Q.1 y intercept of line passes through (2, 2) and is perpendicular to the line 3x + y = 3, is

(A) $\frac{1}{3}$ (B) $\frac{2}{3}$

(C) 1 (D) $\frac{4}{3}$

Q. 2 P and Q are points on the line joining A(– 2, 5) and B (3, 1) such that AP = PQ = QB. The mid point of PQ is

(A) (1/2, 3) (B) (–1/2, 4)

(C) (2, 3) (D) (1, 4)

Q.3 The straight line ax + by + c = 0 where abc ≠ 0 will pass through the first quadrant if -

(A) ac < 0, bc > 0

(B) ac > 0 and bc < 0

(C) bc > 0 and/or ac > 0

(D) ac < 0 and/or bc < 0

Q.4 If the algebraic sum of distances of points (2,1), (3,2) and (–4, 7) from the line y = mx + c is zero, then this line will always pass through a fixed point whose co-ordinate is -

(A) (1, 3) (B) (1, 10)

(C) (1, 6) (D) $\left(\frac{1}{3}, \frac{10}{3}\right)$

Q.5 If the point P(a, a^2) lies completely inside the triangle formed by the lines

x = 0, y = 0 and x + y = 2, then exhaustive range of 'a' is -

(A) a ∈ (0, 1)

(B) $a \in (1, \sqrt{2})$

(C) $a \in (\sqrt{2} - 1, \sqrt{2})$

(D) $a \in (\sqrt{2} - 1, 1)$

Q.6 Slope of line whose parametric equation is given by $x = -2 + \frac{r}{\sqrt{10}}$, $y = 1 + \frac{3r}{\sqrt{10}}$ is :

(A) –1 (B) 1

(C) $\frac{1}{3}$ (D) 3

Q.7 Nearest point on line $x - 3y = 5$ from point (1, 2) is :

(A) (2, –1) (B) $(3, -\frac{2}{3})$

(C) (0, 0) (D) (5, 0)

Q.8 If lines $ax + by + c = 0$, $bx + cy + a = 0$, $cx + ay + b = 0$ are concurrent then value of

$2^{\frac{a^2+b^2+c^2}{ab+bc+ca}}$ $\{a \neq b \neq c\}$

(A) 2 (B) 4 (C) $\frac{1}{4}$ (D) $\frac{1}{2}$

Q.9 A ray light passing through point A(–2, 3) & get reflected at point B on x-axis & then passes through point (3, 2) then equation of line AB ?

(A) $y - x = 5$ (B) $y = -x + 1$

(C) $x + y = 2$ (D) None of these

Q.10 The vertex of an equilateral triangle is (2, –1) and the equation of its base is $x + 2y = 1$. The length of its sides is :

(A) $\frac{4}{\sqrt{15}}$ (B) $\frac{2}{\sqrt{15}}$

(C) $\frac{4}{3\sqrt{3}}$ (D) $\frac{1}{\sqrt{5}}$

Q.11 If P is a point (x, y) on the line y = – 3x such that P & the point (3, 4) are on the opposite sides of the line 3x – 4y = 8; then :

(A) x > 8/15, y < – 8/5 (B) x > 8/5, y < – 8/15

(C) x = 8/15, y = – 8/5 (D) None of these

Q.12 If $4a^2 + 9b^2 - c^2 + 12ab = 0$, then the family of straight lines ax + by + c = 0 is concurrent at :

(A) (2, 3) or (–2, – 3) (B) (2, 3) or (2, – 3)

(C) (–2, 3) or (–2, –3) (D) (– 2, 3) or (2, – 3)

ANSWER KEY

Qus.	1	2	3	4	5	6	7	8	9	10	11	12
Ans.	D	A	D	D	A	D	A	C	B	B	A	A

Maths By AG Sir

DPP-19