indian history. In this sense the courses will built on the knowledge that the students have acquired in the earlier classes.
- Each theme in class XII will also introduce the student to one type of source for the study of history. Through such a study students would begin to see what different types of sources can reveal and what they cannot tell. They would come to know how historians analyze these sources, the problems and difficulties of interpreting each type of source, and the way a larger picture of an event, a historical process, or a historical figure, is built by looking at different types of sources.
- Each theme for class XII will be organized around four subheads : (a) a detailed overview of the events, issues and processes under discussion, (b) a summary of the present state of research on the theme, (c) an account of how knowledge about the theme has been acquired. (d) an excerpt from a primary source related to the theme, explaining how it has been used by historians.
- In the textbooks each theme would be located in a specific time and place. But these discussions would be situated within a wider context by (a) plotting the specific event within time-lines, (b) discussing the particular event or process in relation to developments in other places and other times.

<b>One Paper</b>	<b>3 Hours</b>	<b>85 Marks</b>
<b>UNITS</b>	<b>MARKS</b>	
<b><u>PART-1</u></b>	<b>21</b>	
1. The Story of the First Cities Harappan Archaeology	5	
2. Political and Economic History: How Inscriptions tell a story	8	
3. Social Histories : Using the Mahabharata	3	
4. A History of Buddhism : Sanchi Stupa	5	
<b><u>PART-II</u></b>	<b>26</b>	
5. Agrarian Relations : The Ain-i-Akbari	4	
6. The Mughal Court : Reconstruction Histories Through Chronicles	8	
7. New Architecture : Hampi	5	
8. Religious Histories : The Bhakti-Sufi tradition	5	
9. Medieval Society Through Travellers' Accounts	4	
<b><u>PART-III</u></b>	<b>33</b>	
10. Colonialism and Rural Society: Evidence from Official Reports'	3	
11. Representations of 1857	8	
12. Colonialism and Indian Towns : Town Plans and Municipal Reports	5	
13. Mahatma Gandhi Through Contemporary Eyes	8	
14. Partition through Oral Sources	4	
15. The Making of the Constitution	5	
<b><u>PART-IV</u></b>	<b>5</b>	
<b>Map Work (Units 1 to 15)</b>	<b>5</b>	

### **THEMES IN INDIAN HISTORY**

<b>THEMES</b>	<b>OBJECTIVES</b>
1. The Story of the First Cities : Harappan Archaeology. Broad overview : Early urban centres. Story of discovery : Harappan civilization Excerpt : Archaeological report on a major site. Discussion : how it has been utilized by archaeologists/historians.	- Familiarize the learner with early urban centers as economic and social institutions. - Introduce the ways can lead to a revisions of existing notions of history. - Illustrate how archaeological reports are analyzed and interpreted by scholars.



<p>2. Political and Economic History : How Inscriptions tell a story. Broad overview : Political and economic history from the Mauryan to the Gupta period. Story of discovery : Inscriptions and the decipherment of the script. Shifts in the understanding of political and economic history. Excerpt : Asokan inscription and Gupta period land grant. Discussion : Interpretation of inscriptions by historians.</p>	<ul style="list-style-type: none"> <li>- Familiarize the learner with major trends in the political and economic history of the subcontinent.</li> <li>- Introduce inscriptional analysis and the ways in which these have shaped the understanding of political and economic processes.</li> </ul>
<p>3. Social Histories : Using the Mahabharata Broad Overview : Issues in social history, including caste, class kinship and gender. Story of discovery : Transmission and publications of the Mahabharata. Excerpt : from the Mahabharata, illustrating how it has been used by historians. Discussion : Other sources for reconstructing social history.</p>	<ul style="list-style-type: none"> <li>- Familiarize the learner with issues in social history introduce strategies of textual analysis and their use in reconstructing social history.</li> </ul>
<p>4. A history of Buddhism : Sanchi Stupa Broad overview : (a) A brief review of religious histories of Vedic religion, Jainism, Vaisnavism, Saivism (b) Focus on Buddhism. Story of discovery : Sanchi Stupa Excerpt : Reproduction of sculptures from Sanchi. Discussion : Ways in which sculpture has been interpreted by historians, other sources for reconstructing the history of Buddhism</p>	<ul style="list-style-type: none"> <li>- Discuss the major religious developments in early India.</li> <li>- Introduce strategies of visual analysis and their use in reconstructing histories of religion.</li> </ul>
<p>5. Agrarian Relations : The Ain-i-Akbari Broad overview : (a) Structure of agrarian relations in the 16th and 17th centuries (b) Patterns of change over the period. Story of discovery : Account of the compilation and translation of Ain-i-Akbari Excerpt : From the Ani-i-Akbari Discussion : Ways in which historians have used the text to reconstruct history.</p>	<ul style="list-style-type: none"> <li>- Discuss developments in agrarian relations.</li> <li>- Discuss how to supplement official documents with other sources.</li> </ul>
<p>6. The Mughal Court : Reconstructing Histories through Chronicles Broad overview : (a) Outline of political history 15th-17th centuries. (b) Discussion of the Mughal court and politics. Story of discovery : Account of the production of court chronicles and their subsequent, translation and transmission. Excerpts : From the Akbarnama and Padshahnama.</p>	<ul style="list-style-type: none"> <li>- Familiarize the learner with the major landmarks in political history.</li> <li>- Show how chronicles and other sources are used to reconstruct the histories of political institutions.</li> </ul>

<p>Discussion : Ways in which historians have used the texts to reconstruct political histories.</p>	
<p>7. New Architecture : Hampi  Broad overview : (a) Outline of new buildings during Vijayanagar period-temples, forts, irrigation facilities. (b) Relationship between architecture and the political system.  Story of discovery : Account of Hampi was found.  Excerpt : Visuals of buildings at Hampi.  Discussion : Ways in which historians have analyzed and interpreted these structures.</p>	<ul style="list-style-type: none"> <li>- Familiarize the learner with the new building that were built during the time.</li> <li>- Discuss the ways in which architecture can be analyzed to reconstruct history.</li> </ul>
<p>8. Religious Histories : The Bhakti Sufi tradition  Broad overview : (a) Outline of religious development during this period. (b) Ideas and practices of the Bhakti-sufi saints.  Story of Transmission : How Bhakti-Sufi compositions have been preserved.  Excerpt : Extracts from selected Bhakti Sufi works.  Discussion: Ways in which these have been interpreted by historians.</p>	<ul style="list-style-type: none"> <li>- Familiarize the learner with religious developments.</li> <li>- Discuss ways of analyzing devotional literature as sources of history.</li> </ul>
<p>9. Medieval Society Through Travellers Accounts  Broad overview : Outline of social and cultural life as they appear in travellers accounts.  Story of their writings : A discussions of where they travelled, why they travelled, what they wrote, and for whom they wrote.  Excerpts : From alberuni, Ibn Batuta Bernier.  Discussion : What these travel accounts can tell us how they have been interpreted by historians.</p>	<ul style="list-style-type: none"> <li>- Familiarize the learner with the salient features of social histories describe by the travellers.</li> <li>- Discuss how travellers account can be used as sources of social history.</li> </ul>
<p>10. Colonialism and-Rural Society : Evidence from official Reports. Broad overview : (a) Life of zamindars, peasants and artisans in the later 18 century (b) East India Company, revenue settlements and surveys. (c) Changes over the nineteenth century.  Story of official records : An account of why official investigations into rural societies were under taken and the types of records and reports produced.  Excerpt : From Firminger's Fifth Report, Accounts of Frances Buchanan-Hamilton, and Deccan Riots Report.  Discussion : What the official records tell and do not tell, and how they have been used by historians.</p>	<ul style="list-style-type: none"> <li>- Discuss how colonialism affected Zamindars, peasants and artisans.</li> <li>- Understand the problems and limits of using official sources for understanding the lives of people</li> </ul>

<p>11. Representations of 1857  Broad overview : (a) The events of 1857-58. (b) How these events were recorded and narrated.  Focus : Lucknow  Excerpts : Pictures of 1857.  Extracts from contemporary accounts.  Disussions : How the pictures of 1857 shaped British opinion of what had happened.</p>	<ul style="list-style-type: none"> <li>- Discuss how the events of 1857 are being reinterpreted.</li> <li>- Discuss how visual material can be used by historians.</li> </ul>
<p>12. Colonialism and Indian Towns : Town Plans and Municipal Reports.  Broad overview : The growth of Mumbai, Chennai, hill stations and cantonments in the 18th and 19th century.  Excerpts : Photographs and painting. Plans of cities. Extract from town plan reports.  Focus on Kolkata town planning.  Discussion : How the above sources can be used to reconstruct the history of towns. What these sources do not reveal.</p>	<ul style="list-style-type: none"> <li>- Familiarize the learner with the history of modern urban centres.</li> <li>- Discuss how urban histories can be written by drawing on different types of sources.</li> </ul>
<p>13. Mahatma Gandhi Through contemporary Eyes  Board Overview : (a) The nationalist movement 1918-48, (b) The nature of Gandhian politics and leadership  Focus : Mahatma Gandhi in 1931.  Excerpts : reports from English and Indian language newspapers and other contemporary writings.  Discussion : How newspapers can be a source of history.</p>	<ul style="list-style-type: none"> <li>- Familiarize the learner with significant elements of the nationalist movement and the nature of Gandhian leadership.</li> <li>- Discuss how Gandhi was perceived by different groups.</li> <li>- Discuss how historians need to read and interpret newspapers, diaries and letters as historical source.</li> </ul>
<p>14. Partition through oral sources Board Overview : (a) The history of the 1940s; (b) Nationalism. Communalism and Partition.  Focus : Punjab and Bengal  Excerpts : Oral testimonies of those who experienced partition.  Discussion : Ways in which these have been analyzed to reconstruct the history of the event.</p>	<ul style="list-style-type: none"> <li>- Discuss the last decade of the national movement, the growth of communalism and the story of Partition.</li> <li>- Understand the events through the experience of those who lived through these years of communal violence.</li> <li>- Show the possibilities and limits of oral sources.</li> </ul>
<p>15. The Making of the Constitution Board Overview : (a) Independence and the new nation state (b) The making of the constitution.    Focus : The Constitutional Assembly debates.  Excerpts : From the debates.  Discussion : What such debates reveal and</p>	<ul style="list-style-type: none"> <li>- Familiarize students with the history of the early years after independence.</li> <li>- Discuss how the founding ideals of the new nation state were debated and formulated.</li> <li>- Understand how such debates and discussions can be read by historians.</li> </ul>

how they can be analyzed.	
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**PRESCRIBED BOOKS :**

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## **8.POLITICAL SCIENCE**

### **RATIONALE**

At the senior secondary level students who opt Political Science are given an opportunity to get introduced to the diverse concerns of a Political Scientist. At this level there is a need to enable students to engage with political processes that surround them and provided them with an understanding of the historical context that has shaped the present. The different courses introduce the students to the various streams of the discipline of political science : political theory, Indian political and international politics. Concerns of the other two stream - comparative politics and public administration - are accommodated at different places in these courses. In introducing these streams, special care has been taken not to burden the students with the current jargon of the discipline. The basic idea here is to lay the foundations for a serious engagement with the discipline at the under graduation stage.

### **OBJECTIVES**

#### **Indian Constitution At Work :-**

- Enable students to understand historical processes and circumstances in which the Constitution was drafted.
- Provide opportunity for students to be familiar with the diverse visions that guided the makers of the Indian Constitution.
- Enable students to identify the certain key features of the Constitution and compare these to other constitutions in the world.
- Analyse the way in which the provisions of the Constitution have worked in real political life.

#### **POLITICAL THEORY**

- Develop the skills for logical reasoning and abstraction.
- Inculcate attention to and respect for viewpoints other than one's own.
- Introduce students to the different political thinkers in relation to a concept and in everyday social life.
- Enable students to meaningfully participate in a concern of current political life that surrounds them.
- Encourage the students to analyses any unexamined prejudices that one may have inherited.

#### **POLITICS IN INDIA AFTER INDEPENDENCE**

- enable students to be familiar with some of the key political events and figures in the post-independence period.
- Develop skills of political analysis through events and processes recent history.
- Develop their capacity to link macro processes with micro situations and their own life.
- Encourage the students to take a historical perspective of making sense of the contemporary India.

## **CONTEMPORARY WORLD POLITICS**

- enable the students to expand their horizon beyond India and make sense of the political map of contemporary world.
- Familiarise the students with some of the key political events and processes in the post cold war era.
- Equip students to be conscious of the way in which global events and processes shape our everyday lives.
- Strengthen their capacity for political analysis by thinking contemporary developments in a historical perspective.

### **One Paper**

**85 Marks**

### **UNITS**

**MARKS**

#### **PART A : POLITICS IN INDIA SINCE INDEPENDENCE**

1. Era of one-party dominance	5
2. Nation-Building and its problems	8
3. Politics of Planned Development	8
4. India's External relations	5
5. Challenges to and Restoration of Congress System	4
6. Crisis of the Constitutional order	6
7. Regional aspirations and conflicts	4
8. Rise of New Social Movements	5
9. Democratic upsurge and coalition parties	4
10. Recent issues and challenges	4
<b>Total</b>	<b>45</b>

#### **PART B : CONTEMPORAY WORLD-POLTICS**

11. Cold War Era in World Politics	8
12. Disintegration of the Second World and the Collapse of Bipolarity	10
13. US Dominance in World Politics	8
14. Alternative centres of Economic and Political Power	8
15. South Asia in the Post-Cold war Era	4
16. International organizations in a unipolar world	4
17. Security in Contemporary World	4
18. Globalisation and its Critics	6
<b>Total</b>	<b>40</b>

## **COURSE CONTENTS**

### **1. Era of One-Party Dominance :**

First three general elections, nature of Congress dominance at the national level, uneven dominance at the state level, coalitional nature of Congress, Major opposition parties.

### **2. Nation-Building and its Problems :**

Nehru's approach to nation-building: Legacy of partition: challenge of 'refugee' resettlement, the Kashmir problem. Organization and reorganization of states; Political conflict over language.

### **3. Politics of Planned Development :**

Five year plans, expansion of state sector and the rise of new economic interests. Famine and suspension of five year plans. Green revolution and its political fallouts.

### **4. India's External Relations :**

Nehru's foreign policy. Sino-Indian war of 1962, Indo-Pak war of 1965 and 1971. India's nuclear programme and shifting alliances in world politics.

### **5. Challenge to and Restoration of Congress System :**

Political succession after Nehru. Non-Congressism and electoral upset of 1967, Congress split and reconstitution, Congress' victory in 1971 elections, politics of garibi hatao.

### **6. Crisis of the Constitutional Order :**

Search for committed bureaucracy and judiciary. Navnirman movement in Gujarat and the Bihar movement. Emergency: context, constitutional and extra-constitutional dimensions, resistance to emergency 1977 election and the formation of Janata Party. Rise of civil liberties organisations.

### **7. Regional Aspirations and Conflicts :**

Rise of regional parties. Punjab crisis and the anti-Sikh riots of 1984. The Kashmir situation. Challenges and responses in the North East.

### **8. Rise of New Social Movements :**

Farmers' movements, women's movement, Environment and Development-affected people's movements. Implementation of Mandal Commission report and its aftermath.

### **9. Democratic Upsurge and Coalition Politics :**

Participatory upsurge in 1990s. Rise of the JD and the BJP. Increasing role of regional parties and coalition politics. UF and NDA governments Elections 2004 and UPA government.

### **10. Recent issues and challenges :**

Challenge of and responses to globalization: new economic policy and its opposition. Rise of OBCs in North Indian politics. Dalit politics in electoral and non-electoral arena. Challenge of communalism: Ayodhya dispute, Gujarat riots.

## **PART B: CONTEMPORARY WORLD POLITICS**

### **LEARNING OBJECTIVES :**

#### **COURSE CONTENTS**

##### **11. Cold War Era in World Politics**

Emergence of two power blocks after the second world war. Arenas of the cold war. Challenges to Bipolarity: Non Aligned Movement, quest for new international economic order. India and the cold war.

##### **12. Disintegration of the "Second World" and the Collapse of Bipolarity**

New entities in world politics: Russia, Balkan states and Central Asian states, Introduction of democratic politics and capitalism in post-communist regimes. India's relations with Russia and other post-communist countries.

##### **13. US Dominance in World Politics :**

Growth of unilateralism : Afghanistan, first Gulf War, response to 9/11 and attack on Iraq. Dominance and challenge to the US in economy and ideology. India's renegotiation of its relationship with the USA.

##### **14. Alternative Centers of Economic and Political Power :**

Rise of China as an economic power in post-Mao era, creation and expansion of European Union, ASEAN. India's changing relations with China.

##### **15. South Asia in the Post-Cold War Era :**

Democratisation and its reversals in Pakistan and Nepal. Ethnic conflict in Sri Lanka, Impact of economic globalization on the region. Conflicts and efforts for peace in South Asia. India's relations with its neighbours.

##### **16. International Organizations in a unipolar World :**

Restructuring and the future of the UN. India's position in the restructured UN. Rise of new international actors: new international economic organisations, NGOs. How democratic and accountable are the new institutions of global governance?

##### **17. Security in Contemporary World :**

Traditional concerns of security and politics of disarmament. Non-traditional or human security: global poverty, health and education. Issues of human rights and migration.

##### **18. Globalisation and Its Critics.**

Economic, cultural and political manifestations. Debates on the nature of consequences of globalisation. Anti-globalisation movements. India as an arena of globalization and struggle against it.

#### **PRESCRIBED BOOKS :**

- 1- I edkyhu fo'o jktuhrh
- 2- Lorl= Hkkjr ea jktuhrh

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## 9.GEOGRAPHY

### RATIONAL

Geography is introduced as an elective subject at the senior secondary stage. After ten years of general education, students branch out at the beginning of this stage and are exposed to the rigorous of the discipline for the first time. Being an entry point for the higher education, students choose geography for pursuing their academic interest and, therefore, need a broader and deeper understanding of the subject. For others, geographical knowledge is useful in daily lives because it is a valuable medium for the education of young people. Its contribution lies in the content, cognitive processes, skills and values that geography promotes and thus helps the students explore, understand and evaluate the environmental and social dimensions of the world in a better manner.

Since geography explores the relationship between people and the environment, it includes studies of physical and human environments and the interactions at different scales - local, state/region, nation and the world. The fundamental principles responsible for the varieties in the distributional pattern of physical and human features and phenomena over the earth's surface need to be understood properly. Application of these principles would be taken up through selected case studies from the world and India. Thus, the physical and human environment of India and study of some issues from a geographical point of view will be covered in greater detail. Students will be exposed to different methods used in geographical investigations.

### OBJECTIVES

The course in geography will help learners :

- Familiarise themselves with the terms, key concepts and basic principles of geography.
- Search for, recognize and understand the processes and patterns of the spatial arrangement of the natural as well as human features and phenomena on the earth's surface;
- Understand and analyse the inter-relationship between physical and human environments and their impact;
- Apply geographical knowledge and methods of inquiry to new situations or problems at different levels-local, regional, national and global;
- Develop geographical skills, relating to collection, processing and analysis and data/information and preparation of report including map and graphs, and use of computers wherever possible, and
- Utilize geographical knowledge in understanding issues concerning the community such as environmental issues, socio-economic concerns, gender and become responsible and effective member of the community.

