

MATHEMATICS (SCIENCE GROUP) GROUP-II ریاضی (سائنس گروپ) گروپ - دوسرا

TIME ALLOWED: 20 Minutes OBJECTIVE حصہ معروضی وقت = 20 منٹ

MAXIMUM 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 that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question. Attempt as many questions as given in objective type question paper and leave others blank. No credit will be awarded in case BUBBLES are not filled. Do not solve question on this sheet of OBJECTIVE PAPER.

Q.No.1 سوال نمبر 1

- (1) Conjugate of the surd $a + \sqrt{b}$ is:-
 (A) $a - \sqrt{b}$ (B) $-a + \sqrt{b}$ (C) $\sqrt{a} + b$ (D) $\sqrt{a} - \sqrt{b}$
- (2) Factors of $3x^2 - x - 2$ are:-
 (A) $(x+1)(3x-2)$ (B) $(x+1)(3x+2)$ (C) $(x-1)(3x-2)$ (D) $(x-1)(3x+2)$
- (3) Square root of $a^2 - 2a + 1$ is:-
 (A) $(a-1)$ (B) $(a+1)$ (C) $\pm(a-1)$ (D) $\pm(a+1)$
- (4) $x = \frac{3}{2}$ is a solution of inequality $-2 < x < \frac{3}{2}$
 (A) -5 (B) 3 (C) $\frac{3}{2}$ (D) 0
- (5) If $x = 2$, $y = 2x + 1$ then y is equal to:-
 (A) 2 (B) 3 (C) 4 (D) 5
- (6) Distance between points $(1, 0)$ and $(0, 1)$ is:-
 (A) 0 (B) 1 (C) $\sqrt{2}$ (D) 2
- (7) The symbol used for correspondence between two triangles. (A) \sim (B) \leftrightarrow (C) \equiv (D) \cong
- (8) In a _____, opposite sides are congruent.
 (A) Triangle (B) Parallelogram (C) Trapezium (D) Rhombus
- (9) The perpendicular bisectors of the sides of a triangle are
 (A) Concurrent (B) Equal (C) Perpendicular (D) None of these
- (10) _____ non-collinear points are in a plane.
 (A) 1 (B) 2 (C) 3 (D) 4
- (11) Area of the given figure is:-

 (A) $5cm^2$ (B) $10cm^2$ (C) $20cm^2$ (D) $25cm^2$
- (12) The medians of a triangle cut each other in the ratio:-
 (A) 4:1 (B) 3:1 (C) 2:1 (D) 1:1
- (13) For value _____ of x , $\begin{bmatrix} 3 & -6 \\ 2 & x \end{bmatrix}$ will be singular matrix.
 (A) 3 (B) -4 (C) 3 (D) 4
- (14) The conjugate of $6 + 5i$ is:-
 (A) $-6 + 5i$ (B) $-6 - 5i$ (C) $6 + 5i$ (D) $6 - 5i$
- (15) If $y = \log_2 x$, then:-
 (A) $y^x = x$ (B) $z^y = x$ (C) $x^z = z$ (D) $x^z = y$

Ans. (M.A 15, II): 1a, 2d, 3c, 4d, 5d, 6c, 7b, 8b, 9a, 10c, 11d, 12c, 13d, 14d, 15b

MATHEMATICS (SCIENCE GROUP) GROUP-II ریاضی (سائنس گروپ) گروپ - دوسرا

TIME ALLOWED: 2.10 Hours SUBJECTIVE حصہ انشائیہ وقت = 2.10 گھنٹے

MAXIMUM MARKS: 60
 NOTE: - Write same question number and its part number on answer book, as given in the question paper.

SECTION-I حصہ سوال

2. Attempt any six parts. 12 = 2 x 6
 (i) Define Rectangular Matrix with example.
 (ii) Find the product of Matrices $\begin{bmatrix} 1 & -1 \\ 1 & 0 \end{bmatrix} \begin{bmatrix} 2 & -1 \\ 1 & 3 \end{bmatrix}$
 (iii) Define Irrational Numbers with example.
 (iv) Simplify: $\sqrt{25x^{10}y^{18}}$
 (v) Define Antilogarithm.
 (vi) Find the value of $\log_2 \frac{1}{128}$
 (vii) Simplify: $\frac{(x+2)(x^2-1)}{(x+1)(x^2-4)}$
 (viii) Factorize: $8x^3 - \frac{1}{27y^3}$
 (ix) Factorize: $x^4 + x^2 + 25$
3. Attempt any six parts. 12 = 2 x 6
 (i) Define Highest Common Factor.
 (ii) Solve for x : $|3 + 2x| = |6x - 7|$
 (iii) Solve the inequality. $-4 < 3x + 5 < 8$
 (iv) Define an ordered pair of Real Numbers.
 (v) Verify whether the point $(2, 5)$ lies on the line $2x - y + 1 = 0$ or not.
 (vi) Find the distance between these pair of points. $A(3, -11)$, $B(3, -4)$
 (vii) Define Parallelogram.
 (viii) Define Collinear and Non-Collinear Points.
 (ix) How many end points does a ray and a line segment have?

SECTION-II حصہ دروم

NOTE: - Attempt any three questions. 24 = 8 x 3

- 5.(A) Solve the following linear equations by Cramer's Rule.
 (B) Simplify: $\frac{(216)^{\frac{1}{3}} \times (25)^{\frac{1}{5}}}{(0.04)^{\frac{1}{2}}}$
- 6.(A) Use logarithm tables to find the value of $(789.5)^x$
 (B) If $a^2 + b^2 + c^2 = 45$ and $a + b + c = -1$ then find the value of $ab + bc + ca$
- 7.(A) Use the remainder theorem to find the remainder when $6x^4 + 2x^3 - x + 2$ is divided by $(x + 2)$
 (B) Use division method to find the square root of $9x^4 - 6x^3 + 7x^2 - 2x + 1$
- 8.(A) Solve the given equation: $\frac{x}{3x-6} = 2 - \frac{2x}{x-2}$, $x \neq 2$
 (B) Construct a triangle ABC . Draw the perpendicular bisectors of its sides and verify their concurrency.
 $m\overline{AB} = 5.3cm$, $m\angle A = 45^\circ$, $m\angle B = 30^\circ$
9. Any point on the right bisector of a line segment is equidistant from its end points. Triangle of equal bases and of equal altitudes are equal in area.