Name - _____   Roll No- _____   Section- _____

This section has 20 Multiple Choice Questions (MCQs) carrying 1 mark each. $20 \times 1 = 20$

1. If $7\cos^2 \theta + 3\sin^2 \theta = 4$, then the value of θ is:
    (A) 30°   (B) 45°   (C) 60°   (D) 90°

2. The probability of drawing an even prime number out of numbers from 1 to 30 is:
    (A) $\frac{1}{30}$ (B) $\frac{4}{15}$ (C) $\frac{7}{30}$ (D) 0

3. The quadratic equation whose roots are 7 and $\frac{1}{7}$ is:
    (A) $7x^2 - 50x + 7 = 0$ (B) $7x^2 - 50x + 1 = 0$
    (C) $7x^2 + 50x - 7 = 0$ (D) $7x^2 + 50x - 1 = 0$

4. The least number which is a perfect square and is divisible by each of 16,20 and 50, is:
    (A) 1200   (B) 100   (C) 3600   (D) 2400

5. The coordinates of the end points of a diameter of a circle are (5, -2) and (5, 2). The length of the radius of the circle is:
    (A) ± 2 (B) ± 4 (C) 4   (D) 2

6. The points $(-5,0), (5,0)$ and $(0,4)$ are the vertices of a triangle which is a/an:
    (A) right-angled triangle   (B) isosceles triangle
    (C) equilateral triangle   (D) scalene triangle

7. In the given figure, RS is the tangent to the circle at the point L and MN is the diameter. If $\angle NML = 30°$, then $\angle RLM$ is:
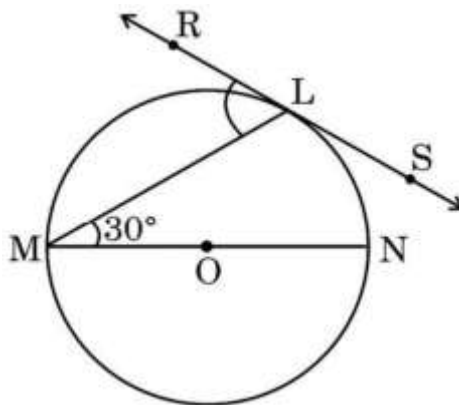
    (A) 30°   (B) 60°   (C) 90°   (D) 120°

8. In the given figure, PQ∥BC. If $\frac{AP}{PB} = \frac{4}{13}$ and $AC = 20 \cdot 4$ cm, then the length of AQ is:
    (A) $2 \cdot 8$ cm   (B) $5 \cdot 8$ cm   (C) 3.8 cm   (D) 4.8 cm

9. Which of the following statements is incorrect?
    (A) Two congruent figures are always similar.   (B) A square and a rhombus of the same area are always similar.
    (C) Two equilateral triangles are always similar.   (D) Two similar triangles need not be congruent.

10. The sum of the exponents of prime factors in the prime factorisation of 4004 is:
    (A) 5   (B) 4   (C) 3   (D) 2

11. In a cricket match, a batsman hits the boundary 7 times out of the 42 balls he plays. The probability of his not hitting a boundary is:

(A) $\frac{1}{7}$ (B) $\frac{2}{7}$ (C) $\frac{5}{6}$ (D) $\frac{1}{6}$

12. If a large circular pizza is divided into 5 equal sectors, then the central angle of each sector will be:

(A) 60° (B) 90° (C) 45° (D) 72°

13. If $\sin 30°\tan 45° = \frac{\sec 60°}{k}$, then the value of k is:

(A) 4 (B) 3 (C) 2 (D) 1

14. The line represented by the equation $x - y = 0$ is:

(A) parallel to x -axis
(B) parallel to y -axis
(C) passing through the origin
(D) passing through the point (3,2)

15. The 10th term of the AP $5, \frac{19}{4}, \frac{9}{2}, \frac{17}{4}, ...$ is:

(A) $\frac{11}{4}$ (B) $\frac{4}{11}$ (C) $\frac{13}{4}$ (D) $\frac{4}{13}$

16. If -4 is a zero of the polynomial $p(x) = x^2 - x - (2 + 2k)$, then the value of k is:

(A) 3 (B) 9 (C) 6 (D) -9

17. The equation of a line parallel to the x-axis and at a distance of 3 units below x -axis is:

(A) x = 3 (B) x = −3 (C) y = −3 (D) y = 3

18. The HCF of 40,110 and 360 is:

(A) 40 (B) 110 (C) 360 (D) 10

Questions number 19 and 20 are Assertion and Reason based questions.

(A) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of the Assertion (A).
(B) Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of the Assertion (A).
(C) Assertion (A) is true, but Reason (R) is false.
(D) Assertion (A) is false, but Reason (R) is true.

19. **Assertion (A):** Common difference of the AP: $5, 1, -3, -7, ...$ is 4.
Reason (R): Common difference of the AP: $a_1, a_2, a_3, ..., a_n$ is obtained by $d = a_n - a_{n-1}$.

20. **Assertion (A):** The pair of linear equations $px + 3y + 59 = 0$ and $2x + 6y + 118 = 0$ will have infinitely many solutions if $p = 1$.
Reason (R): If the pair of linear equations $px + 3y + 19 = 0$ and $2x + 6y + 157 = 0$ has a unique solution, then $p \neq 1$.