**ONE THEORY PAPER                      3 HOURS    60 MARKS**

**A.      FUNDAMENTALS OF HUMAN GEOGRAPHY    30 MARKS**

Unit 1 : Human Geography	02
Unit 2 : People	04
Unit 3 : Human Activities	09
Unit 4 : Transport, Communication and Trade	09
Unit 5 : Human Settlements	04
Unit 6 : Map work	02

**B.      INDIAN: PEOPLE AND ECONOMY    30 MARKS**

Unit 7 : People	04
Unit 8 : Human Settlements	04
Unit 9 : Resources and Development	12
Unit 10 : Transport, Communication and International Trade	06
Unit 11 : Geographical Perspective on Selected Issues and problems	02
Unit 12 : Map Work	02

**C.      PRACTICAL WORK    25 MARKS**

Unit 1 : Processing of data and Thematic Mapping	17
Unit 2 : Field study of Spatial Information Technology	08

**A.      FUNDAMENTALS OF HUMAN GEOGRAPHY    30 MARKS**

- Unit 1 : Human Geography : Nature and Scope
- Unit 2 : People
  - Polulation of the world - distribution, density and growth
  - Population change-spatial patterns and structure; determinants of population changes;
  - Age-sex ratio; rural-urban composition;
  - Human development - concept; selected indicators, international comparisons

**UNIT 3 : HUMAN ACTIVITIES**

- Primary activities - concept and changing trends; gathering, pastoral, mining, subsistence agriculture, modern agriculture; people engaged in agricultural and allied activities some examples from selected countries;
- Secondary activities-concepts; manufacturing: agro- processing, household, small scale, large-scale; people engaged in secondary activities - some examples from selected countries;

- Tertiary activities-concept, trade, transport and communication; services; people engaged in tertiary activities - some examples from selected countries
- Quaternary activities-concept; knowledge based industries; people engaged in quaternary activities - some examples from selected countries

#### **UNIT 4 : TRANSPORT, COMMUNICATION AND TRADE**

- Land transport - roads, railway - rail network; trans-continental railways;
- Water transport - inland waterways; major ocean routes;
- Air Transport Inter continental air routes
- Oil and gas pipelines;
- Satellite communication and cyber space
- International trade-Basis and changing patterns; ports as gateways of international trade, role of WTO in international trade.

#### **UNIT 5 : HUMAN SETTLEMENTS**

- Settlement types - rural and urban; morphology of cities (case study ); distribution of mega cities; problems of human settlements in developing countries.

#### **UNIT 6 : MAP WORK OUTLINE POLITICAL MAP OF WORLD**

**2 MARKS**

IDENTIFICATION ONLY

#### **B. INDIA : PEOPLE AND ECONOMY**

**30 MARKS**

#### **UNIT 7 : PEOPLE**

- Population distribution, density and growth; composition of population; linguistic and religious; rural-urban population; change through time-regional variations; occupation;
- Migration : International, national-causes and consequences;
- Human Development - Selected indicators and regional patterns.
- Population, environment and development.

#### **UNIT 8 : HUMAN SETTLEMENTS**

- Rural Settlements - types of distribution;
- Urban settlements - types, distribution, and functional classification.

## **UNIT 9 : RESOURCES AND DEVELOPMENT**

- Land resources - general land use; agricultural land use-major crops; agricultural development and problems; Distribution of Wheat, Rice, Tea, Coffee, Cotton, Jute, Sugar cane and Rubber.
- Water resources - availability and utilization-irrigation, domestic, industrial and other uses; scarcity of water and conservation method-rain water harvesting and watershed management (one case study related with participatory watershed management to be introduced).
- Mineral and energy resources-metallic (Iron, ore, Copper, Bauxite, Manganese) and non-metallic (Mica, Salt) minerals and their distribution; conventional (Coal, Petroleum, Natural gas and Hydro electricity) and non-conventional energy sources (Solar, wind, biogas).
- Industries - types and distribution; industrial location and clustering; changing pattern of selected industries - iron and steel, cotton textiles, sugar, petrochemicals and knowledge based industries; impact of liberalization, privatization and globalization on industrial location.
- Planning in India - target area planning (case study); idea of sustainable development (case study)

## **UNIT 10 : TRANSPORT, COMMUNICATION AND INTERNATIONAL TRADE**

Transport and communication - roads, railways, waterways and airways; oil and gas pipelines; national electric grids; communication networkings - radio, television, satellite and internet.

- International trade-changing pattern of India's foreign trade; sea ports and their hinterland and airports,

## **UNIT 11 : GEOGRAPHICAL PERSPECTIVE ON SELECTED ISSUES AND PROBLEMS**

**(ONE CASE STUDY TO BE INTRODUCED FOR EACH TOPIC)**

- Environmental pollution; urban-waste disposal.
- Urbanisation-rural-urban migration; problem of slum.
- Land Degradation.

## **UNIT 12 : MAP WORK - ON OUTLINE POLITICAL MAP OF INDIA FOR LOCATING AND LABELLING**

**02 Marks**

### **C. Practical Work**

**25 Marks**

## UNIT I : PROCESSING OF DATA AND THEMATIC MAPPING

- Sources of data.
- Tabulating and processing of data; calculation of averages, measures of central tendency, deviation and rank correlation;
- Representation of data - construction of diagrams: bars, circles and flowchart; thematic maps; construction of dot; chropleth and isopleth maps;
- Use of computers in data processing and mapping.

## UNIT II : FIELD STUDY OF SPATIAL INFORMATION TECHNOLOGY

Field visit and study : map orientation, observation and preparation of sketch; survey on any one of the local concerns; pollution, ground water changes, land use and land-use changes, poverty, energy issues, soil degradation, drought and impacts, flood catchment area of school, Market survey and Household survey (any one topic of local concern may be taken up for the study; observation and questionnaire survey may be adopted for the data collection; collected data may be tabulated and analysed with diagrams and maps):

OR

### SPATIAL INFORMATION TECHNOLOGY

Introduction to GIS; hardware requirements and software modules; data formats; raster and vector data, data input, editing & topology building; data analysis; overlay & buffer.

### BOOKS RECOMMENDED

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## 10.PSYCHOLOGY

Psychology is introduced as an elective subject at the higher secondary stage of school education. As a discipline, psychology specializes in the study of experiences, behaviors and mental processes of human beings within a socio-cultural and socio-historical context. This course purports to introduce the learners to the basic ideas, principles and methods in psychology so as to enable them to understand themselves and their social world better. The emphasis is put on creating interest and exposure needed by learners to develop their own knowledge base and understanding.

The courses deals with psychological knowledge and practices which are contextually rooted. It emphasizes the complexity of behavioral processes and discourages simplistic cause-effect thinking. This is pursued by encouraging critical reasoning, allowing students to appreciate the role of cultural factors in behavior, and illustrating how biology and experience shape behavior. The course while developing an appreciation of subjectivity, also focuses on multiplicity of worldviews.

It is suggested that the teaching-learning processes should involve students in evolving their own understanding. Therefore, Teaching of Psychology should be based on the use of case studies , narratives, experiential exercises, analysis of common everyday experiences, etc.

The present effort at reforming and updating the syllabus is based on the feedback received from the teachers and students as well as some new educational and curricular concerns such as, the curriculum load, interdisciplinary approach, issues related to gender parity, concerns of special and marginalised groups, peace and environmental concerns, and inculcating citizenship values.

### OBJECTIVES

1. To develop appreciation about human behaviour and human mind in the context of learners' immediates society and environment.
2. To develop in learners an appreciation of multidisciplinary nature of psychological knowledge and its application in various aspects of life.
3. To enable learners to become perceptive, socially aware and self-reflective.
4. To facilitate students' quest for personal growth and effectiveness, and to enable them to become responsive and responsible citizens

**UNIT-WISE WEIGHTAGE**

<b>UNITS</b>	<b>MARKS</b>
Psychology and self & Psychology and Society	
I. Variations in Psychological Attributes	07
II. Self and Personality	08
III. Meeting Life Challenges	06
IV. Psychological Disorders	07
V. Therapeutic Approaches	06
VI. Attitude and Social Cognition	07
VII. Social Influence and Group Processes	06
VIII. Psychology and Life	07
IX. Developing Psychological Skills	06
Practicals (Psychological testing, Case Profile etc.)	25

**PSYCHOLOGY AND SELF & PSYCHOLOGY AND SOCIETY****UNIT I : VARIATIONS IN PSYCHOLOGICAL ATTRIBUTES****07 Marks**

The unit aim at studying how people differ with respect to their various psychological attributes.

Individual differences in human functioning, Assessment psychological attributes; Intelligence: Individual difference in intelligence: Theories of Intelligence: Culture and Intelligence, Emotional intelligence: Special abilities: Aptitude-nature and measurement; Creativity;

**UNIT II : SELF AND PERSONALITY****08 Marks**

The unit focuses on the study of self and personality in the context of different approaches in an effort to appraise the person. The assessment of personality will also be discussed.

Concepts of self, concept, self-esteem, self-efficacy, and self-regulation; culture and self ; Personality concept; Major approaches type and Trait, Psychodynamic, Humanistic, Behavioural, Cultural; Assessment of personality: Self-report measures, behavioural analysis, and projective measures.

**UNIT III : MEETING LIFE CHALLENGES****06 MARKS**

This unit deals with the nature of stress and how responses to stress depend on an individual's appraisal of stressors. Strategies to cope with stress will also be dealt with.

**UNIT IV : PSYCHOLOGICAL DISORDERS****07 MARKS**

This unit discusses the concepts of normality and abnormality and the major psychological disorders.

Concepts of abnormality and Psychological disorder, Factors, underlying abnormal behaviour, Classification of disorder, Major psychological disorders- Anxiety, Somato-form Dissociative, Mood, Schizophrenic, Developmental and Behavioural Substance Related.

**UNIT V : THERAPUTIC APPROCHES****06 MARKS**

The unit discusses the goals, techniques and effectiveness of different approaches to treat psychological disorders.

Nature and process of therapy; Therapeutic relationship; Types of therapies: Psycho-dynamic, Humanistic, Cognitive, Behaviour and Bio-medical; Alternative therapies - Yoga, Meditation; Rehabilitation of mentally ill.

**UNIT VI : ATTITUDE AND SOCIAL CONGNITION****07 MARKS**

This unit focuses on formation and change of attitudes, cultural influences on attribution tendencies and conditions influencing pro-social behaviour.

Explaining social behaviour: Impression formation and explaining behaviour of others through attributions; Social cognition; Schemas and stereotypes; Nature and components of attitudes; Attitude formation and change; Behaviour in the presence of others; Pro-social Behaviour; Prejudice and discrimination; Strategies for handling prejudice.

**UNIT VII : SOCIAL INFLUENCE AND GROUP PROCESSES****06 MARKS**

The unit deals with concept of group, its functions and the dynamics of social influence on conformity, obedience and compliance. Different conflict resolution strategies will also be discussed.

Conformity, Obedience, and Compliance; Groups : Nature, formation and Types; Influence of group on individual behavior, Inter-Group Conflicts; Conflict resolution strategies.



## UNIT VIII : PSYCHOLOGY AND LIFE

07 MARKS

The unit focuses on the application of psychological understanding to some important social issues.

Human-environment relationship; Environmental effects on human behaviour: Noise, pollution, crowding, natural disasters, Psychology and social concerns: Aggression, Violence and Peace, Discrimination and Poverty, health, impact of television on behaviour Promoting pro-environmental behaviour.

## UNIT IX : DEVELOPING PSYCHOLOGICAL SKILLS

06 MARKS

The unit deals with some effective Psychological and interpersonal skills for facilitating personal-social development.

Effective psychological skills: Observational skills, Interviewing skills, Testing skills Counselling skills, Communication skills.

## PRACTICALS PSYCHOLOGICAL TESTING (PROFILE)

25 MARKS

The students shall be required to prepare one case profile and conduct five practicals related to the topics covered in the course. The case profile will include development history of the subject, using both qualitative (observation, interview, rating scale etc.) and quantitative (Psychological testing ) approaches. Practical would involve using standardised psychological assessment devices in different domains (intelligence, personality, aptitude, adjustment, attitude, self-concept, and anxiety).

### MARKS DISTRIBUTION

- (i) Reporting file including case profile : 04 Marks
- (ii) Viva Voice : 05 Marks
- (iii) Two practicals 8 marks each 4 for accurate conduct and 4 for reporting.

### BOOKS RECOMMENDED :

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Psychology

Published by N.C.E.R.T., NEW DELHI.

## 11.SOCIOLOGY

### RATIONAL

Sociology is introduced as an elective subject at the senior secondary stage. The syllabus is designed to help learners to reflect on what they hear and see in the course of everyday life and develop a constructive attitude towards society in change; to equip a learner with concepts and theoretical skills for the purpose. The Curriculum of Sociology at this stage should enable the learner to understand dynamics of human behavior in all its complexities and manifestations. The learners of today need answers and explanations to satisfy the questions that arise in their minds while trying to understand social world. Therefore, there is a need to develop an analytical approach towards the social structure so that they can meaningfully participate in the process of social change. There is scope in the syllabus not only for interactive learning, based on exercises and project work but also for teachers and students to jointly innovate new ways of learning.

- Sociology studies society. The child's familiarity with the society in which she/he lives in makes the study of sociology a double edged experience. At one level sociology studies institutions such as family and kinship, class, caste and tribe religion and region-contexts with which children are familiar of, even if differentially. For India is a society which is varied both horizontally and vertically. The effort in the books will be to grapple overtly with this both as a source of strength and as a site for interrogation.
- Significantly the intellectual legacy of sociology equips the discipline with a plural perspective that overtly engages with the need for defamiliarization, to unlearn and question the given. This interrogative and critical character of sociology also makes it possible to understand both other cultures as well as relearn about one's own culture.
- This plural perspective makes for an inbuilt richness and openness that not too many other disciplines in practice share. From its very inception sociology has had mutually enriching and contesting traditions of an interpretative method that openly takes into account 'subjectivity' and causal explanations that pays due importance to establishing causal correspondences with considerable sophistication. Not surprisingly its field work tradition also entails large scale survey methods as well as a rich ethnographic tradition. Indeed Indian sociology, in particular has bridged this distinction between what has often been seen as distinct approaches of sociology and social anthropology. The Syllabus provides ample opportunity to make the child familiar with the excitement of field work as well as its theoretical significance for the very discipline of sociology.
- The plural legacy of sociology also enables a bird's eye view and a worm's eye view of the society the child lives in. This is particularly true today when the local is inextricably defined and shaped by macro global processes.

- The Syllabus proceeds with the assumption that gender as an organizing principle of society cannot be treated as an add on topic but is fundamental to the manner that all chapters shall be dealt with.
- The chapters shall seek for a child centric approach that makes it possible to connect the lived reality of children with social structures and social processes that sociology studies.
- A conscious effort will be made to build into the chapters a scope for exploration of society that makes learning a process of discovery. A way towards this is to deal with sociological concepts not as givens but a product of societal actions humanly constructed and therefore open to questioning.

### OBJECTIVES

1. To enable learners to relate classroom teaching to their outside environment.
2. To introduce them to the basic concepts of sociology that would enable them to observe and interpret social life.
3. To be aware of the complexity of social processes.
4. To appreciate diversity in society in India and the world at large.
5. To build the capacity of students to understand and analyze the changes in contemporary Indian society.

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**One Paper**

**3 Hours**

**Marks : 85**

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### UNIT-WISE WEIGHTAGE

<b>UNITS</b>	<b>MARKS</b>
<b>INDIAN SOCIETY</b>	<b>43 MARKS</b>
I. Structure of Indian Society	07
II. Social Institution: Continuity & Change	12
III. Social Inequality & Exclusion	12
IV. The Challenges of unity in Diversity	12
<b>CHANGE AND DEVELOPMENT IN INDIA</b>	<b>42 MARKS</b>
V. Process of social Change in India	08
VI. Social Change and the Polity	08
VII. Social Change & the Economy	10
VIII. New Areas of Social Change	08
IX. Social Movements	08

**INDIAN SOCIETY****MARKS 43****UNIT I: STRUCTURE OF INDIAN SOCIETY**

- Introduction Indian Society: Colonialism, Nationalism, class and community 07 Marks
- Demographic Structure
- Rural-Urban linkages and Divisions

**UNIT II. SOCIAL INSTITUTIONS: CONTINUITY & CHANGE**

- Family and Kinship 12 Marks
- The Cast System
- Tribal Society
- The Market as a social Institution

**UNIT III. SOCIAL INEQUALITY & EXVLUSION**

- Caste Prejudice, Scheduled Castes and other Backward Classes 12 Marks
- Marginalization of Tribal Communities
- The Struggle for Women's Equality
- The Protection of Religious Minorities
- Caring for the Differently Able

**UNIT IV: THE CHALLENGES OF UNITY IN DIVERSITY**

- Problems of Communalism, Regionalism, Casteism & Patriarchy 12 Marks
- Role of the state in a plural and Unequal Society
- What we share

**CHANGE AND DEVELOPMENT IN INDIA****MARKS 42****UNIT V: PROCESS OF SOCIAL CHANGE IN INDIA**

- Process of Structural change: 08 Marks  
Colonialism, Industrialization, Urbanization
- Process of Cultural Change:  
Modernization, Westernization, Sanskritisation, Secularization.
- Social Reform Movements & Laws

**UNIT VI: SOCIAL CHANGE AND THE POLITY**

- The constitution as an instrument of Social Change 08 Marks

- Parties, Pressure Groups and Democratic Politics
- Panchayati Raj and the Challenges of social Transformation

#### **UNIT VII: SOCIAL CHANGE & THE ECONOMY**

- Land Reforms, the Green Revolution and agrarian society 10 Marks
- From Planned Industrialization to liberalization
- Change in the Class Structure

#### **UNIT VIII: NEW AREAS OF SOCIAL CHANGE**

- Media and Social Change 8 Marks
- Globalization and Social Change

#### **UNIT IX: SOCIAL MOVEMENTS**

- Class-Based Movement : Workers, Peasants. 8 Marks
- Caste-Based Movements: Dalit Movement, Backward Castes, Trends in Upper caste Responses.
- Women's Movement in Independent India.
- Tribal Movements.
- Environmental Movements.

#### **BOOKS RECOMMENDED:**

Indian Society-Sociology

Published by N.C.E.R.T. New Delhi

Published by N.C.E.R.T. New Delhi

**PHYSICAL EDUCATION**

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**ONE PAPER**

**3 HOURS**

**60 MARKS**

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**PART – A**

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**THEORY**

**27 MARKS**

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**1. PHYSICAL FITNESS AND WELLNESS**

1. Meaning and Importance of physical Fitness and Wellness.
2. Components of Physical Fitness and Wellness.
3. Factors affecting Physical Fitness and Wellness.
4. Principles of Physical Fitness development.
5. Means of fitness development.
  - (a) Aerobic Activities.
  - (b) Anaerobic Activities.
  - (c) Participation in Games and Sports.

**2. TRAINING METHODS**

**2.1 Meaning and concept of training methods.**

- 2.1(1) Principles of Training.
- 2.1(2) Advantage of Training.

**2.2 Methods of Training-**

- 2.2(1) Methods of Strength Development
  - (a) Isometric Exercises
  - (b) Isotonic Exercises
  - (c) Isokinetic Exercises
- 2.2(2) Methods of Endurance Development
  - 2.2 2(a) Continuous Training Methods.
    - (b) Interval Training Method
    - (c) Fartlek Training Method.
  - 2.2(3) Methods of speed Development
    - 2.2 3(a) Speed development
      - (b) Pace Running

**2.3 CIRCUIT TRAINING**

- 2.3(I) Meaning of Circuit Training
  - (II) Kinds of Circuit Training
  - (III) Characteristics of Circuit Training
  - (IV) Advantage of Circuit Training

**2.4 (2) WEIGHT TRAINING**

- 2.4 Warming up

- 2.4(I) Meaning and types of warming up
  - (II) Principles of Warming up
  - (III) Importance of Warming up
- 2.4(2) Meaning and Effects on conditioning on body.
- 2.4(3) Cooling/limbering Down
- 2.4. 3(I) Effects of Cooling Down
- 2.4. 3(ii) Importance of Cooling Down

### **3. SOCIOLOGICAL ASPECTS OF PHYSICAL EDUCATION**

3.1(i) Meaning of Sociological

(II) Importance of Sociology in Physical Education and Sports.

