BIOLOGY

SUBJECT SPECIFIC GUIDELINES FOR CLASS XII BIOLOGY THEORY PAPER

1. The theory paper shall be of 70 marks and of 3 hrs duration.
2. The syllabus shall be in accordance with the core syllabus provided by COBSE.
3. The questions shall be from all the units.
4. The question paper shall have four sections A,B, C & D. Section A will have 8 questions of one mark each. Section B will have 10 questions of 2 marks each, Section C will have 9 questions of 3 marks each and Section D will have 3 questions of 5 marks each. Total number of questions will be 30.
5. All questions will be compulsory.
6. There will be no overall choice. However an internal choice will be provided in one question of section B ,one question of section C and all the three questions of section D. A student has to attempt only one of the alternatives in such questions.
7. The student shall draw correct and neat diagram wherever asked.

BROAD GUIDELINES FOR SUBJECT SPECIFIC PRACTICALS BIOLOGY CLASS XII

1. The practical examination shall be of 30 marks and 3hr. duration
2. The following skill shall be evaluated during practical exam
   a) Procedural skill b) Observational skill
   c) Drawing skill d) Reporting and interpretative skill
3. Originality of investigatory project shall be given more importance than volume of report.
4. Scheme for evaluation during practical exam:

PART A **(9 marks)**

S.No	Area	Marks	Criteria	Marks Distribution
1	Practical file and viva on practical's	4	Complete and well maintained file	1
			Correct reporting of practical's done	1
			Viva on practical's	2
2	Investigatory Project and viva	5	Reason for selection	1
			Investigatory Project report	2
			Viva Voce on investigatory project	2
	Part-B(21Marks)			
3	Physiology experiment (Major experiment)	6	Procedural skill	2 + 1/2
			Observation	1
			Drawing	-
			Interpretation + conclusion	1 + 1/2
			precaution	1
4	Minor experiment Note:-☆ wherever diagram is considered essential as part of observation allot 1 ½ marks for procedure and 1 ½ for observation and labeled diagram	4	Procedural skill	2☆
			Observation	1☆
			Drawing	-
			Interpretation	1
5	Slide Preparation	4	Procedure skill	1
			Setting and focusing	1
			Drawing + Identification	1
			Reason for identification	1
6	7 spots	7(1 mark each)	Identification	½ X 7=3.5
			Reason for identification / labeled diagram	½ X 7=3.5

A. List of Experiments

1. Study pollen germination on a slide.
2. Collect and study soil from at least two different sites and study them for texture, moisture content, pH and water holding capacity. Correlate with the kinds of plants found in them.
3. Collect water from two different water bodies around you and study them for pH, clarity and presence of any living organism.
4. Study the presence of suspended particulate matter in air at two widely different site.
5. Study the plant population density by quadrate method.
6. Study the plant population frequency by quadrate method.
7. Prepare a temporary amount of onion root tip to study mitosis.
8. Study the effect of different temperatures and three different pH on the activity of salivary amylase on starch.
9. Isolate DNA from available plant material such as spinach, green pea seeds, papaya etc.
   NOTE: Major experiments- experiment No-8
   Minor experiments-experiment No-1-7 and 9

B. Study/observation of the following (spotting)

1. Flowers adapted to pollination by different agencies (wind, insects, birds).
2. Pollen germination on stigma through a permanent slide.
3. Identification of stages of gamete development, i.e., T.S. of testis and T.S. of ovary through permanent slides (from grasshopper/mice).
4. Meiosis in onion bud cell or grasshopper testis through permanent slides.
5. T.S. of blastula through permanent slides (Mammalian).
6. Mendelian inheritance using seeds of different colour/sizes of any plant.
7. Prepared pedigree charts of any one of the genetic traits such as rolling of tongue,blood groups, ear lobes, widow's peak and colour blindness.
8. Controlled pollination- emasculation, tagging and bagging.
9. Common disease causing organisms like Ascaris, Entamoeba, Plasmodium, Roundworm through
10. Two plants and two animals (models/virtual images) found in xeric conditions. Comment upon their morphological adaptations.
11. Two plants and two animals (models/virtual images) found in aquatic conditions. Comment upon their morphological adaptations.

ASSESSMENT OBJECTIVES & DISTRIBUTION OF FORMS OF QUESTIONS PER UNIT
TASK 4: BLUEPRINT OF CLASS XII BIOLOGY THEORY QUESTION PAPER

TIME ALLOWED: 03 HOURS **MAXIMUM MARKS:70**

UNIT	NAME OF UNIT	KNOWLEDGE				UNDERSTANDING				APPLICATION				SKILLS				
		LA	SA	VSA	OBJECTIVE	LA	SA	VSA	OBJECTIVE	LA	SA	VSA	OBJECTIVE	LA	SA	VSA	OBJECTIVE	TOTAL
1	Reproduction in animals	1 (3) ☆2	1 (2) ☆1	1 (2)	1(1)				1(1) MCQ			1(2)		1 (2) ☆2	(1) ☆1			14
2	Genetics and evolution	1 (5)		1 (2)			1 (3)	1(2)	1 (1) MCQ 1(1)		1 (3)						1(1)	18
3	Biology and Human welfare		1 (3)		1(1)		1 (3)	1(2)			1 (3)	1(2)						14
4	Bio technology and its application			1 (2)			1 (3)	1(2)	1 (1) MCQ			1(2)						10
5	Ecology and Environment		1 (3)		1(1) MCQ	1 (2) ☆3					1 (3)	1(2)		1 (3) ☆3				14
TOTAL					11(25)				11 (21)				7(17)				1+3 starred question(7)	30(70)

Note:- Questions marked as ☆1, ☆2 & ☆3- test two different objectives in each question and therefore are placed under two different objective columns.

DESIGN OF CLASS XII BIOLOGY (Theory question paper)

THEORY
M.M - 70
Time - 3 hrs.

1. Weightage to assessment objectives

Objectives	%Weightage	Marks Out Of 70
Knowledge	35	25
Understanding	30	21
Application	25	17
Skill/Diagrams	10	7

2. Weightage to Form/Types of Questions

Type Of Questions	%Weightage	No. Of Questions	Marks out of 70
Objective type(MCQ/VVSA)	11	8 (4MCQ/4VVSA)	8
VSA	29	10	20
SA	39	9	27
LA	21	3	15
Total No. of Questions = 30 Total marks = 70			

3. Weightage to difficulty level of questions

Level	%Weightage	Marks Out Of 70
Difficult	20	14
Average	50	35
Easy	30	21