

(54) In a bag there are 44 identical cards with figure of circle or square on them. There are 24 circles of which 9 are blue and rest are green and 20 squares of which 11 are blue and rest are green one card is drawn from the bag at random. Find probability that it has the figure of.

- (i) Square Cards
- (ii) Green Colour Cards
- (iii) Blue Circle Cards
- (iv) Green Square Cards

PAPER-5

SECTION - A

► Do as directed. (Q. 1 to 24) [1 Marks Each] (24)

• Choose the correct option. (Q. 1 to 6)

- (1) H.C.F of $(2^3 \times 3^2 \times 5)$, $(2^2 \times 3^3 \times 5^2)$ and $(2^4 \times 3 \times 5^3 \times 7)$ is :
 - (A) 30
 - (B) 48
 - (C) 60
 - (D) 105
- (2) If α and β are the zero of $2x^2 + 5x - 8$, then the value of $\alpha\beta$ is _____.
 - (A) $-\frac{5}{2}$
 - (B) $\frac{5}{2}$
 - (C) $-\frac{8}{2}$
 - (D) $\frac{8}{2}$
- (3) The graphs of the equations $6x - 2y + 9 = 0$ and $3x - y + 12 = 0$ are the two lines which are :
 - (A) Coincident
 - (B) Parallel
 - (C) Intersecting exactly at one point
 - (D) perpendicular to each other
- (4) If $x=3$ is a solution of the equation $3x^2 + (k-1)x + 9 = 0$ then $k = ?$
 - (A) 11
 - (B) -11
 - (C) 13
 - (D) -13
- (5) The Common difference of the AP $\frac{1}{3}, \frac{1-3b}{3}, \frac{1-6b}{3}, \dots$ is :
 - (A) $\frac{1}{3}$
 - (B) $-\frac{1}{3}$
 - (C) b
 - (D) $-b$
- (6) If A(4, 2), B(6, 5) and C(1, 4) be the vertices of ΔABC and AD is a median, then the Coordinates of D are?
 - (A) $(\frac{5}{2}, 3)$
 - (B) $(5, \frac{7}{2})$
 - (C) $(\frac{7}{2}, \frac{9}{2})$
 - (D) (1, 2)

• Fill in the blanks. (Q. 7 to 12)

- (7) ΔABC is an isosceles triangle with $AB=AC=13$ cm and the length of altitude from A on BC is 5 cm. Then, BC is _____ cm. (16, 18, 24)
- (8) PQ is a tangent to a circle with centre O at the point P. If ΔOPQ is an isosceles triangle, then $\angle OQP$ is equal to _____. ($30^\circ, 45^\circ, 60^\circ$)
- (9) $\sin 60^\circ \cdot \cos 30^\circ + \sin 30^\circ \cdot \cos 60^\circ$ is _____. ($\sqrt{3}, 1, 2$)
- (10) The length of an arc of the sector of angle θ° of a circle with radius R is _____.
 $(\frac{\pi R^2 \theta}{360}, \frac{\pi R^2 \theta}{180}, \frac{2\pi R \theta}{360})$
- (11) Two right Circular cylinder of equal Volumes have their heights in the ratio 1 : 2 then the ratio of radii is _____. ($2 : 1, 1 : 2, \sqrt{2} : 1$)
- (12) The median of first 8 prime numbers is _____. (9, 11, 13)

• Write the statements true or false. (Q. 13 to 16)

- (13) Sign of two zeroes is negative of polynomial $x^2 + 99x + 127$
- (14) Point (8, -2) is of second quadrant.
- (15) The coordinates of origin is (0, 0).
- (16) The probability is 1 of the event "The sun rises in the East".

• Match the following. (Q. 17 to 20)

Match A with B for the zeroes of polynomial

$$P(x) = 2x^2 - 8x + 6$$

A	B
(17) $\frac{1}{\alpha} + \frac{1}{\beta}$	(a) 12
(18) $\alpha^2\beta + \alpha\beta^2$	(b) 3
	(c) $\frac{4}{3}$

A	B
(19) $\sin^2\theta$	(a) $-\cot^2\theta$
(20) $\cos^2\theta$	(b) $\frac{\sec^2\theta - 1}{\sec^2\theta}$
	(c) $\frac{\operatorname{cosec}^2\theta - 1}{\operatorname{cosec}^2\theta}$

Solve the following. (Q. 21 to 24)

(21) Express the following integers as a product of its prime factors : 7325

(22) If the equation $ax^2 + 2x + a = 0$ has two equal real roots then find the value of a .

(23) How many bricks, each measuring (25 cm × 11.25 cm × 6 cm), will be required to construct a wall (8m × 6m × 22.5 cm)

(24) If the mean and mode of a frequency distribution be 53.4 and 55.2. respectively find the median.