3.2 Games and Sports as man's is cultural Heritage.

3.3 Development of leadership Qualities

3.3(i) Meaning of leadership. Student leadership and Teacher leadership.

3.3(II) Function of Physical Education leader.

3.3(III) Qualities of Physical Education Leader.

#### **PART-B**

**16 Marks**

1. History of the game/sport
2. Latest general rules of the game/sport
3. Measurement of play fields and specifications of sports equipment.
4. Fundamental skills of the game/sport.
5. Related sports/Games terminologies.
6. Important tournaments and venues.
7. Latest Sports personalities.(Till 2018)
8. Sports Awards

#### **PART-C**

**17 Marks**

### **1. HEALTHFUL LIVING**

1.1.(i) Concept of Environment.

1.1.(ii) Aims and Objective of Health Education

1.1.(iii) Principles of Health Education

1.1.(iv) Importance of Health Education

1.1.(v) Factors influencing Health Education

- 1.2. Scope of Environment- Living Environment-Work Environment-Leisure Activities.
- 1.3. Essential elements of healthful Environment, safe water, Low Level of noise, clean air, sanitary surrounding, low level of radioactive radiations.

#### 1.4. DISASTER PREPAREDNESS AND HEALTH CARE DURING DISASTER

- 1.4.(i) Meaning and types of disaster.
- (ii) Causes, effects and management of disaster.
- (iii) How to prepared for disaster.

### **2. FAMILY HEALTH EDUCATION**

- 2.1.(i) Meaning and types of family
- (ii) Function of a family
- 2.2.(i) Meaning of Adolescence
- (ii) Problems of Adolescence and their management.
- 2.3 Human reproduction- menstruation conception and parental care.
- 2.4 Problems associated pre-marital sex and teenage pregnancies.
- 2.5 Preparation for marriage and parenthood.
- 2.6 Role of Parent in child care.

### **3. PREVENTION AND FIRST AID FOR COMMON SPORTS INJURIES**

- 3.1. Soft tissue injuries-sprain and strain
- 3.2. Cause of injuries in sports.
- 3.3. Precautions to be taken by instruction and the Players.
- 3.4. Fracture, types, causes and treatments.
- 3.5. Joint injuries, types, cause and treatment of joint injuries.

### **PRACTICAL**

**26 MARKS**

The activity syllabus has been divided into following four parts. The marks of each part are as follows:

Part-A	Track and Field (Two events)	-	8 Marks
Part-B	Games and Sports (One Game)	-	4 Marks
Part-C	Achievement in Sports	-	10 Marks
Part-D	Practical Note Book (Class Record)	-	3 Marks

### **PART- A TRACK AND FIELD**

Any two events may be opted. Each event will carry 4 marks out of which 2 marks are for viva concerning athletics event selected by the candidate.

1. Sprints 100 meters or 200 meters or 400 meters.
2. Middle and Long distance running 800 meters or 1500\* meters or 3000\* meters
3. Broad Jump.
4. Triple Jump\*
5. High Jump.
6. Shot Put.



7. Discuss throw.
8. Javelin Throw.  
\*denotes 'for boys only'

#### PART- B TEAM GAMES

Any one game from Group A and B may be opted. The game will carry 4 marks out of which 2 marks will be proficiency in the game and skills of the game.

Group A	Group B
Hockey	Badminton
Football*	Wrestling*
Volley Ball	Table Tennis
Basket Ball	Boxing*
Kabaddi	Rhythmic (Folk Dance, Drill & Marching)
Kho-Kho	
Hand Ball	

\*denotes 'for boys only'

#### PART C ACHIEVEMENT IN SPORTS

(Breakup of 10 marks shall be as follows)

- |                                 |    |
|---------------------------------|----|
| 1. School level participation   | 4  |
| 2. Zonal level participation    | 5  |
| 3. District level participation | 7  |
| 4. State level participation    | 9  |
| 5. National level participation | 10 |

#### PART D PRACTICAL NOTE BOOK

Practical Record (activities)	3 marks
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## **13. PUBLIC ADMINISTRATION**

**ONE PAPER**

**3 HOURS**

**85 MARKS**

*Some Aspects of Indian Administration :*

### **UNIT 1 EVOLUTION OF INDIAN ADMINISTRATION :**

Evolution and development of Central Administration in India (Mughal and British Period) British influence on Indian administration and its legacies.

### **UNIT II INDIAN ADMINISTRATION AND CONSTITUTION :**

Indian Administration and its social, Economical, Political, Legal and constitutional influence. Legislative administration and financial relations between the Unions and the States. Controversy regarding center-state relations.

### **UNIT III PERSONNEL ADMINISTRATION :**

All India Services :- Characteristics, merits and demerits Recruitment and Training of I.A.S., I.P.S. and I.F.S. (Forest) defects of Recruitment and Training in India. Role of U.P.S.C.

### **UNIT IV STATE ADMINISTRATION**

Governor as Chief Executive. Administrative Secretariat. Role of Chief Secretary.

### **UNIT V ADMINISTRATION OF LOCAL GOVTS**

Meaning, Features, Kinds (Panchayat, Panchayat Samiti, Zila Parishad, Municipal Committee and Municipal Corporation). Role of B.D.O. and Executive Officers. Reasons for unsatisfactory functions of Local Govts. and remedies.

### **UNIT VI DEVELOPMENT ADMINISTRATION :**

Meaning, significance and essential factors for development administration. Composition and functions of Planning Commission in India, NDC (National Development Council), Contributions and problems of Public Sector in India.

### **UNIT VII FINANCIAL ADMINISTRATION :**

**Budget** : Meaning , Kinds, Principles and Significance, Preparation of Budget.

### **UNIT VIII CITIZEN AND ADMINISTRATION :**

Importance of citizen's participation in administration, causes of poor citizen's participation in administration. Methods to make effective citizen's participation in India.

### **UNIT IX ADMINISTRATIVE TRIBUNALS :**

Meaning, reasons for growth, advantages and disadvantages. Differences between administrative tribunals and laws courts.

### **UNIT X ADMINISTRATIVE CORRUPTION :**

Meaning, Causes and remedies, Ombudsman (Lokpal)

Central Vigilance Commission.

### **BOOKS RECOMMENDED :**

Any book conforming to the syllabus.

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## 15.MUSIC (HINDUSTANI VOCAL)

MARKS 85

One Theory Paper

Time : 3 Hours

Marks 25

### A. THEORY

1. (a) **Definition of the following:**

Varna, Grama, Murchana, Alankar, Gamaka, Khatka, Murki, Kan, laya and Tala.

(b) Classification of Ragas. Time theory of Rages.

2. (a) Brief history of ancient Hindustani Music with special reference to Sangeet Ratnakar. (Brief history of medieval and modern period of Hindustani Music with special reference of Sangeet Parijata and the works of Pt. Bhatkhande).

3. Description of the Ragas prescribed for Class XII Practical.

4. To recognize the Ragas from given passages of Swaras.

5. Writing of Notation of prescribed Songs and Talas.

6. Biography of Musicians.

1. Ustad Abdul Karim Khan

(mLrkn vCny djhe [kku)

2. Ustad Fayaz Khan

(mLrkn Q\$ kt [kku)

3. Pt. Krishan Rao Shankar

(i- d'.k jko "kadj)

4. Ustad Bade Ghulam Ali Khan

(mLrkn cM\$xyke vyh [kku)

5. Tyagaraj

(R; kx jkt)

6. Purandan Ghosh

(i gUn ?kksk)

### B. One Practical Paper

60 Marks

#### PAPER:

1. (a) One Drut Khayal in Bihag, Bhairav, Kedar and Bhimpalasi with simple elaborations.

(b) One Tarana, one Dhrupada, one Dhamar in any prescribed raga.

(c) One Thumri or Dadra Style Composition in Khamaj or a devotional song.

(d) One Swarnalika in any Raga.

2. The recitation of Thekas Kehrwa, dadra, jhaptaal, Rupak Tilwada and Dhamar with Dugun, keeping Tala with hand beats.

3. Ability to sing Aroha, Avaroha, Pakad and Simple Swar Vistar with Alap and Tana in the prescribed Ragas.

4. Ability to recognise the prescribed Ragas from the passages of Swaras rendered by the Examiner.

**HINDUSTANI MUSIC (VOCAL) PRACTICAL**  
**GUIDELINES TO THE EXAMINER FOR EVALUATION OF PRACTICALS**

One Practical Paper

Marks : 60

TIME DURATION: 20 TO 30 MINUTES PER CANDIDATE:

**GENERAL INSTRUCTIONS:**

1. Examiners are requested to ask the questions directly related to the syllabus.
2. Marks should be awarded in accordance with the marking scheme.

**DISTRIBUTION OF MARKS**

S. No.	Value Points	Marks
1.	Tuning of Tanpura and questions regarding Tanpura.	04+04 = 08
2.	Choice Raga (Vilambit and Drut Khayal)	(8+4) = 12
3.	Examiners Choice Drut Khayal	08
4.	One Dhrupad or One Dhamar	10
5.	Compositions in Raga Khamaj	04
6.	Identification of Swaras & Ragas	05+05 = 10
7.	Identification of Tala Played on Tabla	04
8.	Reciting the Theka of a Tala with hand beats	04

**LIST OF QUESTIONS FOR THE GUIDANCE OF THE EXAMINERS**

1. **Tuning of Tanpura :** The student may be asked to tune the Tanpura Some questions to be asked regarding Tanpura (Parts of Tanpura)
2. **Choice Raga:** The student may be asked to sing a Raga prescribed in the syllabus of his/her own choice. Choice Raga with Vilambit Khyal & Drut Khyal with simple Alap & Tanas in Akar Before performing the Raga, they may be asked to sing aroha, Avaroha and Pakad of the Raga.
3. **Other Drut Khyals:** It is examiner's choice, he/she may ask one or two Drut Khyals with Aroha, Avaroha, Pakad and simple elaboraton in medium and fast tempo.
4. **Dhrupad/Dhamar:** It is examiner's choice, he/she may ask the student to sing Dhrupad or Dhamar with Dugun and Chaugun.
5. **Tarana:** The Student may be asked to sing Tarana in any prescribed Raga with medium and fast tempo.
6. **Composition in Raga Khamaj:** The student may be asked to sing composition in Raga Khamaj (in Thumri style or dadra style).



7. **Identification of Swaras and Ragas:** The students may be asked to identify the pattern of Swaras and Ragas sung in Akar by the examiner.
8. **Identification of Talas:** The student should be asked to recognise the Tala, Played on Tabla. The examiner can ask the student to identify more than one tala.
9. **Reciting of Theka:** The examiner may ask the student to recite the theka of any Tala in Thah (barabar) and Dugun with hand beats.

<b>(B) HINDUSTANI (INSTRUMENTAL MELODIC)</b>
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<b>One Theory Paper</b>	<b>3 Hours</b>	<b>Marks: 25</b>
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**A. THEORY:****1. (a) Definition of the following:-**

Gram, Murchana, Varna, Alankar, Gamaka, Krintan, Zamzama..

**(b)** Classification of Ragas, Time theory of Ragas.

**2. (a)** Brief history of Ancient Hindustani Music with special reference to Sangeet Ratnakar.

**(b)** Brief history of medieval and Modern period of Hindustani Music with special reference to Sangeet Parijata and works of Pt. V.N. Bhatkhande.

**(c)** Description of the Ragas Prescribed for Class-XII Practical.

**3.** Description and construction of instruments opted, along with the basic techniques of playing.**4.** To Recognise the Ragas from given passages of Swaras**5.** Writing Notation of compositions (Gat) and Talas.**6. Biographies of Musicians.**

- |                                  |   |                       |
|----------------------------------|---|-----------------------|
| <b>(a)</b> Tansen                | - | rkul uA               |
| <b>(b)</b> Ustad Inayat Khan     | - | mLrkn buk; r [kkA     |
| <b>(c)</b> Ustad Mushtaq Alikhan | - | mLrkn eq rkd vyh [kkA |
| <b>(d)</b> Ustad Alauddin Khan   | - | vykÅ) hu [kkA         |
| <b>(e)</b> Alladia Khan          | - | vYykf) ; k [kkA       |

<b>One Practical Paper</b>		<b>Marks 60</b>
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**B. Practical Paper**

1. **(a)** One Razakhani gat in Bhairav, Bihag, Kedar and bhimpalasi with elaborations (Toda and Jhala) with Sthaya and Antara.
- (b)** Two Masitkhani compositions (gats) in a prescribed Raga with elaborations.
- (c)** One composition in Khamaj in Thumri style or Dhun.
- (d)** Ability to produce Meend in any prescribed Raga of minimum two swaras.
- (e)** One composition in Ektala and one in Jhaptala.

2. Ability to play Aroha, Abaroha, Pakad, Simple Swara-Vistars with Alap and Toda in the prescribed Ragas.
3. Ability to recite Thekas of Jhaptal, Rupak, Tilwada and Dhamar with Dugun, keeping tala with hand beats.
4. Ability to recognise the prescribed Ragas from passages of Swaras sung or played by the examiner.
5. To recognize the Swaras.

**HINDUSTANI MUSIC (INSTUMENTAL) MELODIC PRACTICAL GUIDELINES TO THE EXAMINER  
FOR EVALUATION OF PRACTICALS**

**One Practical Paper**

**Marks: 60**

Time Duration: 20 to 30 minutes for each candidate.

**GENERAL INSTRUCTIONS:**

1. Examiners are requested to ask the questions directly related to the syllabus.
2. Marks should be awarded in accordance with the marking scheme.

**DISTRIBUTION OF MARKS:**

Sr. No.	Value Points	Marks
1	Tunning of Instrument and questions regarding instrument 4+4	08
2	Choice Raga (Masit Khani Gat & Razakhani) (8+4)	12
3	Razakhani Gat with Toda & Jhala of Examiners choice	04
4	To play Swara-vistar in a Raga of Examiners choice	08
5	Meend of Swaras	05
6	Composition of Raga Khamaj	05
7	Identifying of the Swaras and Raga	10
8	Identification of Tala played on Tabla	04
9	Reciting the Theka of a Tala with hand beats.	04

**GUIDELINES FOR THE EXAMINERS**

1. **Tuning of Instrument:** The student should be asked to tune his/her instrument. Some questions to be asked regarding instruments (Parts of the instrument).
2. **Choice Raga:** The student should be asked to play a Raga of his/her own choice prescribed in the syllabus. Choice Raga-Masit Khani Gat and Raza Khani Gat with alap, Toda and Jhala Before performing the Raga, the student may be asked to play aroha, Abaroha and Pakad of the Raga.
3. **Raza Khani Gat:** It is examiner's choice, he/she may ask the student to play any Masit-Khani Gat on his/her instrument with Alap and Tan, Toda in Chaugun.

4. **Swara Vistar:** The examiner may ask the student to play swar vistar in a Raga of examiner's choice.
5. **Meend of Swaras:** The student may be asked to play a few simple Alaps using Meend on instrument (Meend upto two swaras)
6. **Composition in Khamaj:** The Student may be asked to play composition in Raga Khamaj on instrument.
7. Identify the Raga from the passages of Swaras played by the examiners (Rag Pehcham)
8. **Identification of Tala:** The student may asked to identify the Tala played on Tabla. The examiner can ask the student to identify more than one Tala.
9. **Reciting of Theka:** The examiner may ask the student to recite the Theka (of examiner's choice of any of Thah, Barabar) Dugun and chaugun with hand beats.
10. **Simple question about Raga:** The examiner may ask simple question about any prescribed Raga i.e. Jati, Vadi, Samavadi, thata, time of singing, Varjit swaras etc.

**(C) HINDUSTANI (INSTRUMENTAL PERCUSSION)**

**(TABLA OR PAKHAWAJ)**

**ONE THEORY PAPER**

**MARKS : 25**

**3 HOURS**

**A. THEORY**

1. **(a) Definition of the following terms.**  
Verna, Alankar, (Gamaka, Krintan, zamzama) Zarab, Kala, Kriya Anga, Peshkar, Chakkardar, (Classification of ragas. Time Theory of Ragas) and Rela & Paran.  
**(b) Comparative study of smantar Talas**  
**(a)** Chautal Ektal  
**(b)** Jhaptal-Sul Tal  
**(c)** Dhamar-Chautal  
**(c)** Classification of Jatis of different patterns  
**(d)** Classification of Layakari.
2. **(a)** Brief history of Ancient Hindustani Music with special reference to sangeet Ratnakara.  
**(b)** Brief history of medieval and modern period of Hindustani Music with special reference to sangeet Parijat and the works of Pt. V. N. Bhaatkhande.
3. Description of talas prescribed for class XII practical.
4. Writing Notation of the prescribed talas.
5. Recognition of talas from given portion of the Thekas.

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**One Practical Paper****Marks 60**

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**B. PRACTICAL ACTIVITIES**

1. Playing the thakas of Jhaptal and Rupak or sool tala and chautal Tala on Tabla with simple elaborations.
2. 2 Peshkaras 2 Qayadas, 2 Tukras and a few gats in Tentel, Ektal and Jhaptal or chautal and Dhamar.
3. Playing the Thekas of rupak, Tilwara in Chautaal and dhamar with dugun and chaugun, with Mukhda and Tihai.
4. Recitation of the prescribed talas with dugun and chaugun keeping tala with hand beats.
5. A few simple laggis is Dadra tala or chutal on Pakhawaj.
6. Knowledge of tuning of the instrument.

**HINDUSTANI MUSIC (INSTRUMENTAL PERCUSSION PRACTICAL) GUIDELINES TO THE EXAMINERS FOR EVALUATION OF PRACTICALS**

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**One Practical Paper****60 Marks**

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**Time Duration: 20 to 30 minutes each candidate****GENERAL INSTRUCTIONS:**

1. Examiners are requested to ask question directly related to the syllabus.
2. Marks should be given in accordance with the marking scheme.

**DISTRIBUTION OF MARKS**

Sr. NO.	Value Points	Marks
1.	Tuning of Instrument and question regarding instrument	18
2.	Choice Tala	18
3.	Tala of Examiner's choice	08
4.	Tala in Dugun, Chaugun with Mukhda & Tihai	08
5.	Reciting of Tala with hand beats	08
	<b>Total</b>	<b>60</b>

### **LIST OF QUESTIONS FOR THE GUIDANCE OF THE EXAMINER**

1. **Tuning of Instrument:** The students should be asked to tune the instrument. Some questions should be asked regarding instruments.
2. **Choice Tala:** The student should be asked to play the tala of his/her own choice (Prescribed in the syllabus) with elaborations, Peshkar, Quayada, gat, Tikra and Tihai.
3. **Tala of Examiner's choice:** The student should be asked to play the tala of examiner's choice with elaborations (Teen Tala/Jhap Tala/Ek Tala/Roopak Tala)
4. **Tala in Dugun Chaugan with Mukhda and Tihai:** (Examiner's choice) The examiner may ask to play any (Roopak/Tilwara/Chautala/Dhamar Tala)
5. **To recite the Tala with hand beats:** The student should be asked recite the theka of Tala in Than, (Barabar) Dugun and chaugun hand boats. The Examiner may ask the student to play more than tala.
6. **Laggi in Dadra Tal:** The student should be asked to play accompanying a song set to Dadra Tala sung by the examiner.
7. **Questions regarding Laya & Tala:** Some questions should be asked regarding Laya (Vilambit Madhya and Drut Laya) and Tala (Roopak, Jhaptal, Ektal, etc.)

