Format of Design (Subject other than language)
Question Paper/Test

Subject: Mathematics
Unit/Paper: 15E/T, 16E/T
Class: X
Time: 3 hrs 15 min
Marks: 100

Weightage to Objective

Objective	Knowledge	Understand	Application	Analyse	Evaluation	Creation	Total
% of Marks	20	25	20	15	10	10	100
Marks	20	25	20	15	10	10	100

Weightage to Form of Question

Forms of Questions	E/LA	SA	VSA	O (MCQ) - 1 Mark Qns	Total
No. of Questions	5	8	8	12	33
Marks Allotted	8	4	2	1	100
Estimated Time	70 m	60 m	30 m	20 m	180m + 15m

Weightage to Objective

S. No.	Unit/Sub-Units	Marks
1	Real Numbers	1 + 8 = 9
2	Polynomials	1 + 1 + 2 + 4 = 8
3	Pair and Linear Equations in two variables	1 + 8 = 9 (8)
4	Quadratic Equations	1 + 2 + 4 = 7
5	Arithmetic Progressions	1 + 4 + 8 = 13
6	Triangles	1 + 2 + 8 = 11
7	Coordinate Geometry	2 + 8 = 10
8	Introduction to Trigonometry	1 + 2 + 4 = 7
9	Some Applications of Trigonometry	1 + 2 + 8 = 11
10	Circles	1 + 2 + 4 = 7
11	Areas Related to Circles	8
12	Surface Areas and Volumes	1 + 2 + 4 = 7
13	Statistics	4 + 8 = 12
14	Probability	1 + 4 + 8 = 13
Total		100 (32)

Weightage to Major Content Areas

Schemes of Sections	4
Pattern of Options	Internal choice in Section IV only

Estimated Difficulty Level	Difficult	20 % Marks
	Average	40 % Marks
	Easy	40 % Marks

Index of Abbreviations
(E/LA: Essay/Long Answer; **SA:** Short Answer; **VSA:** Very Short Answer; **O:** Objective)

FORMAT OF BLUEPRINT (Subject other than language)

Subject: MATHEMATICS **Class: X**

Unit/Paper: **Max Marks: 100** **Time: 3 H : 15 Min.**

S. No.	Content Unit / Sub Unit	Knowledge				Understanding				Application				Analysis				Evaluation				Creation				Total (Row-wise)
		E/LA	SA	VSA	O	E/LA	SA	VSA	O	E/LA	SA	VSA	O	E/LA	SA	VSA	O	E/LA	SA	VSA	O	E/LA	SA	VSA	O	
1	1								1					1												1 + 8 = 9
2	2				1		1																	1	1	1+1+2+4=8
3	3									1+1						1									1	1 + 8 = 9 (8)
4	4						1									1									1	1 + 2 + 4 = 7
5	5	1	1														1									1 + 4 + 8 = 13
6	6			1					1					1												1 + 2 + 8 = 11
7	7			1														1								2 + 8 = 10
8	8		1		1				1												1					1 + 2 + 4 = 7
9	9			1	1					1					1										1	1 + 2 + 8 = 11
10	10			1																						1 + 2 + 4 = 7
11	11																									8
12	12				1			1			1							1								1 + 2 + 4 = 7
13	13	1																		1						4 + 8 = 12
14	14									1																1 + 4 + 8 = 13
	Total (Col-wise)	20 (Marks Total)				25 (Marks Total)				20 (Marks Total)				15 (Marks Total)				10 (Marks Total)				10 (Marks Total)				100 (Marks Total)

Notes: Figures within brackets to indicate the number of questions and figures outside the brackets to indicate marks.
Denotes that marks have been combined to form one question.

Summary:

			Marks:	
Essay (E)	No.	5	Marks:	5 × 8 = 40
Short Answer (SA)	No.	8	Marks:	8 × 4 = 32
Very Short Answer (VSA)	No.	8	Marks:	8 × 2 = 16
Objective (O)	No.	12	Marks:	12 × 1 = 12

Steps: a, b, c, d, e, f, g, h, i, j

Pattern of Options Sections 1, 2, 3, 4

Scheme of Sections Internal Choice — Only in Section-IV

BLUE PRINT & MODEL PAPERS OF SSC PUBLIC EXAMINATIONS FOR THE ACADEMIC YEAR 2025-26 BY THE DIRECTOR OF GOVERNMENT EXAMINATIONS (SSC BOARD), A.P.

