ANDHRA PRADESH

PYQP

2024

QUESTION PAPER

@aglasem.com

15E & 16E

Total No. of Printed Pages : 7

Question Booklet Sl. No.
3520150

MATHEMATICS

(English Version)

Time : 3 Hours 15 Minutes

Max. Marks : 100

Instructions :

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

SECTION – I

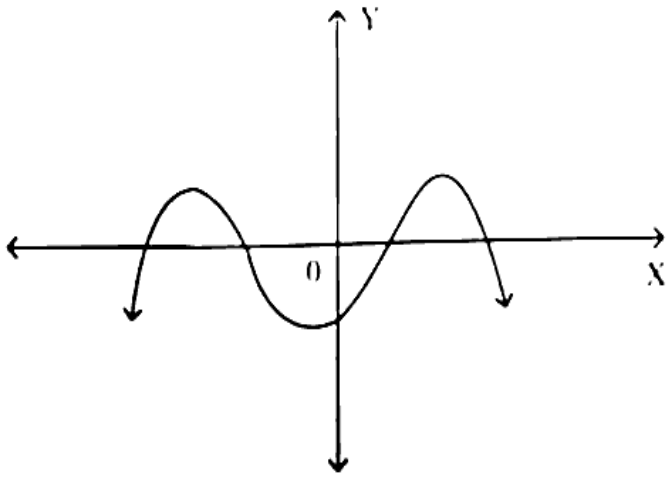
(12×1=12)

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

1. What is the HCF of 37 and 49 ?

2. $\mathbb{N} = \{1, 2, 3, ...\}$. This set is a an _____ set. (Finite Infinite)

3. Find the number of zeroes of the polynomial p(x), whose graph is given.



4. Which of the following equations is not a linear equation ?

(A) $5 + 4x = y + 3$

(B) $x + 2y = y - x$

(C) $3 - x = y^2 + 4$

(D) $x + y = 0$

5. **Statement – I** : $2x^2 - x = 5$ is a quadratic equation.

Statement – II : General form of the quadratic equation is $ax^2 + bx + c = 0$, where $a \neq 0$.

Now, choose the correct answer.

(A) Both statements are true

(B) Statement I is true and Statement II is false

(C) Statement I is false and Statement II is true

(D) Both statements are false

6. Match the following :

i. $\tan\theta$	p. $\frac{1}{\cos\theta}$
ii. $\sec\theta$	q. $\frac{1}{\sin\theta}$
iii. $\operatorname{cosec}\theta$	r. $\frac{\sin\theta}{\cos\theta}$

Choose the correct answer.

(A) i → r, ii → p, iii → q

(B) i → r, ii → q, iii → p

(C) i → p, ii → q, iii → r

(D) i → q, ii → r, iii → p

7. Distance between the two points (2, 0) and (6, 0) is _____ units.

8. The nth term of G.P. is $a_n = a.r^{n-1}$. Here, 'r' represents _____.

9. Two _____ are not always similar.

(A) Line segments

(B) Triangles

(C) Circles

(D) Squares

10. Number of tangents drawn from the external point to the circle is _____.

11. What is the length of the edge of the cube whose volume is 64 cm^3 ?

(A) 4 cm

(B) 16 cm

(C) 5 cm

(D) 6 cm

12. Which of the following cannot be the probability of an event ?

(A) 0.3

(B) – 1.5

(C) 15%

(D) $\frac{2}{7}$

(8×2=16)

SECTION – II

Note : 1) Answer all the questions.

2) Each question carries 2 marks.

13. Check whether 3 and – 2 are the zeroes of the polynomial $p(x) = x^2 - x - 6$.

14. 5 pencils and 7 pens together cost ₹ 50, whereas 7 pencils and 5 pens together cost ₹ 46. Represent this information in the form of pair of linear equations in variables x and y.

15. Check whether $(x - 2)^2 + 1 = 2x - 3$ is a quadratic equation.

16. Find the centroid of the triangle whose vertices are (3, – 2), (– 2, 8) and (0, 4).

17. A flag pole 4 m tall casts 6 m shadow. At the same time, a nearby building casts a shadow of 24 m. How tall is the building ?

18. Calculate the length of the tangent drawn from a point 15 cm away from the centre of a circle of radius 9 cm.

19. A solid toy is in the form of right circular cylinder with hemispherical shape at one end and a cone at the other end. Draw a rough diagram of this solid toy.