### **BOOK RECOMMENDED**

Any book confirming to the syllabus.

## 16.DANCE

**One Theory Paper**

**Time : 3 Hours**

**Marks : 25**

1. A brief history and acquaintance with the classical styles or folk forms prevalent in the region, other than the one offered for study.
2. Acquaintance with the history of the chief exponents past and present of the dance form.
3. Acquaintance with the contents of the Abhinaya Darpana.
4. **Knowledge of the following terms :**
  - (i) Nirtta, Nritya, Natya Tandava, Lasya.
  - (ii) Anga, Upanga, Pratyanga.
  - (iii) Sthana, Chari, Gati, Mandla, Karna, Bhramari, Utplavana.
  - (iv) Abhinaya (Angika, Vachika, Satvika, Acharya) with special reference to Hasta-Abhinaya, Mukhaja abhinay and Netra-Abhinaya.
  - (v) Sangeet, Tala, Laya.
  - (vi) Rasa, Sthyibhava, Sanchribhava.
5. **Knowledge of the Technical Terminology of the dance form.**
  - (a) **Definition of the following :**
    - (i) Vandana,
    - (ii) Tthaat
    - (iii) Aamad,
    - (iv) Toda/Tukra,
    - (v) Paran,
    - (vi) Chakardar Toda and Paran,
    - (vii) Gatnikas,
    - (viii) Gatbhav,
    - (ix) Tala,
    - (x) Teen Tala,
    - (xi) Jhaptala.
  - (b) Knowledge of Thaka of Dadra, Kaharwa, Roopak.
  - (c) Definitions of Tali, Khali, Sam, Tihayee.
  - (d) Ability of notate a Tukra/Toda, Paran alongwith its basic Tala.
6. Acquaintance with the traditional costumes make up of the dance type offered.

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**One Practical Paper**

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**60 Marks**

1. Practical of the Tatkara to teentala in all layas.
2. **The students should know all the techniques and compositions of the following :-**
  - (i) Vanda 01
  - (ii) Ganesh Paran 01
  - (iii) Tthaat 01
  - (iv) Aamad 02
  - (v) Fast Aamad 02
  - (vi) Pramalu 02
  - (vii) Tihayee 04
  - (viii) Gatbav 03
  - (ix) Parhant of Tukra/Toda, Paran learnt with Tala 01

- Note :-**
1. The student should be taught some of these composition in Jhaptaal.
  2. Ability to improvise in Nritta and Abhinaya.
  3. Parhant (recitation of bols) to the basic thetka of all composition learnt.
  4. Ability to play the 'theka' of teentala and jhaptala on the table.

**One Theory Paper****3 Hours****25 Marks**

1. A brief history and acquaintance with other classical styles or folk-form prevalent in the region, other than the one offered for study.
2. Acquaintance with life history of the chief exponents past and present of the Dance form.
3. Acquaintance with contents of the Abhinaya Darpana.
4. **Knowledge of the following terms :-**
  - (i) Nritta, Nritya, Natya, Tandava, Lasya.
  - (ii) Anga, Upanga, Pratyanga.
  - (iii) Sthana, Chari, Mandala, Karna, Bhramari, Utplavana.
  - (iv) Abhinaya, (Angika, Vachika, Satvika, Acharya) with special reference to Hasta-Abhinaya, Mukhaja abhinaya and Netra abhinaya.
  - (v) Sangeet, Tala, Laya.
  - (vi) Rasa, Sthayibhava, Sancharibhava.
5. **Knowledge of the Technical Terminology of the particular Dance form (Any one to be studied in accordance with the Dance style offered).**

- (a) **Definitions of the following:**  
Adavu, Korvai, Jati, Teermarnam Sollukattu, Aridi, Usi, Tattukkarhi, Nattuvangam, Attami, Arainadi, Arangetram.
- (b) Ability to write a korvai with Adavu syllabus.
6. Acquaintance with traditional costumes, make up of the Dance type offered.

**One Practical Paper**

**60 Marks**

1. Revision of all the adavus in class XI
2. Jatiswaram 01
3. Sabdam 01
4. Padam of Kitanam 02
5. Tillana 01
6. Tala, Triputa tala and ability to repeat the adavua syllables in rupak a and Triputa talas and of the korvais of the Jatiswaram and Tillana in their respective talas. Knowledge of the Sapta tale with claping.
7. Hastas-Viniyogas of 10 Asamyata and 5 Samuta Hastas, Deva Hastas (all abhinaya darpanam).
8. Knowledge of the Pada Bhedas, Mandalams Bhramaris and Utplavanas occurring in the items learnt (abhinaza darpanam).
9. Basic Knowledge in music-Preferably Karnataka Music.
10. One folk Dance of the region.
11. Ability ot improvise korvais on Aadi tala and Abhinaya on simple songs.

**Note:-** Students will be examined in all the technique and compositions, he has learnt in class XI.

**BOOKS RECOMMENDED:**

Any book confirming to the syllabus



## 17. PHYSICS

Senior secondary stage of school education is a stage of transition from general education to discipline-based focus on curriculum. The present update syllabus keeps in view the rigour and depth of disciplinary approach as well as the comprehension level of learners. Due care has also been taken that the syllabus is not heavy and is at the same time, comparable to the international standards. Salient features of the syllabus include:

- Emphasis on basic conceptual understanding of the content.
- Emphasis, on use of SI units, symbols, nomenclature of physical quantities and formulations as per international standards.
- Providing logical sequencing of the units of the subject matter and proper placement of concepts with their linkage for better learning.
- Reducing the curriculum load by eliminating overlapping of concepts/content within the discipline and other disciplines.
- Promoting process-skills, problems-solving abilities and applications of Physics concepts.

**Besides, the syllabus also attempts to:**

- Strengthen the concepts developed at the secondary stage to provide firm foundation for further learning in the subject.
- Expose the learners to different processes used in Physics-related industrial and technological applications.
- Develop process-skills and experimental, observational, manipulative, decision making and investigatory skills in the learners.
- Promote problem solving abilities and creative thinking in learners.
- Develop conceptual competence in the learners and make them realize and appreciate the interface of Physics with other disciplines.

### THEORY

One Paper	Time: 3 Hrs	60 Marks
Unit-I	Electrostatics	07
Unit-II	Current Electricity	07
Unit-III	Magnetic effect of current & Magnetism	07
Unit-IV	Electromagnetic Induction and Alternating Current	07
Unit-V	Electromagnetic Waves	03
Unit-VI	Optics	12
Unit-VII	Dual Nature of Matter	03
Unit-VIII	Atoms and Nuclei	04
Unit-IX	Electronic Devices	06
Unit-X	Communication Systems	04

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**Unit I: Electrostatics**

Electric Charges; Conservation of charge, Coulomb's law-force between two point charges, forces between multiple charges; superposition principle and continuous charge distribution.

Electric field, electric field due to a point charge, electric field lines, electric dipole, electric field due to a dipole; torque on a dipole in uniform electric field.

Electric flux, statement of Gauss's theorem and its applications to find field due to infinitely long straight wire, uniformly charged infinite plane sheet and uniformly charged thin spherical shell (field inside and outside).

Electric potential, potential difference, electric potential due to a point charge, a dipole and system of charges; equipotential surfaces, electrical potential energy of a system of two point charges and of electric dipole in an electrostatic field.

Conductors and insulators, free charges and bound charges inside a conductor; Dielectrics and electric polarization, capacitor and capacitance, combination of capacitors in series and in parallel, capacitance of a parallel plate capacitor with and without dielectric medium between the plates; energy stored in a capacitor. Van de Graaff generator.

**Unit II : Current Electricity**

Electric current, flow of electric charges in a metallic conductor, drift velocity and mobility, and their relation with electric current; Ohm's law, electrical resistance, V-I characteristics, (linear and non-linear) electrical energy and power, electrical resistivity and conductivity, Carbon resistors, colour code for carbon resistors; series and parallel combinations of resistors; temperature dependence of resistance.

Internal resistance of a cell, Potential difference and emf of a cell, combination of cells in series and in parallel.

Kirchhoff's laws and simple applications, Wheatstone bridge, Metre bridge.

Potentiometer- principle and its applications to measure potential difference, and for comparing emf of two cells; measurement of internal resistance of a cell.

**Unit III : Magnetic Effect of Current and Magnetism**

Concept of magnetic field, Oersted's experiment.

Biot-Savart law, and its application to current carrying circular loop.

Ampere's law and its applications to infinitely long straight wire, straight and toroidal solenoids.

Force on a moving charge in uniform magnetic and electric fields Cyclotron.

Force on a moving charge in uniform magnetic and electric fields Cyclotron.

Force on a current-carrying conductor in a uniform magnetic field. Force between two parallel current-carrying conductors-definition of ampere. Torque experienced by a current loop in uniform magnetic field; moving coil galvanometer-its current sensitivity and conversion to ammeter and voltmeter.

Current loop as a magnetic dipole and its magnetic dipole moment; Magnetic dipole moment of a revolving electron; Magnetic field intensity due to a magnetic dipole (bar magnet) along its

axis and perpendicular to its axis. Torque on a magnetic dipole (bar magnet) in a uniform magnetic field; bar magnet as an equivalent solenoid, magnetic field lines; Earth's magnetic

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field and magnetic elements; Para, dia and ferro-magnetic substances with examples, Electromagnets and factors affecting their strengths Permanent magnets.

#### **Unit IV: Electromagnetic Induction and Alternating Current**

Electromagnetic induction, Faraday's laws, Induced emf and current, Lenz's law, Eddy currents, Self and mutual inductance.

Need for displacement current.

Alternating currents, peak and rms value of alternating current/voltage, reactance and impedance; LC oscillations, (qualitative treatment only), LCR series circuit, resonance; Power in AC circuits, wattless current.

AC generator and transformer.

#### **Unit V Electromagnetic Waves**

Electromagnetic waves and their characteristics (qualitative ideas only); Transverse nature of electromagnetic waves.

Electromagnetic spectrum (radio-waves, microwaves, infrared, visible, ultraviolet, X-rays, gamma rays) including elementary facts about their uses;

#### **Unit VI : Optics**

Reflections of light, spherical mirrors, mirror formula. Refraction of light total internal reflection and its applications, optical fibers, refraction at spherical surfaces, lenses, thin lens formula, lens-maker's formula. Magnification, power of a lens, combination of thin lenses in contact. Refraction and dispersion of light through a prism.

Scattering of light- blue colour of the sky and reddish appearance of the sun at sun rise and sunset.

**Optical instruments** – Human eye, image formation and accommodation, correction of eye defects (myopia, hypermetropia, presbyopia and astigmatism) using lenses. Microscopes and astronomical telescopes (reflection and refraction) and their magnifying powers.

**Wave Optics** – Wave front and Huygen's principle; reflection and refraction of plane wave at a plane surface using wave fronts. Proof of laws of reflection and refraction using Huygen's principle. Interference- Young's double slit experiment and expression for fringe width, coherent sources and sustained interference of light. Diffraction due to a single slit, width of central maximum. Resolving power of microscopes and astronomical telescopes. Polarisation, plane polarized light, Brewster's Law; uses of plane Polarized light and Polaroid.

#### **Unit VII : Dual Nature of Matter and Radiation**

Dual nature of radiation. Photoelectric effect, Hertz and Lenard's observation; Einstein's photoelectric equation-particle nature of light.

Matter waves – wave nature of particles, de-Broglie relation, Davisson Germer experiment.

**Unit VIII : Atomic & Nuclei**

Alpha-particle scattering experiment, Rutherford's model of atom; Bohr model, energy levels, hydrogen spectrum.

Composition and size of nucleus, atomic masses, isotopes, isobars, isotones, Radioactivity-alpha, beta and gamma particles/rays and their properties; radioactive decay law. Mass-energy relation, mass defect, binding energy per nucleon and its variation with mass number, nuclear fission and fusion.

**Unit IX : Electronic Devices**

Semiconductors; Semiconductor diode-I-V characteristics in forward and reverse bias, diode as a rectifier; I-V characteristics of LED, photodiode, solar cell, and Zener diode; Zener diode as a voltage regulator. Junction transistor, transistor action, characteristics of transistor; transistor as an amplifier (common emitter configuration) and oscillator. Logic gates (OR, AND, NOT, NAND, and NOR): Transistor as a switch.

**Unit X : Communication Systems**

Elements of a communication systems (block diagram only); bandwidth of signals (speech, TV and digital data); bandwidth of transmission medium. Propagation of electromagnetic waves in the atmosphere, sky and space wave propagation. Need for modulation. Production and detection of an amplitude-modulated wave.

**PRACTICALS**

Every student will perform 10 experiments (5 from each section) and 8 activities (4 from each section) during the academic year. Two demonstration experiments must be performed by the teacher with participation of students. The students will maintain a record of these demonstration experiments.

**B. Evaluation Scheme for Practical Examination:**

- |   |                        |
|---|------------------------|
| • One experiment from any one Section                                   | <b>7 Marks</b>         |
| • Two activities (One from each section)                                | <b>3 + 3 = 6 Marks</b> |
| Practical record (experiments & activities)                             | <b>5 Marks</b>         |
| • Record of demonstration experiments & Viva based on these experiments | <b>2 Marks</b>         |
| • Viva on experiments and activities                                    | <b>5 Marks</b>         |

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**Total**


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**25 Marks**


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**SECTION A****EXPERIMENTS**

- To determine resistance per cm of a given wire by plotting a graph of potential difference versus current.
- To find resistance of a given wire using meter bridge and hence determine the specific resistance of its material.

3. To verify the laws of combination (series/parallel) of resistances using a meter bridge.

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4. To compare the emf of two given primary cells using potentiometer.
5. To determine the internal resistance of given primary cell using potentiometer.
6. To determine resistance of a galvanometer by half-deflection method and to find its figure of merit.
7. To convert the given galvanometer (of known resistance of figure of merit) into an ammeter and voltmeter of desired range and to verify the same.
8. To find the frequency of the a.c. mains with a sonometer.

#### ACTIVITIES

1. To measure the resistance and impedance of an inductor with or without iron core.
2. To measure resistance, voltage (AC/DC), current (AC and check continuity) of a given circuit using multimeter.
3. To assemble a household circuit comprising three bulbs, three (on/off) switches, a fuse and a power source.
4. To assemble the components of a given electrical circuit.
5. To study the variation in potential drop with length of a wire for a steady current.
6. To draw the diagram of a given open circuit comprising at least a battery, resistor/rheostat, key, ammeter and voltmeter. Mark the components that are not connected in proper order and correct the circuit and also the circuit diagram.

#### SECTION B

#### EXPERIMENTS

1. To find the value of  $v$  for different values of  $u$  in case of, a concave mirror and to find the focal length.
2. To find the focal length of a convex lens by plotting graphs between  $u$  and  $v$  or between  $1/u$  and  $1/v$ .
3. To find the focal length of a convex mirror, using a convex lens.
4. To find the focal length of a concave lens, using a convex lens.
5. To determine angle of minimum deviation for a given prism by plotting a graph between angle of incidence and the angle of deviation.
6. To determine refractive index of a glass slab using a travelling microscope.
7. To find refractive index of a liquid by using (i) concave mirror, (ii) convex lens and plane mirror.
8. To draw the I-V characteristic curve of a p-n junction in forward bias and reverse bias.
9. To draw the characteristic curves of a zener diode and to determine its reverse break down voltage.
10. To study the characteristics of a common-emitter npn or pnp, transistor and to find out the values of current and voltage gains.

#### ACTIVITIES

1. To study effect of intensity of light (by varying distance of the source) on an L.D.R.

2. To identify a diode, an LED, a transistor, and IC, a resistor and a capacitor from mixed collection of such items.

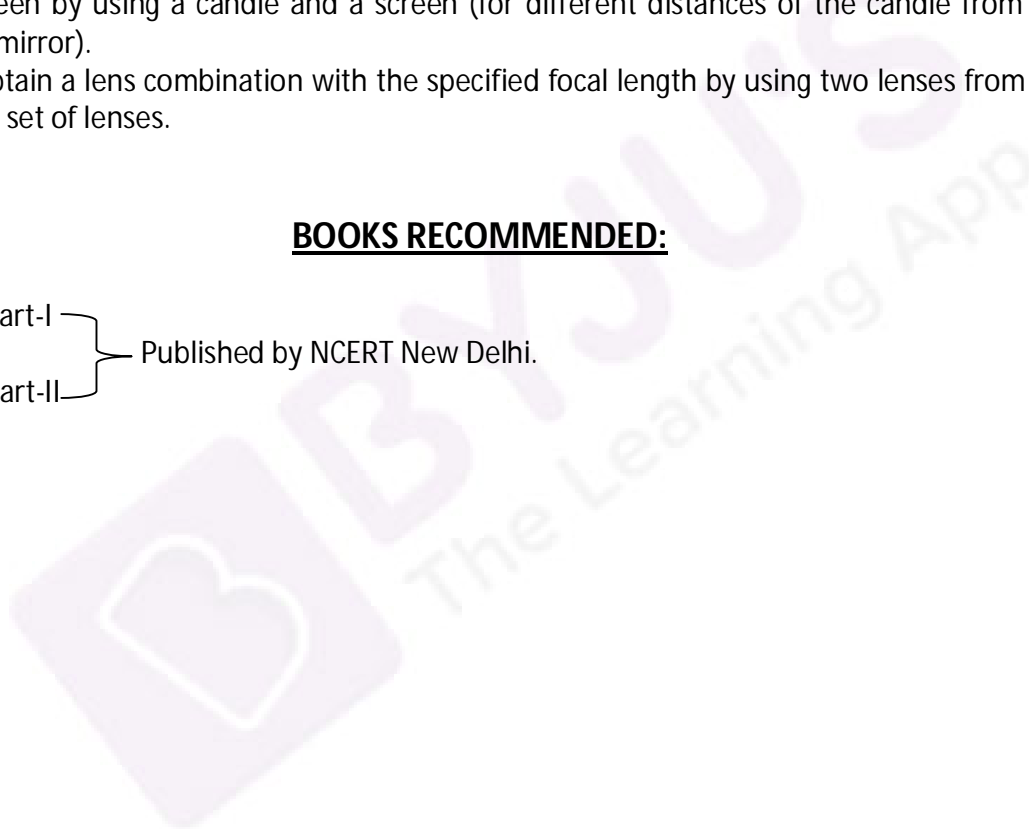
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**3. Use of multimeter to**

- (i) Identify base of transistor
  - (ii) Distinguish between npn and pnp type transistors
  - (iii) See the unidirectional flow of current in case of a diode and an LED.
  - (iv) Check whether a given electronic components (e.g. diode, transistor or I C ) is in working order.
4. To observe refraction and lateral deviation of beam of light incident obliquely o glass slab.
  5. To observe polarization of light using two Polaroid.
  6. To observe diffraction of light due to a thin slit.
  7. To study the nature and size of the image formed by (i) convex lens (ii) concave mirror, on a screen by using a candle and a screen (for different distances of the candle from the lens/mirror).
  8. To obtain a lens combination with the specified focal length by using two lenses from the given set of lenses.

**BOOKS RECOMMENDED:**

Physics Part-I }  
Physics part-II } Published by NCERT New Delhi.



**18.CHEMISTRY****RATIONAL**

Higher secondary is the most crucial stage of school education because at this juncture specialized discipline based, content-oriented courses are introduced. Students reach this stage after 10 years of general education and opt for chemistry with a purpose of pursuing their career in basic sciences or professional courses like medicine, engineering, technology and study courses in applied areas of science and technology at tertiary level. Therefore, there is a need to provide learners with sufficient conceptual background of Chemistry, which will make them competent to meet the challenges of academic and professional courses after the higher secondary stage.

