

TAYARRI

FREE PAST PAPERS

Mathematics (Science)	Tenth Class, 2025 Gujranwala Board	Group - II
Time: 20 Minutes	Objective	Marks: 15

Note: You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill that circle in front of the relevant question number. Use marker or pen to fill in the circles. Cutting or filling of two or more circles will result zero mark in that question.

1. The circumference of a circle is called
 (A) Chord (B) Segment
 (C) Boundary (D) Sector
2. Product of cube roots of unity is
 (A) 0 (B) 1
 (C) -1 (D) 3
3. A 4cm long chord subtends a central angle of 60° . The radial segment of this circle is
 (A) 1 cm (B) 2 cm
 (C) 3 cm (D) 4 cm
4. The third proportional of x^2 and y^2 is
 (A) $\frac{y^2}{x^2}$ (B) x^2y^2
 (C) $\frac{y^4}{x^2}$ (D) $\frac{y^2}{x^4}$
5. A line which has two points in common with a circle is called
 (A) Sine of a circle (B) Cosine of a circle
 (C) Tangent of a circle (D) Secant of a circle
6. If $a : b = x : y$, then alternando property is
 (A) $\frac{a}{x} = \frac{b}{y}$ (B) $\frac{a}{b} = \frac{x}{y}$
 (C) $\frac{a+b}{b} = \frac{x+y}{y}$ (D) $\frac{a-b}{x} = \frac{x-y}{y}$
7. The distance of any point of the circle to its centre is called
 (A) Radius (B) Diameter
 (C) Chord (D) An arc
8. The identity $(5x + 4)^2 = 25x^2 + 40x + 16$ is true for
 (A) All values of x (B) Three values of x
 (C) Two values of x (D) One value of x
9. $\operatorname{cosec}^2\theta - \cot^2\theta = \text{-----}$
 (A) -1 (B) 1
 (C) 0 (D) $\tan\theta$
10. $\alpha^2 + \beta^2$ is equal to
 (A) $\alpha^2 - \beta^2$ (B) $\frac{1}{\alpha^2} + \frac{1}{\beta^2}$
 (C) $(\alpha + \beta)^2 - 2\alpha\beta$ (D) $\alpha + \beta$
11. Mean is affected by change in-----
 (A) Value (B) Ratio
 (C) Origin (D) Place
12. The solution set of equation $4x^2 - 16 = 0$ is
 (A) $\{\pm 4\}$ (B) $\{4\}$
 (C) $\{\pm 2\}$ (D) $\{2\}$
13. The number of elements in power set $\{1, 2, 3\}$ is
 (A) 9 (B) 8
 (C) 6 (D) 4
14. The number of terms in a standard quadratic equation $ax^2 + bx + c = 0$ is
 (A) 4 (B) 3
 (C) 2 (D) 5
15. The range of $R = \{(1, 3), (2, 2), (3, 1), (4, 4)\}$ is
 (A) $\{1, 2, 4\}$ (B) $\{3, 2, 4\}$
 (C) $\{1, 3, 4\}$ (D) $\{1, 2, 3, 4\}$

Mathematics (Science)	Tenth Class, 2025 Gujranwala Board	Group - II
Time: 2:10 Hours	Subjective	Marks: 60

Note: Section I is compulsory. Attempt any THREE (3) questions from Section II, however, question No. NINE (9) is compulsory.

SECTION - I

Q.2 Write short answers / solve any SIX (6) questions: (2 × 6 = 12)

- (i) Solve by factorization: $4 - 17x^2 = 32x$
- (ii) Write $\frac{(x-3)(x+7)}{7} = -1$ in standard form.
- (iii) Define quadratic equation and give an example.
- (iv) Find the discriminant of $x^2 - 3x + 3 = 0$
- (v) Evaluate: $\omega^{-13} + \omega^{-17}$
- (vi) Write quadratic equation having roots: $-i + 1, i + 1$
- (vii) State theorem of componendo - dividendo.
- (viii) Find mean proportional to 25 and 49
- (ix) Find fourth proportional to $4x^4, 2x^3, 18x^5$

Q.3 Write short answers / solve any SIX (6) questions: (2 × 6 = 12)

- (i) Define fraction and give one example.
- (ii) Resolve into partial fractions: $\frac{x-5}{x^2+2x-3}$
- (iii) Write down De Morgan's Laws.
- (iv) If $U = (4, 5, 6, 7, \dots, 25)$, $X = (11, 13, 17, 19, 23)$ and $Y = (4, 5, 6, 7, \dots, 17)$, then find $(X \cap Y)$
- (v) Find a and b if $(a - 2, 2b + 1) = (3a + 1, b - 3)$
- (vi) Define Onto function.
- (vii) What is Histogram?
- (viii) Write down any two properties of arithmetic mean.
- (ix) Find the median for the frequency distribution:

X	Frequency
1	3
2	8
3	5
4	3
5	1

Q.4 Write short answers / solve any SIX (6) questions: (2 × 6 = 12)

- (i) What is meant by a degree?
- (ii) Define coterminal angles. Give an example.
- (iii) Find the distance travelled by a cyclist moving in a circle of radius 15m, if he makes 3 revolutions.
- (iv) Verify that $\cot\theta \sec\theta = \operatorname{cosec}\theta$
- (v) Differentiate between acute angle and obtuse angle.
- (vi) Define central angle.
- (vii) Define tangent of a circle.
- (viii) The length of the side of an equilateral triangle is 9.5cm, What is its perimeter?
- (ix) Draw a tangent at any point on the circumference of a circle.

SECTION - II

Note: Every question has 8 marks (each part = 4 marks)

Q.5 (a) Solve the equation: $2x^4 + x^3 - 6x^2 + x + 2 = 0$
(b) Solve by using synthetic division, if '3' and '-4' are the roots of the equation $x^4 + 2x^3 - 13x^2 - 14x + 24 = 0$

Q.6 (a) Solve by using Componendo - Dividendo Theorem:

$$\frac{(x+5)^3 - (x-3)^3}{(x+5)^3 + (x-3)^3} = \frac{13}{14}$$

(b) Resolve $\frac{7x+4}{(3x+2)(x+1)^2}$ into partial fractions.

Q.7 (a) If $U = \{x \mid x \in \mathbb{N} \wedge 3 \leq x \leq 25\}$,
 $X = \{x \mid x \text{ is prime} \wedge 7 < x \leq 23\}$
 $Y = \{x \mid x \in \mathbb{W} \wedge 4 < x \leq 17\}$ then find the value of $X' \cap Y'$

(b) Find the standard deviation of the data: 40, 60, 70, 80, 90

Q.8 (a) The base of a rectangle is 25 feet and the height of the rectangle is 13 feet. Find the angle that the diagonal of the rectangle makes with the base.

(b) Circumscribe a circle about an equilateral triangle ABC with each side of length 4 cm.

Q.9 Prove that one and only one circle can pass through three non-collinear points.

OR

Prove that any two angles in the same segment of a circle are equal.

Notes on this transcription

- Typeset by Tayarri from the printed 2025 Gujranwala Board paper. Question wording, numbering and option order follow the source exactly. No answer key is included.
- The source is an "UNSOLVED" guide reprint rather than an original board sheet, so no paper code is printed on it.
- The first objective item is printed as "1.1" in the source; the items are numbered 1-15 here, following the printed sequence.
- Q.6 (objective):** option (D) is printed as shown, with x in the left-hand denominator. It is reproduced as printed.
- Q.3(iv) (subjective):** the three sets are printed with round brackets rather than braces in the source; reproduced as printed.