P-208

Student Roll Number

Example Student Roll No. 1 3 5 2 4 6

Sign. and Seal of Supdtt.

Paper: MATHEMATICS
Part: 9th
Time: 20 Minutes
Marks: 15
Exam Code: 9171

NOTE
FILL IN THE CORRECT CIRCLE ONLY

1. If $x = -3$ and $y = 2$, then $7 - xy =$ ..... A) 1, B) 13, C) 7, D) -6, ... ● Ⓑ Ⓒ Ⓓ

2. LCM = ... A) $\frac{HCF}{A \times B}$, B) $\frac{A \times B}{HCF}$, C) $\frac{A}{HCF}$, D) $\frac{B}{HCF}$, ... Ⓐ ● Ⓒ Ⓓ

3. $\sqrt{x+3} + 2 = 11$ is a ..... equation. A) linear, B) radical, C) cubic, D) quadratic, ... Ⓐ ● Ⓒ Ⓓ

4. The lines represented by the equations $x + y = 3$ and $x + y = 2$ are .....
A) parallel, B) perpendicular, C) intersecting, D) inclined, ... ● Ⓑ Ⓒ Ⓓ

5. Let $P_1(2,0)$ and $P_2(0,2)$ are any two points in a plane, then $|P_1P_2| =$ .....
A) 4, B) $\sqrt{2}$, C) $2\sqrt{2}$, D) zero, ... Ⓐ Ⓑ ● Ⓓ

6. ..... of a parallelogram are congruent.
A) adjacent sides, B) opposite sides, C) all sides, D) all angles, ... Ⓐ ● Ⓒ Ⓓ

7. In a ΔABC, $m\angle A = 50°$ and $m\angle B = 30°$ which of the following is correct?
A) $m\overline{BC} > m\overline{AB}$, B) $m\overline{AB} > m\overline{CA}$, C) $m\overline{BC} < m\overline{CA}$, D) $m\overline{AB} < m\overline{CA}$, ... Ⓐ ● Ⓒ Ⓓ

8. Triangles are ..... A) equal in area, B) congruent, C) similar, D) concurrent, ... Ⓐ Ⓑ Ⓒ Ⓓ

9. If $A = \begin{bmatrix} 7 & 8 \\ 3 & 2 \end{bmatrix}$ then adj(A) = ... A) $\begin{bmatrix} 2 & -8 \\ -3 & 7 \end{bmatrix}$, B) $\begin{bmatrix} 2 & 8 \\ -3 & 7 \end{bmatrix}$, C) $\begin{bmatrix} 2 & -8 \\ 3 & 7 \end{bmatrix}$,
D) $\begin{vmatrix} 7 & -8 \\ 3 & 2 \end{vmatrix}$, ... ● Ⓑ Ⓒ Ⓓ

10. Quotient of two complex numbers is: A) real, B) imaginary, C) both A&B, D) none, ... Ⓐ Ⓑ ● Ⓓ

11. The simplified form of $(-a)^3 \times (-a)^5$ is ..... A) a^8, B) $-a^8$, C) $(-a)^8$, D) $(-a)^{15}$, ... ● Ⓑ Ⓒ Ⓓ

12. If $\log_6 x = 3$, then $x =$ ..... A) 36, B) 84, C) 216, D) 221, ... Ⓐ Ⓑ ● Ⓓ

13. Characteristic of 0.000045 is ..... A) -4, B) 5, C) -5, D) 4, ... Ⓐ Ⓑ ● Ⓓ

14. $(a+b+c)^2 =$ ..... A) $a^2+b^2+c^2$, B) $a^2+b^2+c^2+2(ab+bc+ca)$,
C) $a^2+b^2+c^2+2(a+b+c)$, D) $a^2+b^2+c^2-2(ab+bc+ca)$, ... Ⓐ ● Ⓒ Ⓓ

15. Conjugate of $(5+3\sqrt{7})$ is ..... A) $\frac{1}{5-3\sqrt{7}}$, B) $-5+3\sqrt{7}$, C) $5-3\sqrt{7}$,
D) $-5-3\sqrt{7}$, ... Ⓐ Ⓑ ● Ⓓ

9171

MATHEMATICS — 9th

Time: 2 Hours 40 Minutes

SECTION-B

Marks: 36

1. Attempt any nine of the following. All carry equal marks.

   i. If $C=\begin{bmatrix} a & b \\ c & d \end{bmatrix}$ then show that $C^t=C$

   ii. If $Z_1=6+3i$, $Z_2=2-7i$, then find: (i) Z_1+Z_2 (ii) Z_1-Z_2

   iii. If log 3=0.4771 and log 7=0.8450 then find log 21 without using logarithmic table.

   iv. Find the value of a^3-b^3 when $a-b=-1$ and $ab=6$

   v. Find the product of $(a-3)(a^2+3a+9)$

   vi. Factorize $2x^3-128$

   vii. By using remainder theorem, find the remainder when $(2x^3+4x^2+7x-5)$ is divided by $(x+3)$

   viii. Find the LCM of (x^3-8) and (x^2+x-6) by factorization method.

   ix. Simplify $\frac{x^2-x-6}{x^2+6x+9}+\frac{x^2-4}{x+3}$

   x. Solve the radical equation $15-\sqrt{x+2}=10$

   xi. Draw the graph of the equation $y=4$

   xii. Find the value of x^2+y^2 and xy when $x+y=8$ and $x-y=2$

SECTION-C

Marks: 24

NOTE: Attempt any three of the following questions. All questions carry equal marks.

2. Show that the point A(2,3), B(8,11), C(0,17) and D(−6,9) are the vertices of a square. Also verify that the diagonals of the square have equal lengths.

3. Prove that the line segment joining the mid points of two sides of a triangle is parallel to the third side and is equal to one half of its length.

4. Show that if a line segment intersects the two sides of a triangle in the same ratio, then it is parallel to the third side.

5. Construct ΔABC, when $m\overline{AB}=5.4cm$, $m\overline{BC}=6cm$ and $m\overline{CA}=5.4cm$. Also draw their angle bisectors and verify their concurrency.