The new and updated curriculum is based on disciplinary approach with rigor and depth taking care that the syllabus is not heavy and at the same time it is comparable to the international level. The knowledge related to the subject of chemistry has undergone tremendous changes during the past one decade. Many new areas like synthetic materials, bio-molecules, natural resources, industrial chemistry are coming in a big way and deserve to be an integral part of chemistry syllabus at senior secondary stage. At international level, new formulations and nomenclature of elements and compounds, symbols and units of physical quantities floated by scientific bodies like IUPAC and CGPM are of immense importance and need to be incorporated in the updated syllabus. The revised syllabus takes care of all these aspects. Greater emphasis has been laid on use of new nomenclature, symbols and formulations, teaching of fundamental concepts, applications of concepts in chemistry to industry/technology, logical sequencing of units, removal of obsolete content and repetition etc.

**OBJECTIVES**

The board objectives of teaching Chemistry at Senior Secondary Stage are to help the learners:

- To promote understanding of basic facts and concepts in chemistry while retaining the excitement of chemistry.
- To make students capable of studying chemistry in academic and professional courses (such as medicine technology) at tertiary level.
- To expose the students to various emerging new areas of chemistry and apprise them with their relevance in their future studies and their application in various spheres of chemical sciences and technology.

- To equip students to face various, changes related to health, nutrition, environment, population, weather, industries and agriculture.
- To develop problem solving skills in students.
- To expose the students to different processes used in industries and their technological applications.
- To apprise students with interface of chemistry with other disciplines of science such as physics, biology, geology, engineering etc.
- To acquaint students with different aspects of chemistry used in daily life.
- To develop an interest in students to study chemistry as a discipline.

**(THEORY)**

**One Paper**

**Time: 3 Hours**

**60 Marks**

Unit No.	Title	Marks
Unit I	Solid State	03
Unit II	Solutions	04
Unit III	Electrochemistry	05
Unit IV	Chemical Kinetics	04
Unit V	Surface chemistry	03
Unit VI	General Principles and processes of Isolation Elements	02
Unit VII	p-Block Elements	06
Unit VIII	d- and f-Block Elements	05
Unit IX	Coordination Compounds	03
Unit X	Haloalkanes and Haloarenes	04
Unit XI	Alcohols, Phenols and Ethers	04
Unit XII	Aldehydes, Ketones and Carboxylic acids	05
Unit XIII	Organic Compounds containing Nitrogen	04
Unit XIV	Biomolecules	03
Unit XV	Polymers	03
Unit XVI	Chemistry in Everyday life	02
	<b>Total</b>	<b>60</b>

**Unit I: Solid State**

Classification of Solids based on different binding forces: molecular, ionic covalent and metallic solids, amorphous and crystalline solids (elementary idea), unit cell in two dimensional and three dimensional lattices, calculation of density of unit cell, packing in solids, voids, number of atoms per unit cell in a cubic unit cell, point defects, electrical and magnetic properties.



## **Unit II: Solutions**

Types of solutions, expression of concentration of solutions of solids in liquids, solubility of gases in liquids, solid solutions, colligative properties-relative lowering of vapour pressure, elevation of B.P. depression of freezing point, osmotic pressure, determination of molecular masses using colligative properties, abnormal molecular mass.

## **Unit III: Electrochemistry**

Redox reactions, conductance in electrolytic solutions, specific and molar conductivity variations of conductivity with concentration, Kohlrausch's Law, electrolysis and laws of electrolysis (elementary idea), dry cell. Electrolytic cells and Galvanic cells; lead accumulator, EMF of a cell standard electrode potential, Nernst equation and its application to chemical cells, fuel cells; corrosion.

## **Unit IV: Chemical Kinetics**

Rate of a reaction (average and instantaneous), factors affecting rates of reaction; concentration, temperature, catalyst; order and molecularity of a reaction; rate law and specific rate constant, integrated rate equations and half life (only for zero and first order reactions); concept of collision theory (elementary idea, no mathematical treatment)

## **Unit V: Surface Chemistry**

Adsorption- physisorption and chemisorptions factors affecting adsorption of gases of solids; catalysis : homogenous and heterogeneous activity and selectivity : enzyme catalysis; colloidal state : distinction between true solutions colloids and suspensions; lyophilic, lyophobic multimolecular, and macromolecular colloids; properties of colloids; Tyndall effect, Brownian movement, electrophoresis, coagulation; emulsion- types of emulsions.

## **Unit VI: General Principles and Processes of Isolation of Elements**

Principles and methods of extraction- concentration, oxidation, reduction, electrolytic method and refining; occurrence and principles of extraction of aluminum, copper, zinc and Iron.

## **Unit VII: p-Block Elements**

**Group 15 Elements:** General introduction, electronic configuration, occurrence oxidation states, trends in physical and chemical properties; nitrogen- preparation, properties and uses : compounds of nitrogen; preparation, properties of ammonia and nitric acid, oxides of nitrogen (structure only); Phosphorous-allotropic forms : compounds of phosphorous: preparation and properties of phosphine, halides ( $\text{PCl}_3$ ,  $\text{PCl}_5$ ) and oxoacids (elementary idea only)

**Group 16 Elements:** General introduction, electronic configuration, oxidation states, occurrence, trends in physical and chemical properties; dioxygen: preparation, properties and uses; simple oxides; Ozone. Sulphur-allotropic forms; compounds of sulphur : preparation, properties and uses of sulphur dioxide: sulphuric acid: industrial process of manufacture, properties and uses, oxoacids of sulphur (structures only).

**Group 17 Elements:** General introduction, electronic configuration, oxidation states, occurrence, trends in physical and chemical properties; compounds of halogens : Preparation, properties and uses of chlorine and hydrochloric acid, inter halogen compounds, oxoacids of halogens (structure only)

**Group 18 Elements:** General introduction, electronic configuration. Occurrence, trends in physical and chemical properties, uses.

#### **Unit VIII: d and f-Block Elements**

General introduction, electronic configuration, occurrence and characteristics of transition metals, general trends in properties of the first row transition metals – metallic character, ionization enthalpy, oxidation. States, ionic radii, colour catalytic property, magnetic properties, interstitial compounds, alloy formation. Preparation and properties of  $K_2Cr_2O_7$  and  $KMnO_4$ .

**Lanthanoids-** Electronic configuration, oxidation states, chemical reactivity and Lanthanoid contraction.

**Actinoids-** Electronic configuration, oxidation states.

#### **Unit IX: Coordination Compounds**

Coordination Compounds – introduction, ligands and coordination number, colour, magnetic properties and shapes, IUPAC nomenclature of mononuclear coordination compounds. Bonding; isomerism, importance of coordination compounds (in qualitative analysis, extraction of metals and biological system).

#### **Unit X: Haloalkanes and Haloarenes**

##### **Haloalkanes:**

Nomenclature, nature of C-X bond, physical and chemical properties, mechanism of substitution reactions.

##### **Haloarenes:**

Nature of C-X bond, substitution reactions (directive influence of halogen for monosubstituted compounds only)

Uses and environment effects of –dichloromethane, trichloromethane, tetrachloromethane, iodoform, freons, DDT.

### Unit XI: Alcohols, Phenols and Ethers

**Alcohols:** Nomenclature, methods of preparation, physical and chemical properties (of primary alcohols only); identification of primary, secondary and tertiary alcohols; mechanism of dehydration, uses, some important compounds-methanol and ethanol.

**Phenols:** Nomenclature, methods of preparation, physical and chemical properties, acidic nature of phenol, electrophilic substitution reactions, uses of phenols.

**Ethers:** Nomenclature, methods of preparation, physical and chemical properties, uses.

### Unit XII Aldehydes, Ketones and Carboxylic Acids

**Aldehydes and Ketones:** Nomenclature, nature of carbonyl group, methods of preparation, physical and chemical properties and mechanism of nucleophilic addition, reactivity of alpha hydrogen in aldehydes; uses.

**Carboxylic Acids:** Nomenclature, acidic nature, methods of preparation, physical and chemical properties; uses.

### Unit XIII: Organic Compounds containing Nitrogen

**Animes:** Nomenclature, classification, structure, methods of preparation, Physical and chemical properties, uses, identification of primary, secondary and tertiary amines.

**Cyanides and Isocyanides:** Will be mentioned at relevant places in context.

**Diazonium Salts:** Preparation, chemical reactions and importance in synthetic organic chemistry.

### Unit XIV: Biomolecules

**Carbohydrates:** Classification, (aldoses and ketoses) monosaccharides, (glucose and fructose), oligosaccharides (sucrose, lactose, maltose), polysaccharides (starch, cellulose, glycogen); importance.

**Proteins:** Elementary idea of  $\alpha$ -amino acids: peptide bond, polypeptides, proteins, primary structure, secondary structure, tertiary structures and quaternary structure (qualitative idea only), denaturation of proteins: enzymes.

**Vitamins:** Classification and functions

**Nucleic Acids:** DNA & RNA.

## Unit XV: Polymers

Classification: natural and synthetic, methods of polymerization (addition and condensation), copolymerization. Some important polymers: natural and synthetic like polythene, nylon, polyesters, Bakelite, rubber.

## Unit XVI: Chemistry in Everyday life

- 1. Chemicals in medicines:** analgesics, tranquilizers, antiseptics, disinfectants, antimicrobials, antifertility drugs, antibiotics, antacids, antihistamines.
- 2. Chemicals in food:** preservatives, artificial sweetening agents.
- 3. Cleansing agents:** soaps and detergents, cleansing action.

### PRACTICAL

EVALUATION SCHEME FOR EXAMINATION	MARKS
Volumetric Analysis	08 Marks
Salt Analysis	06 Marks
Content Based Experiment	03 Marks
Class Record and Viva	04 Marks
Investigatory Project	04 Marks
<b>Total</b>	<b>25 Marks</b>

## PRACTICAL SYLLABUS

### A. Surface Chemistry

- Preparation of one lyophilic and one lyophobic sol.  
Lyophilic sol-Starch, egg albumin and gum.  
Lyophobic sol-aluminum hydroxide, ferric hydroxide, arsenious sulphide.
- Study of the role of emulsifying agent in stabilizing the emulsions of different oils.

### B. Chemical Kinetics

- Effect of concentration and temperature on the rate of reaction between sodium thiosulphate and hydrochloric acid.
- Study of reaction rates of any one of the following:**
  - Reaction of iodide ion and with hydrogen peroxide at room temperature using different concentration of iodide ions.
  - Reaction between potassium iodate,  $KIO_3$  and sodium sulphite :  $(Na_2SO_3)$  using starch solution as indicator (clock reaction).

### C. Thermochemistry

(a) Any one of the following experiments:

- (i) Enthalpy of dissolution of copper sulphate or potassium nitrate.
- (ii) Enthalpy of neutralization of strong acid (HCl) and strong base (NaOH)
- (iii) Determination of enthalpy change during interaction (Hydrogen bond formation) between acetone and chloroform.

### D. Electrochemistry

Variation of cell potential in  $\text{Zn}/\text{Zn}^{2+}||\text{Cu}^{2+}/\text{Cu}$  with change in concentration of electrolytes ( $\text{CuSO}_4$  or  $\text{ZnSO}_4$ ) at room temperature.

### E. Chromatography

- (i) Separation of pigments from extracts of leaves and flowers by pap chromatography and determination of  $R_f$  values.
- (ii) Separation of constituents present in an inorganic mixture containing cations only (constituents having wide difference in  $R_f$  values to be provided)

### F. Preparation of Inorganic Compounds

- (i) Preparation of double salt of ferrous ammonium sulphate or potash alum.
- (ii) Preparation of potassium ferric oxalate.

### G. Preparation of Organic Compounds

Preparation of any two of the following compounds

- (i) Acetanilide
- (ii) Di-benzal acetone
- (iii) p-Nitroacetanilide
- (iv) Aniline yellow or 2-Naphthol aniline dye.
- (v) Iodoform

### H. Test for the functional groups present in organic compounds:

Unsaturation, alcoholic, phenolic, aldehydic, ketonic, carboxylic and amino (primary groups)

- I. Study of Carbohydrates, fats and proteins in pure form and detection of their presence in given food stuffs.

J. Determination of concentration/molarity of  $\text{KMnO}_4$  solution by titrating it against a standard solution of :

- (i) Oxalic acid
- (ii) Ferrous ammonium sulphate.

(Students will be required to prepare standard solutions by weighing themselves)

### K. Qualitative analysis

- Determination of one cation and one anion in a given salt

**Cations-**  $\text{Pb}^{2+}$ ,  $\text{Cu}^{2+}$ ,  $\text{As}^{3+}$ ,  $\text{Al}^{3+}$ ,  $\text{Fe}^{3+}$ ,  $\text{Mn}^{2+}$ ,  $\text{Zn}^{2+}$ ,  $\text{Co}^{2+}$ ,  $\text{Ni}^{2+}$ ,  $\text{Ca}^{2+}$ ,  $\text{Sr}^{2+}$ ,  $\text{Ba}^{2+}$ ,  $\text{Mg}^{2+}$ ,  $\text{NH}_4^+$

**Anions-**  $\text{CO}_3^{2-}$ ,  $\text{S}^{2-}$ ,  $\text{SO}_3^{2-}$ ,  $\text{SO}_4^{2-}$ ,  $\text{NO}_2^-$ ,  $\text{NO}_3^-$ ,  $\text{Cl}^-$ ,  $\text{Br}^-$ ,  $\text{I}^-$ ,  $\text{PO}_4^{3-}$ ,  $\text{C}_2\text{O}_4^{2-}$ ,  $\text{CH}_3\text{COO}^-$

(Note Insoluble salts excluded)

### PROJECT:

Scientific investigations involving laboratory testing and collecting information from other sources.

#### A Few suggested Projects

Study of presence of oxalate ions in guava fruit at different stages of ripening.

Study of quantity of casein present in different samples of milk.

Preparation of soybean milk and its comparison with the natural milk with respect to curd formation, effect of temperature, etc.

Study of the effect of potassium bisulphate as food preservative under various conditions (temperature, concentration, time etc.)

Study of digestion of starch by salivary amylase and, effect of PH and temperature on it.

Comparative study of the rate of fermentation of following materials; wheat flour, gram flour, Potato juice, carrot juice etc.

Extraction of essential oils present in Saunf (anised), Ajwain (carum), Illaichi (cardomam).

Study of common food adulterants in fat, oil, butter, sugar, turmeric powder, chilli powder and pepper.

**Note: Any other investigatory project, which involves about 10 period of work, can be chosen with the approval of the teacher.**

#### BOOKS RECOMMENDED:

Chemistry Part-I

Chemistry Part-II

Published by NCERT, New Delhi

## 19.BIOLOGY

The present syllabus reinforces the ideas introduced in the lower classes while the students learn new concepts besides getting an exposure to contemporary areas of the subject. The syllabus also aims at emphasizing the underlying principles that are common to both animals and plants as well as highlighting the relationship of biology with other areas of knowledge. The format of the syllabus allows a simple, clear, consequential flow of concepts without any jarring jumps. The syllabus also stresses the connection of the study of Biology to real life problems, use of biological discoveries/innovations in everyday life-in environment, nature, medicine, health and agriculture. The updated syllabus also focuses on reducing the curriculum load while ensuring that ample opportunities and scope for learning and appreciating basic concepts of the subject continues to be available within its framework.

The prescribed syllabus is expected to

- Promote understanding of basic principles of biology
- Learning of emerging knowledge and its relevance to individual and society.
- Encourage rational/specific attitude to issues related to population, environment and development.
- Enhance awareness about environmental issues and problems and the appropriate solutions.
- Create awareness amongst the learners about variations amongst the living and developing respect for the diversities and to appreciate that the most complex biological phenomenon are also built on essentially simple processes.

It is expected that the students would get an exposure to various branches of Biology in the syllabus in a more contextual and friendly manner as they study its various units.

<b>One Paper</b>	<b>Time: 3 Hours</b>	<b>60 Marks</b>
<b>Unit</b>		<b>Marks</b>
1. Sexual reproduction		11
2. Genetics and evolution		17
3. Biology and human Welfare		10
4. Biotechnology and its applications		10
5. Ecology and environment		12
<b>Total</b>		<b>60</b>

## **I. Sexual Reproduction**

Pollination and Fertilization in Flowering plants.

Development of seeds and fruits.

Human reproduction: reproductive system in male and female, menstrual cycle.

Production of gametes, fertilization, implantation, embryo development, pregnancy and parturition.

## **II. Genetics and evolution**

Mendelian inheritance.

Chromosome theory of inheritance, deviations from Mendelian ratio (gene interaction-incomplete dominance, co-dominance, complementary genes, multiple alleles).

Sex determination in human beings : XX,XY

Linkage and crossing over.

Inheritance pattern of haemophilia and blood groups in human beings.

DNA: replication, transcription, translations.

Gene expression and regulation.

Genome and human genome Project.

DNA fingerprinting.

Evolution: Theories and evidences.

## **III. Biology and Human Welfare**

Animal Husbandry.

Basic concepts of immunology, Vaccines.

Pathogens, Parasites

Plant breeding, tissue culture, food production.

Microbes in household food processing, industrial production, sewage treatment and ENE generation.

Cancer and AIDS.

Adolescence and drug/alcohol abuse.

## **IV. Biotechnology and ITS Applications**

Recombinant DNA technology.

Applications in Health, Agriculture and Industry

Genetically modified (GM) organisms; biosafety issues.

Insulin and Bt cotton.

## **V. Ecology & Environment**

Ecosystem : components, types and energy flow.



Species, population and community.

Ecological adaptations.

Centers of diversity and conservation of biodiversity National Parks and sanctuaries,  
Environmental issues.

### **PRACTICALS**

<b>Time: 3 Hours</b>	<b>25 Marks</b>
1. Two experiments	3+3=6
2. Slide preparation	4
3. Spotting	6
4. Investigatory project and viva based on the project	5
5. Record and Viva based on the experiment	4
<b>Total</b>	<b>25</b>

### **LIST OF EXPERIMENTS**

1. Study pollen germination on a slide.
2. Collect and study soil from different sites and study them for texture and moisture content.
3. Study the pH and Water holding capacity of soil. Correlate with the kinds of plants found in them.
4. Collect water from different water bodies around you and study them for pH clarity and presence of any living organisms.
5. Study the presence of suspended particulate matter in air at the two widely different sites.
6. Study of plant population density by quadrat method.
7. Study of plant population frequency by quadrat method.