15E & 16E

SSC PUBLIC EXAMATINATIONS 2025 - 26
MATHEMATICS   (MODEL PAPER - 1)
(ENGLISH VERSION)

Time : 3 Hours 15 Minutes	Max. Marks : 100

Instructions :

1. In the duration of 3hours 15 minutes, 15 minutes of time is allotted to read the question paper.

*2. All answers shall be written in the answer booklet **only**.*

3. Question paper consists of 4 Sections and 33 questions.

*4. Internal choice is available in section - **IV only**.*

5. Answers shall be written neatly and legibly.

<u>**SECTION - I**</u>   **12 × 1 = 12 M**

*Note :   i) Answer **all** the questions in **one word** or phrase.*
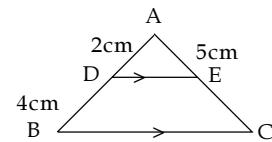
*ii) **Each** question carries **1** mark.*

1. Two positive integers A and B are written as $A = p^3q^2$ and $B = pq^3$ where p,q are prime numbers then HCF (A,B) is

   A) p^3q^2 B) pq^2 C) p^3q D) pq

2. The coefficient of x in $p(x) = 7x^3 - 6x^2 + 5x + 8$ is

   A) 7   B) –6   C) 5   D) –5

3. Write a polynmial of degree 4, having constant term –6.

4. Create a linear equation which is parallel to the given line $2x + 3y + 8 = 0$.

5. **Assertion (A) :** 4 is the common diffrence of A.P. 5, 9, 13 ..... 185.

   Reason (R) : The common diffrence of an A.P. $d = a_n - a_{n-1}$

   Now, choose the correct answer.

   A) Both A and R are True and R is correct explanation of A.

   B) Both A and R are True and R is not correct explanation of A.

   C) A is true, R is false.

   D) A is false, R is true.

6. In the adjacent figure if AD = 2cm, BD = 4cm and AE = 5cm then EC = ... cm.

   A) 7   B) 10   C) 14   D) 20

7. Which Trigonometric ratio is equal to Adjacent side of θ/hypotenuse

   A) sin θ   B) cos θ   C) tan θ   D) cot θ

8. In Heights and Distance problems, angles are always taken with respect to horizontal line. (True / False)

9. Surface area Hemisphere having radius r is

   A) πr^2 B) $2\pi r^2$ C) $3\pi r^2$ D) $4\pi r^2$

10. $P(E) + P(\overline{E}) =$ _____

    A) 0   B) 1   C) –1   D) More than 1

11. Create a geometrical design involving two tangents drawn from an external point to the circle.

12. Form a quadratic equation which has 1 as one of its roots

<div align="center">

SECTION - II   **8 × 2 = 16 M**

</div>

Note :   *i) Answer* **all** *the questions.*

        ii) **Each** *question carries* **2 marks.**
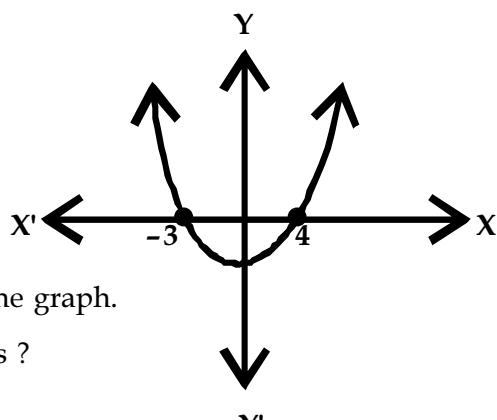
13. Create a quadratic polynomial whose sum and product of zeroes are 3 and –2 respectively.

14. Find the value of k, if both the roots of $2x^2 + kx + 3 = 0$ are equal.

15. State SAS criterian in similarities of triangles.

16. If tan $(A+B) = \sqrt{3}$ and tan $(A-B) = \dfrac{1}{\sqrt{3}}$; $0 < A + B \leq 90°$ and A > B Find A.

17. Define angle of elevation with a simple rough diagram.

18. A Quadrilatera ABCD is drawn to circumscribe a circle then write the relation between its sides.

19. Find the volume of largest circular cone that can be cut out of a cube of edge 7cm.

20. Write the formulae to find the distance between

    i) the two points $(x_1 y_1)$ and $(x_2 y_2)$

    ii) Origin and a point (x,y)

SECTION - III   **8 × 4 = 32 M**

Note :   *i) Answer all the questions.*
          ii) Each question carries 4 marks.

