DESIGN OF THE MODEL QUESTION PAPER - 2018
HSSC EXAMINATION

CLASS : XII **SUBJECT : Mathematics**

Time : $2\frac{1}{2}$ hours **Max Marks : 80**

The weightage or the distribution of marks over different dimensions of the question paper shall be as follows.

1 . Weightage to Learning Outcomes :

S . No	Learning outcomes	Marks	Percentage of marks
1	Knowledge	20	25%
2	Understanding	36	45%
3	Application	20	25%
4	Skill	4	05%
	Total	**80**	**100%**

2. Weightage to Content / Subject units:

Serial No	**Units**	**Marks**
1	Relations and Functions	4
2	Inverse Trigonometric Functions	4
3	Continuity and Derivatives	10
4	Applications of Derivatives	6
5	Integrals and applications	18
6	Differential Equations	6
7	Vectors and 3D	12
8	Probability	6
9	Matrices	6
10	Determinants	4
11	Linear Programming	4
	Total	**80**

3. Weightage to Forms of Questions:

S. No	**Form of questions**	**Marks for each question**	**Number of questions**	**Total marks**
1	Very short answer type (MCQ)	1	7	7
2	Short answer type (SA1)	2	7	14
3	Short answer type (SA2)	3	7	21
4	Long answer type (LA1)	4	7	28
5	Long answer type (LA2)	5	2	10
	Total		**30**	**80**

The expected time for difficult level problems would be as follows

S. No	Form of questions	Approx. time for each question in mins (t)	Number of questions (n)	Approx .time for each form of questions in mins (t xn)
1	Very short answer type(MCQ)	2	7	14
2	Short answer type (SA1)	3	7	21
3	Short answer type (SA2)	5	7	35
4	Long answer type (LA1)	7	7	49
5	Long answer type (LA2)	9	2	18
	Total		**30**	**137 mins**

As the actual time is calculated on the basis of the number of questions required to be answered and the length of their expected answer it would therefore be advisable for candidates to budget the time properly by cutting out the superfluous words and be within the expected time limits.

4. Scheme of options.

There will be no overall choice . However there will be internal choice in 02 sub questions of 03 marks category (section C), 02 sub questions of 04 marks category (section D) and 02 sub questions of 05 marks category (section E).

5. Weightage to difficult level of questions.

S, No	Estimated difficult level of questions	Marks	Percentage
1	Easy	24	30%
2	Average	40	50%
3	Difficult	16	20%
	Total	80	100%

A question may vary in difficulty level from individual to individual. As such the assessment in respect of each question will be made by the paper setter on the basis of general anticipation from the group as a whole taking the examination. This provision is only to make the paper balanced in its weightage rather than to determine the pattern of marking at any stage.

6. 10 % theory (8 marks) is to be included.

Unit – wise time and marks distribution

UNIT	CHAPTERS	No of different type of questions	Marks Alloted	Topic wise marks	Time in minutes
I	• Relations and Functions	SA 1 - 2	4	4	6
	• Inverse Trigonometric functions	MCQ –1 SA2 - 1	1 3	4	2 5
II	. • Matrices	SA1 – 1 LA1 - 1	2 4	6	3 7
	• Determinants	LA1 - 1	4	4	7
III	• Continuity & Derivatives	MCQ – 1 SA2 -3	1 9	10	2 15
	• Applications of Derivatives	MCQ – 1 LA2 - 1	1 5	6	2 9
	• Integration	SA1 – 1 SA2 – 1 LA1- 1 LA2 - 1	2 3 4 5	14	3 5 7 9
	• Application of Integration	LA1 –1	4	4	7
	• Differential Equations	MCQ – 2 LA1- 1	2 4	6	4 7
IV	• Vectors	SA1- 1 SA2 -1	2 3	5	3 5
	• 3 Dimensional Geometry	MCQ- 1 SA1 – 1 LA1 - 1	1 2 4	7	2 3 7
V	• Linear Programming	LA1- 1	4	4	7
VI	• Probability	MCQ- 1 SA1 – 1 SA2 - 1	1 2 3	6	2 3 5
		30	80	80	137 +13 mins for reading and revision