### **STUDY/OBSERVATION OF THE FOLLOWING (SPOTTING)**

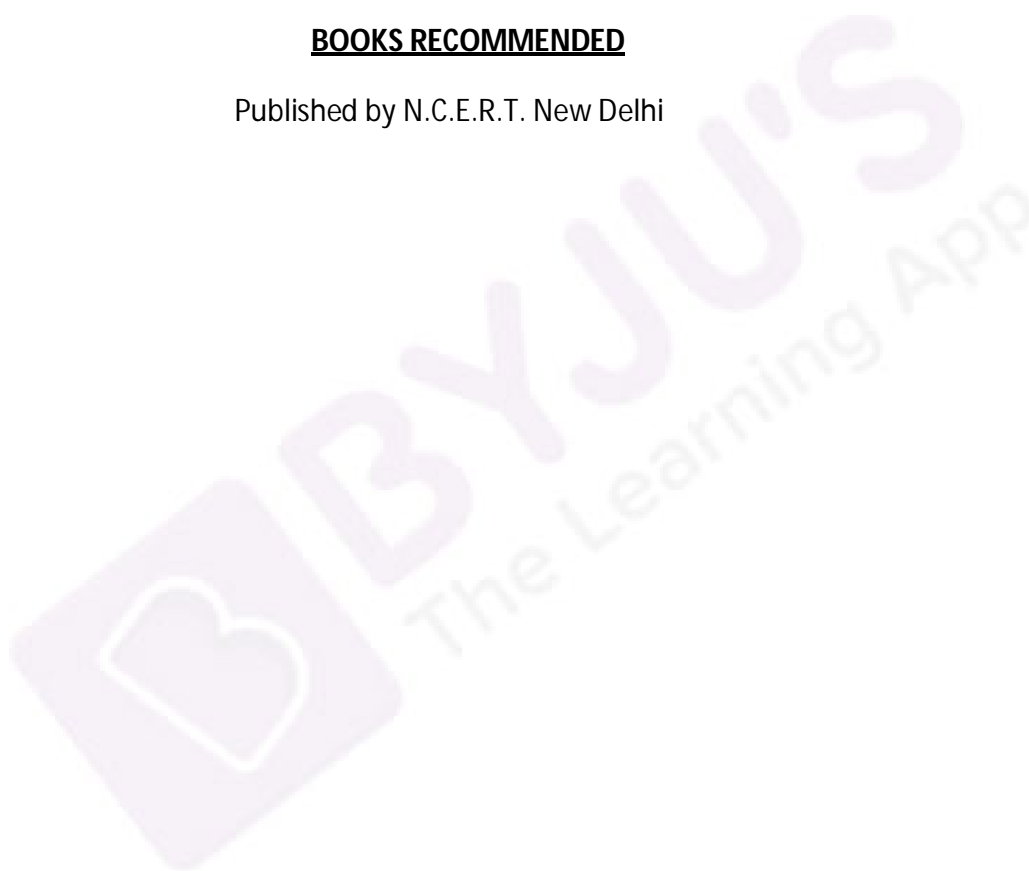
1. Study of flowers adapted to pollination by different agencies (weed, insect)
2. Study of pollen germination on a slide.
3. Study and identify stages of gamete development i.e. t.s. testis and t.s. ovary through permanent slide.
4. Study meiosis in onion bud cell or grass hopper testis through permanent slide.
5. Study of t.s. of blastula through permanent slide.
6. Study Mendelian inheritance using seeds of different colour/size of any plant.
7. Study prepared prediqree charts of genetic traits such as rolling of tongue, blood groups, widow's peak, colour blindness.

8. Exercise on controlled pollination-emasculatation, tagging and bagging.
9. To identify common diseases causing organism like Ascaris, Antamoeba, Plasmodium, ringworm. Comment of symptoms of diseases that they cause through permanent slides or specimens.
10. Study plants and animals found in xerophytic condition. Comment upon their adaptation/ecosystem.
11. Study plants and animals found in aquatic conditions. Comment upon their adaptation/ecosystem.
12. Study analogous and homologous organs in various plants and animals.

### **BOOKS RECOMMENDED**

Biology

Published by N.C.E.R.T. New Delhi



## 20.ACCOUNTANCY

### RATIONAL

The Course in Accountancy is introduced at +2 stage of Senior Secondary education, as formal commerce education is provided after first ten years of schooling. With the fast changing economic scenario and business environment in a state of continuous flux, elementary business education along with accountancy as the language of business and as a source of financial information has carved out a place for itself at the Senior Secondary stage. Its syllabus content should give students a firm foundation in basic accounting principles and methodology and also acquaint them with the changes taking place in the presentation and analysis of accounting information, keeping view the development of accounting standards and use of computers.

Against this background, the course puts emphasis on developing basic understanding about the nature and purpose of the accounting information and its use in the conduct of business operations. This would help to develop among students' logical reasoning, careful analysis and considered judgment.

Accounting as an information system aids in providing financial information. The emphasis at Class XI is placed on basic concepts and process of accounting leading to the preparation of accounts for a sole proprietorship firm. Computerized accounting is becoming more and more popular with increasing awareness about use of computers in business. Keeping this in view, the students are exposed compulsorily to the basic knowledge about computers and its use in accounting in the same year.

In class XII, Accounting for Not for Profit Organizations and Partnership Firms are to be taught as a compulsory part. Students will also be given an opportunity to understand further about computerized Accounting System, as an optional course to Analysis of Financial Statements.

### OBJECTIVES

- To familiarize the students with accounting as an information system;
- To acquaint the students with basic concepts of accounting and accounting standards;
- To develop the skill of using accounting equation in processing business transactions;
- To develop an understanding about recording of business transactions and preparation of financial statements;
- To enable the students with accounting for reconstitution of partnership firms;
- To enable the students of understand and analysis the financial statements; and
- To familiarize students with the fundamentals of computerized system of accounting.

One Paper	3 Hours	65 Marks
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UNITS	MARKS
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**Part A: ACCOUNTING FOR NOT FOR PROFIT ORGANISATIONS PARTNERSHIP FIRMS AND COMPANIES**

1.	Accounting for not for profit organizations	8
2.	Accounting for Partnership Firms	4
3.	Reconstitution of Partnership	17
4.	Accounting for share Capital and Debenture	21
	<b>Total</b>	<b>50</b>

**PART B: FINANCIAL STATEMENT ANALYSIS**

5.	Analysis of financial statements	9
6.	Cash Flow Statement	6
	<b>One Paper</b>	<b>15</b>
	Project Work	20
	<b>Total</b>	<b>35</b>

**PART-A:**

**ACCOUNTING FOR NOT-FOR-PROFIT ORGANISATIONS, PARTNERSHIP FIRMS AND COMPANIES**

**Unit 1 : Accounting for Not-for-Profit Organizations**

- Not for profit organisation: Meaning and examples.
- Receipts and payments: Meaning and concept of fund based accounting.
- Preparation of Income and Expenditure Account and Balance sheet from Receipt and Payment Account with additional information.

**Unit 2 : Accounting for Partnership Firms**

- Nature of Partnership firm : Partnership Deed-meaning, importance.
- Final Accounts of Partnership : Fixed vs fluctuating Capital, Division of Profit among partners, Profit and loss Appropriation Account.

**Unit 3 : Reconstitution of Partnership**

Changes in Profit Sharing Ratio among the existing partners-Sacrificing Ratio and Gaining Ratio.

- Accounting for Revaluation of Assets and Liabilities and distribution of reserves and Accumulated Profits.

- **Goods Will** : Nature, Factors affecting and methods of valuation: Average profit, Super Profit and Capitalisation methods.
- **Admission of a Partner:** Effect of Admission of Partner, change in Profit sharing Ratio, Accounting Treatment for Goodwill, Revaluation of Assets and liabilities, reserves (Accumulated Profits) and adjustment of Capitals.
- **Retirement/Death of a partner:** Changer in Profit sharing ratio, accounting treatment of goodwill, Revaluation of Assets and Liabilities, adjustment of accumulated Profits (Reserves) and capitals.

#### **Unit 4 : Accounting for share Capital and Debenture**

- Share Capital : Meaning, Nature and Types.
- Accounting for share capital : Issue and Allotment of Equity and Preference shares: Private placement of shares; over subscription and under subscription; issue at par, premium and at discount; calls in advance, calls in arrears, issue of shares for consideration other than cash.
- Forfeiture of shares: accounting treatment, re-issue of forfeited shares.
- Presentation of share Capital and Debenture in company's Balance sheet.
- Issue of debenture-at par and premium; issue of debenture for consideration other than cash.
- Redemption of debenture.
- Out of Proceeds of fresh issue, accumulated profits and sinking fund.

#### **PART-B; FINANCIAL STATEMENT ANALYSIS**

##### **Unit 5: Analysis of Financial Statements**

Financial statements of a company: Preparation of simple balance sheet of a company in the prescribed form with major headings only.

**Financial Statement Analysis:** meaning, significance and purpose, limitations,

Tools for Financial Statement Analysis: Comparative Statements, Common Size Statements.

Accounting Ratios : Meaning and Objectives, types of ratios:

Liquidity Ratios : Current Ratio, liquidity ratio

Solvency Ratios: Debt of Equity, Total Assets of Debt, proprietary Ratio

Activity Ratios: Inventory Turnover, Debtors Turnover, Payables Turnover, Working Capital Turnover, Fixed Assets Turnover, Current Assets Turnover.

Profitability Ratio: Gross Profit, Operating Ratio, Net Profit Ratio, Return on Investment, Earning Per share, Dividend per share, Profit Earning Ratio.

### Unit 6: Cash Flow Statement

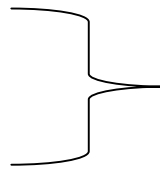
- **Cash Flow Statement:** Meaning and objectives, Preparation, adjustments related to depreciation, dividend and tax, sale and purchase of non-current assets (as per revised standard issued by ICAI)

### Unit 7: Project Work in Accounting

#### **BOOKS RECOMMENDED:**

Yk[kk"kkL= Hkkx A dsfy, ,d ikB; i[rd  
ys[kk"kkL= Hkkx B dsfy, ,d ikB; i[rd

Accountancy book for Part A  
Accountancy book for Part B



Published by N.C.E.R.T. New Delhi



## 21. BUSINESS STUDIES

### RATIONABLE

The courses in Business Studies and Accountancy are introduced at +2 stage of Higher Secondary Education as formal commerce education is provided after first ten years of schooling. Therefore, it becomes necessary that instructions in this subject is given in such a manner that students have a good understanding of the principles and practices bearing in business (trade and industry) as well as their relationship with the society.

Business is a dynamic process that brings together technology, natural resources and human initiative in a constantly changing global environment. To understand the framework in which a business operates, a detailed study of the organization and management of business processes and its interaction with the environment of business processes and its interaction with the environment is required. Globalization has changed the way firms transact their business. Information Technology is becoming a part of business operations in more and more organizations. Computerized systems are fast replacing other systems. E-business and other related concepts are picking up fast which need to be emphasized in the curriculum.

The course in Business Studies will prepare students to analysis, manage, evaluate and respond to changes which affect business. It provides a way of looking at and interacting with the business environment. It recognizes the fact that business influences and is influenced by social, political, legal and economic forces. It allows students to appreciate that business is an integral component of society and develops an understanding of many social and ethical issues.

Therefore, to acquire basic knowledge of the business world, a course in Business Studies would be useful. It also informs students of a range of study and work options and bridges the gap between school and work.

### OBJECTIVES

- To develop in students an understanding of the processes of business and its environment;
- To acquaint students with the dynamic nature and inter-dependent aspects of business;
- To develop an interest in the theory and practice of business, trade and industry;
- To familiarize candidates with theoretical foundations of organizing, managing and handling operations of business firm;
- To help students appreciate the economic and social significance of business activity and the social costs and benefits arising there from;

- To acquaint students with the practice of managing the operations and resources of business;
- To prepare students to function more effectively and responsibly as consumers, employers, employees and citizens;
- To help students in making the transition from school to the world of work including self-employment;
- To develop in students a business attitude and skills to be precise and articulate.

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<b>One Paper</b>	<b>3 Hours</b>	<b>85 Marks</b>
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### **UNIT WISE WEIGHTAGE**

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<b>UNITS</b>	<b>MARKS</b>
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#### **PART A: PRINCIPLES AND FUNCTIONS OF MANAGEMENT**

1.	Nature and Significance of Management	06
2.	Principles of Management	06
3.	Business Environment	-
4.	Planning	06
5.	Organizing	08
6.	Staffing	08
7.	Directing	10
8.	Controlling	06
	<b>Total</b>	<b>50</b>

#### **PART B: Business Finance and Marketing**

9.	Financial Management	10
10.	Financial Markets	08
11.	Marketing	12
12.	Consumer Protecting	05
	<b>Total</b>	<b>35</b>

#### **PART A: PRINCIPLE AND FUNCTIONS OF MANAGEMENT**

##### **Unit 1: Nature and Significance of Management**

- Management-concept, objectives, importance.
- Nature of management; Management as Science, Art, Profession.
- Levels of management-top, middle, supervisory (first level)
- Management function-planning, organizing, staffing, directing and controlling
- Coordination-nature and importance.



## **Unit 2: Principles of Management**

- Principles of Management-meaning, nature and significance
- Fayol's Principles of management.
- Taylor's Scientific Management-Principles and techniques.

## **Unit 3: Business Environment**

- Business Environment-meaning, nature and importance.
- Dimensions of Business Environment-Economic, Social, Technological, political and Legal.
- Economic Environment in India; Impact of Government policy changes on business and industry with special reference to adoption of the policies of liberalization, privatization and globalization.

## **Unit 4: Planning**

- Meaning features, importance, limitations
- Planning process.
- Types of Plans- Objectives, Strategy, Policy, Procedure, Method, Rule, Budget, Program.

## **Unit 5: Organizing**

- Meaning and importance.
- Steps in the process of organizing.
- Structure of organization-functional and divisional.
- Formal and informal organization.
- Delegation: meaning, elements and importance.
- Decentralization: meaning and importance.
- Difference between delegation and decentralization.

## **Unit 6: Staffing**

- Meaning, need and importance of staffing.
- Staffing as a part of Human Resource Management.
- Steps in staffing process.
- Recruitment-meaning and sources.
- Selection-meaning and process.
- Training and Development-meaning and need. Methods of training: job rotation, apprenticeship, vestibule and internship.

### Unit 7: Directing

- Meaning, importance and principles.
- Elements of Directing
  - Supervision-meanings and importance
  - Motivation-meaning and importance, Maslow's hierarchy of needs; Financial and non-financial incentives.
  - Leadership-meaning, importance: qualities of a good leader.
  - Communication-meaning and importance, formal and informal communication; barriers to effective communication.

### Unit 8: Controlling

- Meaning and importance
- Relationship between planning and controlling
- Steps in the process of control
- Techniques of controlling: budgetary control.

### Part-B: Business Finance and Marketing

#### Unit 9: Financial Management

- Meaning, role, objectives of financial management
- Financial planning- meaning and importance
- Capital structure- meaning and factors
- Fixed and working Capital-meanings and factors affecting its requirements.

#### Unit 10: Financial Markets

- **Concept of Financial Market:** Money Market-nature, instruments
- **Capital market:** nature and types-primary and secondary market.
- Distinction between capital market and money market.
- Stock Exchange-meaning, functions, NSEI, OCTEL, Trading Procedure.
- Securities and Exchange Board of India (SEBI)-Objectives, Functions.

#### Unit 11: Marketing

- Marketing- meaning, functions and role
- Distinction between marketing and selling
- Marketing mix-concept and elements.
  - Product-nature, classification, branding, labelling and packaging

- **Physical distribution:** meaning, role; Channels of distribution-meaning, types, factors determining choice of channels.
- Promotion-meaning and role, promotion mix, Role of Advertising and personal selling; objections to Advertising.
- **Price:** factors influencing pricing

### **Unit 12: Consumer Protection**

- Importance of consumer protection
- Consumer rights
- Consumer responsibilities
- Ways and means of consumer protection-Consumer awareness and legal redressed with special reference to Consumer Protection Act.
- Role of consumer organizations and NGOs.

### **BOOKS RECOMMENDED:**

0; Okl kf; d v/; ; u Hkkx&1 vks Hkkx&2

Business Studies Part-I and Part-II

Published by N.C.E.R.T. New Delhi

## 22.URDU (CORE)

One Paper 3 Hours 85 Marks

**SECTION-A** MARKS : 50

**1. Reading Skills :** 10

- (i) Comprehension of an unseen passage (factual) of about 150 words followed by five questions.

**2. Writing Skills :** 40

- (i) Essay 12  
(ii) Letter writing (Personal, business and official connected with daily life and application writing) 08  
(iii) Precis Writing 08  
(iv) Sentence making with the help of idiomatic phrases 08  
(v) Advertisements 04

**SECTION-B :** MARKS : 35

**A. Book 1** 18

- Jangal ki Ek Rat  
(i) One out of two extracts from the prescribed book followed by short answer type questions for comprehension. 06  
(ii) One essay type question (100 words) on content/theme of the prescribed book. 04  
(iii) Four short answer type questions from the prescribed book 08

**(B) Book - II**

**Heroine Ki Talash**

- (i) One Essay type questions (100 words) on theme/content 09  
(ii) Four short answer type questions on characters/ events/ evaluative nature 08

**Prescribed Text Book :**

1. Jangal Ki Ek Rat by Rehan Ahmed Abbasi published by Maktaba Payam-e-Ta'leem, N. Delhi.
2. Heroine Ki Talash by prof. M. Mujeeb published by Maktaba Jamia , New Delhi.

**Recommended Book :**

1. Urdu Qawaid, published by the NCERT , New Delhi.

## 23. PHILOSOPHY

### OBJECTIVES

Philosophy, a theoretical enterprise with practical applications, aims at understanding the nature and meaning of life and reality. It is considered to be the mother of all branches of knowledge. The nature of Philosophy is that in it no answer is left unquestioned. It attempts to understand and explain the fundamental axioms and presuppositions which are taken for granted by all branches of knowledge. The +2 syllabus is designed to give the students a glimpse of the nature of problems and the way they are dealt within its various branches-Logic, Ethics, Classical Indian Philosophy and Western Philosophy.

### (THEORY)

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<b>One Theory</b>	<b>85 Marks</b>
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### UNIT WISE WEIGHTAGE

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UNITS	MARKS
<b>A. INDIAN PHILOSOPHY</b>	<b>45</b>
1. Nature and Schools of Indian Philosophy: some basic Issues	9
2. Philosophy of the Bhagwad Gita; Karma Yoga	9
3. Buddhism, Jainism	9
4. Nyaya, Vaisesika and Samkhya-yoga	9
5. Advaita Vedanta	9
<b>B. WESTERN PHILOSOPHY</b>	<b>40</b>
6. Knowledge and truth	8
7. The causal Principle	8
8. Nature of Reality	8
9. Realism and Idealism	8
<b>C. APPLIED PHILOSOPHY</b>	
10. Environmental Ethics, Professional Ethics and Philosophy of Education	8

### A. INDIAN PHILOSOPHY

**Unit 1** Nature and Schools of Indian Philosophy; some basic issues.  
Rta, Karma, Four Purusarthas: Dharma, Artha, Kama, Moksa

**Unit 2** Philosophy of the Bhagavad Gita; Karma Yoga (Anasakta Karma), Svadharama, Lokasamgraha

### **Unit 3 Buddhism, Jainism**

Four noble truths and eight-fold path : theory of dependant origination, Anekantavada and syadvada

### **Unit 4 Nyaya, Vaisesika and Samkhya-Yoga**

Nyaya theory of Pramanas. Yoga- The Eight –fold Practice Samkhya Theory of Three Gumas, Vaisesika Theory of Padarthas

### **Unit 5 Advaita Vedanta**

The nature Atman, Brahman and the world.

## **B. WESTERN PHILOSOPHY**

### **Unit 6 Knowledge and truth**

Rationalism, Empiricism and Kant’s Critical Philosophy

### **Unit 7 The causal Principle**

#### **Nature of Cause**

Aristotle’s theory of four fold causation cause-effect relationship: entailment, regularity, succession.

### **Unit 8 Nature of Reality**

#### **Proofs for the existence of God:**

Ontological, Teleological and Cosmological arguments.

### **Unit 9 Realism and Idealism**

Mind Body Problem

## **C. APPLIED PHILOSOPHY**

### **Unit10 Environment Ethics and Professional Ethics**

- (a) Study of Physical, mental and spiritual environments
- (b) Medical and Business Ethics.
- (c) Philosophy of Education

## 24.FINE ARTS

A Student may offer any one of the following courses:-

(a) Painting

Or

(b) Graphics

Or

(c) Sculpture

Or

(d) Applied Arts – Commercial Arts

The following art terminologies for all the four subjects are prescribed only for reference and general enrichment.