21. One card is drawn from a well-shuffled deck of 52 cards. "Calculate the probability that the drawn card will be an ace" ?

    Now create 4 such type of questions.

22. Write the formula to find mode of a grouped data and explain the terms in it.

23. A solid is in the shape of a cone standing on a hemisphere with both their radii being equal to 1 cm and the height of the cone is equal to its radius. Find the volume of the solid in terms of π.

24. Find the discriminant of the equation $3x^2 - 2x + \dfrac{1}{3} = 0$ and hence find the nature of its roots. Find them if they are real.

25. State three identies that used in Trignometry.

26. Write the following formulae of A.P. a_1, a_2, a_3 ...... and name the terms in each

    A) n^{th} term (a_n)

    B) Sum of first n terms (S_n)

    C) Common difference (d)

27. Prove that the parallelogram circumscribing circle is a rhombus.

28. By observing the graph Answer the following Questions.

    1) What is the shape of the graph.

    2) How many zeros it has ?

    3) What are the zeroes

    4) Find the sum of Zeroes.

SECTION - IV   5 × 8 = 40 M

Note : **i)** *Answer* **all** *the questions.*

ii) **Each** *question carries* **8** *marks.*

iii) *There is an internal choice for each question.*

29. a) Is $3+2\sqrt{5}$ irrational ? justify your answer.

OR

b) Sides AB and AC and Median AD of a triangle ABC are respectively proportional to the sides PQ and PR and Median PM of another triangle PQR.

Show that ΔABC ~ ΔPQR.

30. a) Two students Claim to have found the points of trisection of the line segment joining A (4,–1) and B(–2,–3) as follows.

Students A : $\left(0, \dfrac{5}{3}\right)$ and $\left(0, \dfrac{7}{3}\right)$

Students B : $\left(2, \dfrac{-5}{3}\right)$ and $\left(0, \dfrac{-7}{3}\right)$

Who is correct ? Justify.

OR

b) A horse is tied to a peg at one corner of a square shaped grass field of side 15 m by means of a 5 m long rope. Find

i) the area of that part of the field in which the horse can graze.

ii) the increase in the gazing area if the rope was 10 m long instead of 5 m.
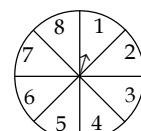
(use π = 3.14)

31. a) A game of chance consists of spinning an arrow which comes to rest pointing at one of the numbers 1, 2, 3, 4, 5, 6, 7, 8 and these are equally likely out comes. Caliculate the probabilities that it will point at

i) 8   ii) an odd number

iii) a number greater than 3   iv) a number less thant or equal to 8

OR

b) From a point on a bridge across a river, the angles of depression of the banks on opposite sides of the rivers are 30° and 45°, respectively. If the bridge is at a height of 3m from the banks, find the width of the river.

32. a) A life insurance agent found the following data for distribution of ages of 100 policy holders. Calculate the median age, if policies are given only to persons having age 18 years onwords but less than 60 years.

Age in years	Below 20	Below 25	Below 30	Below 35	Below 40	Below 45	Below 50	Below 55	Below 60
Number of Policy holders	2	6	24	45	78	89	92	98	100

OR

b) In a school, stundts thought of planning trees in and around the school to reduce air pollution. It was decided that the number of trees, that each section of each class will plant, will be the same as the class, in which they are studying. e.g. a section of class I will plant 1 trees, a section of class II will plant 2 trees and so on till class XII. There are three sections of each class. How many trees will be planted by the students ?

33. a) Draw the graph of the following pair of linear equations and find the solution from the graph.

   $x - y + 1 = 0$ and $3x + 2y - 12 = 0$

OR

b) 5 pencils and 7 pens together cost Rs.50 where as 7 pencils 5 pens together cost Rs.46. Find the cost of one pencil and that of one pen.

Form the pair of linear equations for the above problem and find their solution graphically.