20. Express $\sin 81° + \tan 81°$ in terms of trigonometric ratios of angles between 0° and 45°.

SECTION – III

(8×4=32)

Note : 1) Answer all the questions.

2) Each question carries 4 marks.

21. If $x^2 + y^2 = 25xy$, then prove that $2\log(x + y) = 3\log 3 + \log x + \log y$.

22. Draw the Venn diagrams of $A \cup B$, $A \cap B$, $A - B$ and $B - A$ (Here A, B are non-empty sets)

23. Solve the pair of linear equations $3x + 2y = 11$ and $2x + 4y = 4$.

24. Find the roots of the quadratic equation $2x^2 + x - 3 = 0$.

25. Find the volume and surface area of a sphere of radius 2.1 cm. $\left(\text{Take } \pi = \frac{22}{7}\right)$.

26. Simplify $(1 - \cos\theta)(1 + \cos\theta)(1 + \cot^2\theta)$.

27. A die is thrown once. Find the probability of getting

    i) a prime number

    ii) an odd number.

28. Write the formula to find the median of a grouped data and explain the terms involved in it.

SECTION – IV (5×8=40)

Note : 1) Answer all the questions.

2) Each question carries 8 marks.

3) There is an internal choice for each question.

29. a) Prove that $\sqrt{7}$ is irrational.

OR

b) ABC is a right triangle right angled at C. Let BC = a, CA = b, AB = c and let p be the length of perpendicular from C on AB. Prove that

i) $pc = ab$

ii) $\frac{1}{p^2} = \frac{1}{a^2} + \frac{1}{b^2}$.

30. a) If $A = \{1, 3, 4, 5, 7\}$, $B = \{2, 4, 5, 6\}$, $C = \{4, 5, 8, 9\}$, $D = \{1, 3, 7, 8\}$, then find

i) $A \cup B$

ii) $B \cap D$

iii) $A \cap D$

iv) $C - D$

OR

b) A sum of ₹ 700 is to be used to give seven cash prizes to students of a school for their overall academic performance. If each prize is ₹ 20 less than its preceding prize, find the value of each of the prizes.

31. a) Find the co-ordinates of the points of trisection of the line segment joining $(4, -1)$ and $(-2, -3)$.

OR

b) The table below shows the daily expenditure on food of 25 households in a locality.

Daily Expenditure (In Rupees)	100 - 150	150 - 200	200 - 250	250 - 300	300 - 350
No. of Households	4	5	12	2	2

Find the mean daily expenditure on food by a suitable method.

32. a) Two poles of equal heights are standing opposite to each other on either side of the road, which is 120 feet wide. From a point between them on the road, the angles of elevation of the top of the poles are 60° and 30° respectively. Find the height of the poles and the distance of the point from the poles.

OR

b) One card is drawn from a well shuffled deck of 52 cards. Find the probability of getting :

i) a face card

ii) a spade

iii) the queen of diamonds

iv) the king of hearts.

33. a) Draw the graph of the polynomial $p(x) = x^2 - x - 12$ and find its zeroes.

OR

b) Construct a triangle of sides 4 cm, 5 cm and 6 cm. Then, construct a triangle similar to it, whose sides are $\frac{3}{4}$ of the corresponding sides of the first triangle.

QUESTION PAPERS

GET PREVIOUS YEAR QUESTION PAPERS FOR ALL CLASSES FOR CBSE, ISCSE, ISC AND ALL ALL STATE BOARDS HERE AT AGLASEM.COM

BOARD WISE

- Andhra Pradesh Board Question Papers
- Assam Board Question Papers
- Bihar Board Question Papers
- Chhattisgarh Board Question Papers
- Goa Board Question Papers
- Gujarat Board Question Papers
- Haryana Board Question Papers
- Himachal Pradesh Board Question Papers
- J&K State Board Question Papers
- Jharkhand Board Question Papers
- Karnataka Board Question Papers
- Kerala Board Question Papers
- Madhya Pradesh Board Question Papers
- Maharashtra State Board Question Papers
- Manipur Board Question Papers
- Meghalaya Board Question Papers
- Mizoram Board Question Papers
- Nagaland Board Question Papers
- Orissa Board Question Papers
- Punjab Board Question Papers
- Rajasthan Board Question Papers
- Tamil Nadu Board Question Papers
- Telangana State Board Question Papers
- Tripura Board Question Papers
- Uttarakhand Board Question Papers
- Uttar Pradesh (UP) Board Question Papers
- West Bengal (WB) Board Question Papers