1. Elements of Composition: Point line form, colour, tone texture and space.
2. Principles of Composition: Unity, Harmony, Balance, Rhythm, Emphasis and Proportion, Abstraction and Stylization.
3. Drawing and Painting: Terminologies, Foreshortening, perspective, eye-level, fixed point of view, Vanishing point, ration proportion, sketching, proportion sketching, drawing, light and shade, painting still-life, land-landscape, anatomy, vertical, horizontal, two and three dimensional, transparent and opaque.  
Materials : Paper, Pencil, water, acrylic colours, tempera colours, poster colours, pasted colours, waterproof ink, canvas, hard-board
4. Media of Composition: Collage, Mosaic, Painting mural, fresco, batik tye and dye
5. Sculpture: Relief and round sculpture, modelling with clay, terra-cotta, carving in wood and stone bronze casting.
6. Graphics: Linocut, relief printing, etching, lithography, Silk screen printing letter press and offset printing.
7. Applied Art: Book cover design and illustration, cartooning, poster, advertisements for newspaper and magazine etc. Photography, computer graphic.

### A. PAINTING

#### INTRODUCTION

The course in painting at senior secondary stage as an elective subject is aimed to develop aesthetic sense of the students through the understanding of various important well known aspects and modes of visual art expression in India's rich cultural heritage from the period of Indus valley to the present time. It also encompasses practical exercises in drawing

and painting to develop their mental faculties of observation, imagination, creation and physical skills required for its expressions.

## OBJECTIVES

### (A) THEORY (HISTORY OF INDIAN ART)

The objective of including the history of Indian Art of the students is to familiarize them with the various styles and modes of art expressions from different parts of India. This would enrich their vision and enable them to appreciate and develop an aesthetic sensibility to enjoy the beauty of nature and life. The students will also have an opportunity to observe and the rise of an altogether new style. The students should be made aware of art as a human experience. The teachers should be able to expose them to the wide range of artistic impressions, the media and the tools used. The history of Indian Art is a long one. Hence the students would be acquainted with brief glimpses of the development of Indian Visual Art as are required for concept formation. Examples included in the course of study are selected because of their aesthetic qualities and are intended purely as guidelines.

### (B) PRACTICALS

The purpose of introducing practical exercises: In Painting is to help and enable the students.

- To develop skill of using drawing and painting material (surface, tools and equipments etc.) effectively.
- To sharpen their observation skills through study of common objects and various geometrical and non-geometrical forms found in life and nature.
- To develop their skills to draw and paint these observations:
- To develop an understanding of Painting-Composition (The use of the elements and the principles of painting-composition);
- To create the forms and the colour schemes in imagination with an ability to express them effectively in drawing and painting.
- To express the different feelings and moods of life the nature in lines, forms and colours.



## THEORY

One Theory Paper

Time: 1 Hours

25 Marks

### Unit wise Weight age:

Units

Marks

### **HISTORY OF INDIAN ART**

1. The Rajasthani and Pahari Schools of Miniature Painting. 09
2. The Mughal and Deccan Schools of Miniature Painting. 08
3. The Bengal School of Painting and the Modern Trends in Indian Art 08

**Unit 1:** The Rajasthani and Pahari Schools of Miniature Painting (16<sup>th</sup> Century A.D. To 19<sup>th</sup> Century A.D)

Introduction to the Indian Miniature Schools: Western-Indian, Pala, Rajasthani, Mughal, Central Indian, Deccan and Pahari.

#### **(A) The Rajasthan; Schools**

- (1) Original and Development
- (2) Schools- Mewar, Bundi, Jodhpur, Bikaner, Kishangarh and jaipur.
- (3) Main feature of the Rajasthani Schools.
- (4) Study of the following Rajasthani Paintings:

TITLE	PAINTER	SCHOOL
Maru-Ragni	Sahibdin	Mewar
Raja Aniruddha Singh Heera	Utkal Ram	Bundi
Chaugan Players	Dana	Jodhpu
Krishna on swing	Nuruddin	Bikaner
Radha (Bani-Thani)	Nihal Chand	Kishangarh
Bharat meets Rama at Chitrakut	Guman	Jaipur

#### **(B) The Pahari Schools:**

- (1) Origin and development
- (2) Schools-Basohli and Kangra
- (3) Main Feature of the Pahari Schools
- (4) Study of the following Pahari Paintings:

Title	Painter	Schools
Krishna with Gopis		Basohli
Raga Megha		Kangra

**Unit 2:** The Mughal and Decca Schools of Miniature painting (16<sup>th</sup> Century AD to 19<sup>th</sup> Century A.D.)

**(A) The Mughal School**

- (1) Original and development
- (2) Main feature of the Mughal School
- (3) Study of the following Mughal Paintings:

Title	Painter	School
Krishna lifting mount	Goverdhan	Miskin Akbar
Babur crossing the river sone	Jaganath	Akbar
Jahangir holding the	Abul Hassan	Jahangir
Picture of Madona		
Falcon on a bird rest	Ustad Mansoor	Jahangir
Kabir and Raidas	Ustad Faquirullah Khan	Shahjahan
Marriage Procession of	Haji Madni	Provincial
Dara Shikoh		Mughal (Oudh)

**(B) The Deccan School**

- (1) Origin and development
- (2) Main feature of the Deccan School
- (3) Study of the following Deccan Paintings:

Title	Painter	School
Raga Hindola	.....	Ahmednagar
Chand Bibi Playing Polo (Chaugan)		Gol Konda

**Unit 3:** The Bengal School and the Modern trends in Indian Art

**(A)** (1) (A) New Era in Indian art-an introduction

**(B) Study of the following painting.**

- (1) Rama Vanquishin the pride of the ocean-Raja Ravi Verma
- (2) Evaluation of the Indian National Flag (First-1906, Middle- 1921 and Final 1947 Stages): Study of the form and the colour Scheme.

**(B) (1) Introduction to the Bengal School of Painting**

- (i) Origin and development of the Bengal School.
- (ii) Main features of the Bengal School
- (2) Contribution of Indian artists in the struggle for National Freedom Movement.
- (3) Study of the following paintings of the Bengal School
  - (i) Journey's End-Rabinderanath Tagore
  - (ii) Parthasarathi- Nandlal Bose
  - (iii) Radhika-M. A. R. Chughtai

**(c) The Modern Trends in Indian Art**

## INTRODUCTION

### (1) Study of the following Paintings:

- (i) Magician-Gaganendranath Tagore
- (ii) Mother and Child-Jamini Roy
- (iii) Woman Face-Rabindranath Tagore
- (iv) Three Girls-Amrita Sher Gill

### (2) Study of the following pieces of Sculpture:

- (i) Triumph of Labour-D.P. Roychowdhury
- (ii) Santhal Family Ramkinker Vaj

### (3) Study of the following work of contemporary Indian Art

## A. PAINTINGS

- (i) Mother Teresa-M.F. Hussain.
- (ii) Birth of Poetry-K.K. Hebbar
- (iii) Gossip- N.S. Bendre
- (iv) Untitled- G.R. Santosh
- (v) Diagonal-Tyeb Mehta

## (4) Graphic Prints

- (i) Whirl Pool-Krishna Reddy
- (ii) Children-Somnath Hore
- (iii) Devi-Jyoti Bhatt
- (iv) Of Walls-Anupam Sud
- (v) Man, Women and Tree K. Laxman Goud

## (5) Sculptures

- (i) Standing Woman-Dhanraj Bhagat
- (ii) Cries Un-heard-Amar Nath Sehgal
- (iii) Ganesha-P.V. Jankiram
- (iv) Figures-Sankho Chaudhuri
- (v) Chaturmukhi Aekka Yada Giri Rao

**Note :** The names of artists and their art work as listed above are only suggestive and in no way exhaustive. Teachers and students should expand this according to their own resources. However, the questions will be set from the above mentioned art works only.

## PAINTING PRACTICAL

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One Paper

Time : 6 Hours

60 Marks

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## UNITWISE WEIGHTAGE

Units	MARKS
1. Nature and Object Study	22
2. Painting Composition	22
3. Sessional Work	16

### UNIT 1 :NATURE AND OBJECT STUDY

Studies on the basis of exercises done in class XI with two or three objects and drapery for background. Exercises in Pencil with light and shade and in full colour from a fixed point of view.

### UNIT 2 : PAINTING

Imaginative painting based on subjects from Life and or Nature in water and poster colours with colour values.

### UNIT 3 SESSIONAL WORK

- (a) Five selected Nature and object Study exercises in any media done during the session, including minimum of two still life exercises. **08 marks**
- (b) Two selected works of painting done by the candidate during the year  
**08 marks**

These selected works prepared during the courses by the candidate and certified by the school authorities as the work done in the school will be placed before the examiners for assessment.

**Note :** The time-table to be so framed as to allow the students to work continuously for minimum of two periods at a stretch.

## GUIDELINES FOR EVALUATION OF PRACTICAL

Marking Scheme :

### PART I : NATURE AND OBJECT STUDY

- |       |                            |    |                 |
|-------|----------------------------|----|-----------------|
| (i)   | Drawing (composition)      | 09 |                 |
| (ii)  | Treatment of media/colours | 09 | <b>22 marks</b> |
| (iii) | Overall impression         | 04 |                 |

## **PART - II : PAINTING (COMPOSITION)**

- |       |   |   |                 |
|-------|---|---|-----------------|
| (i)   | Compositional arrangement including emphasis on the subject | 9 |                 |
| (ii)  | Treatment of media colour                                   | 9 | <b>22 marks</b> |
| (iii) | Originality and overall impression                          | 4 |                 |

## **PART-III : SESSIONAL WORK**

- |      |  |   |                 |
|------|--|---|-----------------|
| (i)  | Five Selected Nature and object study exercises in any media including minimum of two still lives. | 8 |                 |
| (ii) | Two selected painting compositions Prepared on the basis of life and nature                        | 8 | <b>16 marks</b> |

**Note : Sessional-work will also be evaluated on the same pattern.**

## **FORMAT OF THE QUESTIONS :**

### **PART I : NATURE AND OBJECT STUDY**

Draw and Paint the still-life of a group of objects arranged on a drawing board before you, from a fixed point of view (given to you), on a drawing paper of half imperial size in pencil/colours. Your drawing should be proportionate to the size of the paper. The objects should be painted in realistic manner with proper light and shade and perspective etc. In this study the drawing-board is not to be included.

**Note :- A group of objects to be decided by the external and internal examiners jointly as per instructions. The objects for Nature study and object study are to be arranged before the candidates.**

### **PART II : PAINTING**

Make a painting-composition on anyone of the following five subjects in any medium (Water/Pastel, Tempera, Acrylic) of your choice on a drawing-paper of half imperial size either horizontally or vertically. Your composition should be original and effective. Weightage will be given to a well composed drawing, effective use of media, proper emphasis on the subject matter and utilization of full-space.

**Note :** Any five subjects for Painting Composition are to be decided by the external and internal examiners jointly as per instructions and are to mentioned here strictly just before the start of the examination for part II.

**3. (a) Instructions for the selections of the objects for Nature Study and object Drawing :**

**1. The examiners, are to select/decide two or these, suitable objects in such a way so that Natural and Geometrical forms may be covered in the group of objects :**

**(i)** Natural-forms-large size foilage and flowers, fruits, and vegetable etc.

**(ii)** Geometrical forms made of Wood/Plastic/Paper/Metal/Earthen etc. such as cube, cone, prism, cylinder and sphere.

**2.** Objects should be selected generally of large (suitable) size.

**3.** An object relating to nature, according to the season and location of the examination centre, must be including in the group of objects. The natural-objects should be purchased/arranged only on the day of the examination so that its freshness may be maintained.

**4.** Two draperies in different colours (one in dark and other in light tone) are also to be included for background and foreground. Keeping in view the colours and tones of the objects selected.

**(B) Instruction to decide the subjects for Painting-Composition :**

**1.** The examiners are to select/decide five subjects suitable for painting-Composition.

**2.** The subjects should be so designed that the candidates may get clear-cut ideas of the subjects and they can exercise their imagination freely, because it is not important what you do, but how you do it.

**3.** The examiners are free to select/decide the subjects, but these should be according to the standard of class XII and environment of the school/candidates.

Some identified areas of the subjects for Painting-Composition are given below, in which some more areas may also be added.

**(i)** Affairs of family friends and daily life.

**(ii)** Affairs of family Professional.

**(iii)** Games and sports activities.

**(iv)** Nature

**(v)** Fantasy

**(vi)** National, religious, cultural, historical and social events and celebrations.

**4. General Instructions to the examiners :**

**1.** Candidates should be given one hour break after first three hours.

2. Work of the candidates, for Parts I, II and III is to be evaluated on the spot jointly by the external and internal examiners.
3. Each work of Part I, II and III, after assessment is to be marked as examined and duly signed by the external and internal examiners jointly.

**SOME REFERENCE BOOKS SUGGESTED FOR TEACHERS :**

1. "Paint Still life" by Claretta White yet to be revised (Walter T. Foster Publication).
2. "Art of Drawing" Grumbacher Library Wook (Walter T. Foster Publication)
3. "Collage" by Dixi Hall (Walter T. Foster Publication).
4. "On Techniques" By Leon Frank (Walter T. Foster Publication).
5. "More Trees" by Fredrick Gardner (Walter T. Foster Publication).
6. "How to Draw and Paint Textures of Animals" By Walter J. Wilweding (Walter T. Foster Publication).
7. "How to Draw and Pain Animal Expressions" by Walter J. Wilweding (Walter T. Foster Publication).
8. "Art of the Pencil" by Borough Johnson (Sir ISAAC Pitman & Sons Ltd. New Delhi).
9. "Design for you" by Ethel Jane Beitler (John Wilary & Sons Ltd. New Delhi).
10. "Complete Books of Artist's Techniques by Dr. Kurt Herbers, (Thomas and Hudson, London).

## B. GRAPHICS

### INTRODUCTION

The Course in Graphics at Senior Secondary stage as an elective subject is aimed to develop aesthetic sense of the students through the understanding of various important, well known aspects and modes of Visual Art expression in India's rich cultural heritage from the period of Indus Valley to the present time. It encompasses also a wider range of practical exercises in making of Graphic prints for developing their mental faculties of observation, imagination creation and physical & technical skills.

### OBJECTIVES

#### (A) Theory (History of Indian Art)

**Note :- As the syllabus of Graphics (Theory) is the same as that of painting (Theory), its objectives are same.**

#### (B) Practicals.

The purpose of introducing practical exercises in Graphics is to help and enable the students to make simple compositions in monochrome and in colours through the various print-making techniques using methods and material specifically prescribed for adequate results. The students should be introduced to the subject by giving a short history of the print making techniques. They should be given exercises to inculcate respect for the tools and apparatus- used in the various processes including their maintenance and proper handling.

### THEORY

One Theory Paper

Time : 1 Hrs

25 Marks

### UNITWISE WEIGHTAGE

Units

Marks

### HISTORY OF INDIAN ART

- |    |  |    |
|----|--|----|
| 1. | The Rajasthan, Pahari School of Miniature Painting.                | 09 |
| 2. | The Mughal and Deccan School of Miniature Painting                 | 08 |
| 3. | The Bengal School of Painting and the Modern Trends in Indian Art. | 08 |

**Note :- The Syllabus of Graphics (Theory) is the same as that of painting (Theory) given earlier.**



**{PRACTICAL}**

One Paper

Time 6 Hrs.

60 Marks

**UNITWISE WEIGHTAGE**

<b>UNIT</b>	<b>MARKS</b>
1. Making of graphic-print through Serigraphy/Lithography/Etching and Engraving (Intaglio Process) techniques.	45
2. Sessional Work	15

**Unit 1 : The students in the class are expected to opt for anyone of the following media depending upon the facilities available in their schools**

**(a) SERIGRAPHY**

1. The history of stencils and silk screen.
2. Methods and materials.
3. The use and maintenance of the squeeze.
4. Sealing, registration for colour, work and preparation for printing.
5. Solvents for cleaning, use and characteristics of printing inks.
6. Mounting and finishing the print.

**OR**

**(b) LITHOGRAPHY**

1. **Introduction** : Short history and the methods and material used in producing lithographic prints.
2. The use and characteristics of the Litho stone/Zinc plates.
3. The use of Lithographic Chalks and ink (Tusche).
4. Preparing for printing and use of various chemicals inking and taking proofs.
5. Papers used in lithography and getting the final Print.
6. Finishing and mounting the point.

**OR**

**(c) Etching and Engraving (Intaglio Process)**

1. Introduction to intaglio technique with a short history, methods and materials, Etching press.
2. Preparing the plate and lying the ground (Resist) and Inking.
3. Characteristics of different types of grounds.
4. Characteristics and use of various acids.

5. Colour etching, use of stencils and marks.
6. Finishing and mounting the prints.

## UNIT 2 : SESSIONAL WORK

Three selected prints prepared during the course by the candidate and certified by the school authorities as works done in the school and to be placed before the external examiner for assessment.

**Note :** The time table to be so framed as to allow the students to work continuously for minimum of two periods at a stretch.

### **GUIDELINES FOR EVALUATION OF PRACTICAL**

#### 1. MARKING SCHEME :

##### PART I : GRAPHIC-COMPOSITION (PRINT MAKING)

(i)	Emphasis in the subject	8	} <b>45 Marks</b>
(ii)	Handling on the material and technique of Print-making	12	
(iii)	Composition and quality of Print	25	

##### PART II : SESSIONAL WORK

Three selected Prints 5 + 5 + 5 marks for 3 prints = 15 marks

**Note :** Sessional work will also be evaluated on the same pattern.

#### 2. FORMAT OF THE QUESTIONS :

##### **PART I : GRAPHIC COMPOSITION (PRINT-MAKING) 45 MARKS.**

Choose one of the print-making medium available and taught in your school viz. serigraphy, lithography, etching and engraving.

Make a Graphic-Composition on anyone of the five subject given below according to the possibility and suitability of the medium :

(Note : Any five suitable subject for "Graphic-Composition (Print-making)" are to be decided by the internal and external examiners jointly in accordance with the instruction are to be mentioned here).

Make use of line, tone and texture, exploiting the medium fully to realize composition.

Print your composition in one or two colours.

Pay special attention to print quality and cleanliness. Submit two identical prints along with all the rough layouts as your final submission.

Size of the plate :

- (i) Serigraphy 30 cm X 20 cm
- (ii) Lithography 30 cm X 20 cm
- (iii) Etching & engraving 30 cm X 20 cm

### **3. INSTRUCTION TO DECIDE THE SUBJECTS FOR GRAPHIC COMPOSITION (PRINT-MAKING)**

1. The external and internal examiners jointly are to select/decide five subjects suitable for Graphic-Composition (Print-Making).
2. Each subject should be so designed that the candidate may get a clear-cut idea of the subject, however, any candidate can perceive a subject in his/her own way but graphic quality must be maintained in the composition.
3. The examiners are free to select/decide the subjects, but these should be according to the standard to class XII and environment of the school/candidates.

**Some identified areas of the subjects for Graphic-Composition (Print-making) are given below in which some more areas may be added, if needed :**

- (i) Affairs of family, friends and daily life.
- (ii) Affairs of Professionals.
- (iii) Games & sports Activities.
- (iv) Nature.
- (v) Fantasy.
- (vi) National, religious & cultural events and celebrations.
- (vii) Ideas personal, social, local, provincial, national or international.

### **4. INSTRUCTIONS TO THE EXAMINERS**

1. Candidates should be given one hours break after first three hours.
2. Work of the Candidates for part I & II is to be evaluated on the spot by the external and internal examiners jointly.
3. Each work of parts I & II, after assessment, is to be marked as examined and duly signed by the external and internal examiners.

### **SOME REFERENCE BOOKS SUGGESTED FOR TEACHERS**

1. "The Techniques of Graphic Art", by H. Van Kruhingen.
2. "Printing Making, Harvevy Daniels (Hamlym).

3. "Art is Manual for Silk Screen Print Making", by Heavy Shockler
4. "Printing Making today", by Jules Helles.
5. "Silk Screen Techniques", J. I. Biege Leison, Dover Publication, New York.
6. "Introducing Screen Printing", Anthony Kinsey Walson Guplill, New York.
7. "The Art and Craft of Screen Process Printing", Kosloff, All the Bruce Publishing Co..., New York.
8. "Practical Screen Printing", Stephen Russ, Studio Vista Walson Auptill, New York.
9. "Artists Manual for Silk, Screen Print making", Harry Shekler, American Artist's Group' New York.
10. "Lihography", Vau Nostrav, Reinhold.
11. "Lithography for Artists", Standley Loues, Oxford University Press.
12. "Linocuts and Woodcuts", Michael Rothenstein Studio Vista, London.
13. "RElief Printing", Michael Rothenstein Studio Vista London.
14. "Etchin, Engraving and Intaglio Printing". Anthony Grossl Oxford University Press.
15. "The Art of Etching", E.S. Sumaden Gouslable, London.

## (C) SCULPTURE

### INTRODUCTION

The Course in Sculpture at Senior Secondary stage as an elective subject is aimed at developing aesthetic sense of the students through the understanding of various important, well known aspects and modes of Visual Art expression in India's rich cultural heritage from the period of Indus valley to the present time. It encompasses also a wide range to practical exercises in making of various sculptures for developing their mental faculties of observation, imagination and creation and the physical and technical skills.

### OBJECTIVES

#### (A) THEORY (HISTORY OF INDIAN ART)

Note:- As the syllabus of sculpture (Theory) is the same as that of Painting (Theory), its objectives are same.

#### (B) PRACTICAL

The aim is to introduce the student to the fundamental of making sculptures. All assignments should be designed to understand problems of volume, Weight, play of form in space etc., as against rendering on flat two dimensional. Adequate technical skills may be provided depending on the facilities available.

### THEORY

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**One Theory Paper**

**Time: 1 Hrs**

**Marks 25**

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### UNITWISE WEIGHTAGE

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**UNITS**

**MARKS**

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#### HISTORY OF INDIAN ART

- |    |  |    |
|----|--|----|
| 1. | The Rajasthan Pahari School of Miniature Painting.                 | 09 |
| 2. | The Mughal Deccan School of Miniature Painting.                    | 08 |
| 3. | The Bengal School of Painting and the Modern Trends in Indian Art. | 08 |

**PRACTICAL**

**One Paper**

**Time : 6 Hrs**

**60 Marks**

**UNITWISE WEIGHTAGE**

<b>UNIT</b>	<b>MARKS</b>
1. Modelling in Relief (Clay and Plaster of Paris) 22	
2. Modelling in Round (Clay and Plaster of Paris)	22
3. Sessional Work	16

**Unit 1:** Modelling in Relief

**Unit 2:** Modelling in Round

**Unit 3:** Sessional Work

Four pieces of Works prepared during the course selected by the candidate and certified by the school authorities as work executed in the school are to be placed before the examiners for assessment.

Use of clay Composition in hollow for baking.

\*Modelling of simplified human figures, birds, animals and plants in relief and round. Geometrical shapes like cube, cone, cylinder, etc., and their composition in relief as an exercise in design study of textures. Use of plaster of Paris.

**Note:** The time table to be so framed as to allow the students to work continuously for minimum of two periods at a stretch.

**GUIDELINES FOR EVALUATION OF PRACTICAL**

**1. Marking Scheme:**

<b>Part I : Modelling in Relief</b>	<b>22 Marks</b>
(i) Composition including emphasis on the subject	09
(ii) Handling of media	09
(iii) Creative approach and overall impression	04
<b>Part II : Modelling in Round</b>	<b>22 Marks</b>
(i) Composition including emphasis on the subject	09
(ii) Handling of media	09
(iii) Creative approach and overall impression	04

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**Part III : Sessional Work**

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**16 Marks**

Four works of Sculpture consisting of :

- |   |    |
|---|----|
| (a) (i) One Sculpture in Relief (High Relief) | 04 |
| (ii) One Sculpture in Relief (Low Relief)     | 04 |
| (b) Two Sculpture in Round                    | 08 |

**Note:** Sessional work will also be evaluated on the same pattern.

<b>2. Format of the questions:</b>
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**Part I : Modelling in Relief:**

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Make a Sculpture in Relief (low/high) on anyone of the following five subjects, the size should be within 25 to 30 cm. (horizontally or vertically) and about 4 cm. in thickness from the board.

**Note:** Any five suitable subjects for "Modelling in Relief" are to be decided by the external and internal examiners jointly in accordance with the instructions and are to be mentioned here.

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**Part II : Modelling in Round:**

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Prepare a Sculpture in round, in clay medium, on anyone of the following five subjects. The height should be within 25 t 3 cm. horizontally or vertically.

**Note:** Any five suitable subjects for "Modelling in Round" are to be decided in accordance with the instructions and are to be mentioned here strictly just before the start of the examination for Part II

<b>3. Instructions to decide the subjects for Modelling in relief and Round:</b>
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- (1) The examiners are to select/decide five subjects suitable for modelling in Relief and five subjects for modelling in round, The subjects for "Modelling in Round" are to be conveyed to the candidates strictly just before the start of the examination for Part II
- (2) Each subject should be so designed that the candidate may get a clear-cut idea of the subject, however, a candidate can perceive a subject in his/her own way. Distortion of human/animal forms may be allowed.
- (3) Choice of high or low relief should remain open to candidates.
- (4) The examiners are free to decide the subjects but they should be according to the standard of class XII and environment of the school/candidates. Some identified areas of the subjects for Modelling in Relief are given below in which some more areas may also be included:
  - (i) Nature Study;
  - (ii) Design, nature, decorative, stylized and geometrical;

- (iii) Family, friends and daily life;
- (iv) Birds and animals;
- (v) Games and sports activities;
- (vi) Religious, social and personal activities;
- (vii) Cultural activities;
- (viii) Ideas – Personal, social, local, provincial, national and international.

#### **4. General Instructions to the examiners:**

1. Candidates should be given one hour break after first three hours.
2. Work of the candidates of Parts I, II and III, is to be evaluated on the spot by the external and internal examiners jointly.
3. Each work of Part I, II and III after assessment, is to be marked as examined and duly signed by the external and internal examiners.

#### **Some Reference Books Suggested for teachers:**

1. "Indian Sculpture", by Chintaman kar.
2. "Exploring Sculpture:", by Jan Amdell Mills & Boon, London.
3. "The Technique of Sculpture", John W.Mills, P.T. Patsford Ltd., London.
4. "A History Sculpture of the World", Shelden Cneey, Thame and Hudson, London.
5. "Form and Space", Edward Their, Thomes and Hudson; London.
6. "Sculpture and Ideas", Michael F. Andrews.
7. "Modern Sculpture", Jean Selz, Heinemann, London.
8. "Creative Carving", (Material Techniques appreciation), Dons Z. Meilach, Pritam Publishing.



## D. APPLIED ART

### INTRODUCTION

The Course in Applied Art (Commercial Art) at Senior Secondary Stage as an elective subject is aimed to develop aesthetic sense of the students through the understanding of various important, well known aspects and modes of Visual Art expression in India's rich cultural heritage from the period of Indus Valley to the present time. It encompasses also a wide range of practical exercises in commercial Art for developing their mental faculties of observation, imagination creating and physical and technical skills.

### OBJECTIVE

**(A) Theory (History of Indian Art)**

**Note:-** As the syllabus of Applied Art-Commercial Art (Theory) is the same as that Painting (Theory), its objectives are same.

**(B) Practical.**

The purpose of introducing practical exercises in Applied Art (Commercial Art) is to help and able the students to develop professional competence in making Model Drawing Lettering, layout Preparation and poster so that they can link their lives with productivity.

### THEORY

One Theory Paper	Time: 1 Hour	Marks 25
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### UNITWISE WEIGHTAGE

UNITS	MARKS
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#### HISTORY OF INDIAN ART

- |    |  |    |
|----|--|----|
| 1. | The Rajasthan Pahari School of Miniature Painting.                 | 09 |
| 2. | The Mughal Deccan School of Miniature Paining.                     | 08 |
| 3. | The Bengal School of Painting and the Modern Trends in Indian Art. | 08 |

**Note:** The Syllabus of Applied Art-Commercial Art (Theory) is the same as that of painting (Theory) given earlier.

### PRACTICAL

One Paper	Time : 6 Hrs	60 Marks
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## UNITWISE WEIGHTAGE

UNIT	MARKS
1. Illustration	22
2. Poster	22
3. Sessional Work	16

### **Unit 1 : Illustration**

Study of techniques of Illustration on given subjects and simple situations supported by Drawing from life and outdoor sketching in different media suitable for printing.

### **Unit 2 : Poster**

Making a poster with specified data and slogan on a given subject in two or four colours.

### **Unit 3: Sessional Work**

Submission of portfolio consisting of:

- (i) Five selected drawing in any media done during the year including minimum of two illustrations **08 Marks**
- (ii) Two selected posters in chosen subject **08 Marks**

**Note:** The time table to be so framed as to allow the students to work continuously for minimum of two periods at a stretch

## GUIDELINES FOR EVALUATION OF PRACTICAL

### **1. Marking Scheme:**

<b>Part I : Illustrations</b>	<b>22 Marks</b>
(i) Composition including quality of drawing	09
(ii) Emphasis on the subject with a specific situation	09
(iii) Reproducing quality and overall impression	04
<b>Part II : Poster</b>	<b>22 Marks</b>
(i) Layout and lettering	09
(ii) Emphasis on the subject	04
(iii) Proper colour scheme and overall impression	09
<b>Part III : Sessional Work</b>	<b>16 Marks</b>
(i) Five selected drawings in any media including minimum of two illustrations	08
(ii) Two selected posters in chosen subjects	08

**Note:** Sessional work will also be evaluated on the same pattern.

## 2. Format of the questions:

### Part I : Illustration

Make an illustration in black and white in any colour media on anyone of the following five subjects with a specific situation.

Size of the illustration : 30cm X 22 cm.

**Note :** Any five suitable subjects for poster design decided by the external and internal examiners jointly in accordance with the instructions and are mentioned here, strictly just before the start of the examination for Part II.

### Part II : Poster

Prepare a poster-design with specified data and slogan in English/Hindi language, in three flat colours, on anyone of the following five subjects. The designing of the poster should have balanced use of typography and illustration.

Size of the Poster-design: ½ imp size.

**Note:** Any five suitable subjects for poster design decided by the external and internal examiners jointly in accordance with the instructions and are mentioned here, strictly just before the start of the examination for Part II.

## 3. (A) Instructions to decide the subjects for illustration:

1. The examiners are to select/decide five suitable subjects.
2. Each subject should be given a specific situation, which is a main characteristic of an illustration.
3. Each subject should be so designed that the candidate may get a clear-cut idea of the subject and they can illustrate a specific situation based on given subject areas.
4. The examiners are free to decide the subject but there should be according to the standard of the Class XII and environment of the School/candidates

Some identified areas of the subjects for illustration are given below, in which some more areas may be added if needed

#### **Subject with a specific situation:**

- (i) Family and friends in daily life.
- (ii) Professionals/professions.
- (iii) Games and sports.
- (iv) Nature.
- (v) National events and celebrations.

- (vi) Religious events and festivals.
- (vii) Culture-Dance, Drama, Music and Art.

**(B) Instructions to decide the subjects for Poster-design:**

1. The examiners are to select/decide five subjects suitable for poster-design.
2. Each subject should be given a specified data and slogan.
3. The data and slogan should be so framed/designed that the candidates may get a clear-cut idea of the subjects.
4. The examiners must give the subjects data and slogan according to the standard of Class XII and environment of the School/Candidates.  
Some identified areas for poster-design are given below, in which some more areas/subjects may be added.

**1. For Advertisement on:**

- (i) Execution/Tourism.
- (ii) Cultural activities.
- (iii) Community and Nature Development.
- (iv) Ideas-Social, National and international.
- (v) Commercial products.

**2. Instructions to the examiners:**

1. Candidates should be given one hour break after first three hours.
2. Work of the candidates for Parts I, II & III is to be evaluated on the spot by the external and internal examiners jointly.
3. Each work of Parts I, II and III after assessment, is to be marked as examined and signed by the external and internal examiners.

**Some Reference Books Suggested for Teachers:**

1. Typology-G.M. Rege, Bombay.
2. Kalatmak Lykhai, Published by D.A.V.P.
3. Figure Painting in Water Colour, Charles Reid Watson, Guptill Publication.
4. Walter T.Foster – Objective Drawing.
5. Walter T.Foster- Human Figure
6. Walter T.Foster- Head Study.
7. Walter T.Foster – Animal Study
8. Walter T.Foster- Landscape.
9. Applied Art Handbook – G.M. Rege, Bombay.

## 25.FRENCH

One Paper

Time : 3 Hours

Marks : 85

### SECTION-A : APPLIED GRAMMAR

25

- Filling the blanks with appropriate parts of speech.
- Transformation of sentences.
- Sentence Correction (not involving punctuation and spelling)
- Based on chapter 18-30 of Prescribed book

### SECTION-B : COMPREHENSION / READING

20

- One passage from the prescribed book (Prose / Poetry) 10
- One Unseen passage 10  
(Variety of comprehension question, including short answer question & Vocabulary (word attack))

### SECTION-C : WRITING SKILLS/COMPOSITION

16

- Writing a story based on outlines provided (120 words) 08
- One unaided composition based on the topics in the Prescribed book (120 words) 08

### SECTION-D : LITERATURE

24

(Short answer question on prescribed texts)

#### Prose

16

Comprehension of the prescribed text (Chapter 18-30)

#### Poetry

08

### POEMS TO BE STUDIED :

1. Rienn'est Beau-ch. Peguy
2. Avecton Parapluie- F. Jammes
3. Le Petit Train-Emile Henriot
4. La Petite Ville-A Ke Noailles
5. Sila Garonne-Gustave Nadaud

**PRESCRIBED BOOK : COURS DE LANGUE ET CIVILIZATION FRANCAISES II BY G. MAUGER, PUB : HACHETTE (CHAPTER 18-30)**

**GRAMMER TOPICS :**

- XI.**
  - 1. Negative
  - 2. Interrogative
  - 3. Sentence recording
  - 4. Sentence Correction
  - 5. Tenses of vergs (incl. subjonctif)
  - 6. Pronom relatif
  - 7. Adjectif Interrogatif
  - 8. Adjectif qualificatif
- XII.**
  - 1. Sentence recodering
  - 2. Sentence correction
  - 3. Tenses of verbs (excluding passe' simple and passe' Anti'Neur)
  - 4. Pronom interrogatif
  - 5. Uses of intinitif
  - 6. Pronom Personnel- all types
  - 7. Prepositions
  - 8. Pronom indefine & adjectif indefini

## 26.Yoga

### The Syllabus Consists of Two Parts:

I.	Theory	60 Marks
II.	Practical	25 Marks
	Total	85 Marks

### Theory

The theory paper will be divided into two parts and will be of 3 hours duration.

#### Part-A (Historical and Philosophical aspects of Yoga)

1. Yoga as defined in the Indian systems of philosophy with special reference to Sankhya and Yogdarshana.
2. The theory of Chitta its Vrittis and the concept of Kaleshas also the methods of their control.
3. The importance of social and personal ethics in personal life. A detailed study of Yamas, Niyamas and Pratyahara, their contribution towards the inculcation of moral values in life.
4. The role of Yoga Education for the restoration of Communal harmony, peace and National Internal Integration in the country.
5. General study of the life of:
  - (i) Gorakh Nath
  - (ii) Swami Ram Tirtha
  - (iii) Swami Viveka Nanda
  - (iv) Shri Aurbindo
  - (v) Gautama Budha

#### Part-B (Therapeutic and Physiological aspects of yoga)

6. Concept of health from the yogic point of view. Yoga as a science of health care and disease cure.
7. Physiological basis of Asanas, Pranayamas, Mudras and Bandhas. The benefits of such yogic practices.
8. Seperative study of the effects of yogic and non-yogic system of exercises on human organism. Yogic way of relaxation.
9. Yoga therapy its importance and limitations.  
Study of common diseases such as Diabetes, High and Low Blood Pressure, Obesity, Insomnia, Chronic Fatigue, Memory loss and retention, Bronchial Asthma. High levels of blood cholesterol. Gastric acidity, Ulcer. Chronic constipation, Piles, Hemia, Cervical spondylitis, Low back pain and certain Postural deformities- theircauses, symptoms and treatment through yogic therapatic measures.

## PRACTICAL

Asanas	8 Marks
Pranayama, Mudras, Bhandas & Dhayana	8 Marks
Shatkarmas	5 Marks
Practical Notebook	4 Marks
<b>Total</b>	<b>25 Marks</b>

- (i) Asanas as given in Hatha Yoga Pradeepika, Ghrenda Samhita, Shiva Samhita, Yogapanishads and other in vogue.
- (ii) Kriyas-Shatkarmas (Shatkriyas) as described in Hatha Yoga Pradeepika, Ghrenda Samhita and Shatkarma Sangraha.
- (iii) Pranayamas- Anuloma-viloma, Ujjai, Bhastrika and familiarity with other Pranayamas such as Surayabhedana-Chandrabhedana, Sitli-Shitkari, Bhastrika, Bharamari and Plavani
- (iv) Bandhas-Jalandhar, Uddiyana, Mula and Mahavandha.
- (v) Meditation-Elementary practice of Meditation, Chanting of "OM" and the practice of dhatana in any of the selected postures i.e. Sidhasna. Swastikasana Padmasana, Sukhasana and Vajarasana.
- (vi) Practical Notebook to be prepared by the students illustrating any nine asanas of their choice, and two kriyas and two body systems out of the following i.e. respiratory, glandular, excretory, Human brain and Spinal Chord.

### **LIST OF YOGIC ASANAS REQUIRED TO BE PERFORMED BY THE STUDENTS IS AS UNDER:**

#### **STANDING POSTURES:**

Tarasana, Trikonasana, Konasana, Padahastasana, Garudasana, Ardha-Chandrasana, khagasana, Birbhadrasana, Shirshangushthasana.

#### **SITTING POSTURES:**

Padmasana, Vajarasana, Parvatasana, Yogmudrasana, Uttitha-padmasana, Mandukasana, Paschimottanasana, Akaran-Dhanurasana, Shishankasana, Vakasana, Padamvakasana, Ardha-matsyenbrasana, Gomukhasana, Gorakshasana, Edpadsikandasana, Dwipadsikandasana, Uttithadwipadsikandasana, Puran-matsyenbrasana, Kukutasana, Onkarasana, Ushtrasana.

#### **LYING POSTURES:**

Shavasana, Halasana, Uttanapadasana, Matasyasana, Karanpidasana, Makrasana, Bhugangasana, Dhanurasana, Shalabhasana, Naukasana, Mayurasana, Shrishasana, Sarvangasana, Chakrasana, Gharabhasana, Pawanmuktasana.



## REFERENCES

1. Patanjali Yogasutras
2. Rajayoga by Swami Vivekananda
3. Asanas by Swami Kavalayananda.
4. Pranayama by Swami Kavalayananda.
5. Hathyoga Pradeepika.
6. Gherandasamhita.
7. Suksham vyama by Swami Dharendra Brahm Chari.
8. Yoga Therapy by Swami Kavalayananda and Dr. S.L. Vinkar.
9. Applied Philosophy by Samson Wright.
10. Ypaga Philosophy by S.N. Dasgupta.
11. Yog Chakitsa by Swami Ram Dev.

