**Level-2, TEST-**

Name: Mob No.

Rough Work

**1. The distance of the point $(3,5)$ from the line $2x+3y-14=0$ measured parallel to the line $x-2y$ is:**

(a)$\frac{7}{\sqrt{5}}$ (b) $\frac{7}{\sqrt{13}}$ (c) $\sqrt{5}$ (d) $\sqrt{13}$

**2. The lines $x\cos\alpha+y\sin\alpha=p_1$ and $x\cos\beta+y\sin\beta=p_2$ will be perpendicular, if**

(a) α+ β (b)|α- β|=π/2
(c)α=π/2 (d) $\alpha\pm\beta=\pi/2$

**3. If each of the points ($x_1$, 4), (-2,$y_1$) lies on the line joining the points (2,-1), (5,-3), then the point $P$ ($x_1$,$y_1$) lie on the line:**

(a) 6$(x+y)$-25=0 (b)2x+6y+1=0
(c) 2x+3y-6=0 (d)6$(x+y)$+25=0

**4. The equation of the straight line passing through the point $(4,3)$ and making intercepts on the coordinate are whose sum is -1 is:**

(a) $\frac{x}{2}+\frac{y}{3}=-1$ and $\frac{x}{-2}+\frac{y}{1}=-1$
(b) $\frac{x}{2}-\frac{y}{3}=-1$ and $\frac{x}{-2}+\frac{y}{1}=-1$
(c) $\frac{x}{2}+\frac{y}{3}=1$ and $\frac{x}{-2}+\frac{y}{1}=1$
(d) $\frac{x}{2}-\frac{y}{3}=-1$ and $\frac{x}{-2}+\frac{y}{1}=1$

**5. If the straight lines $ax+by+c=0$ and $x\cos\alpha+y\sin\alpha=c$ enclose an angle π/4 between them and meet the straight line x sin $\alpha-y\cos\alpha=0$ in the same point, then**

(a)$a^2+b^2=c^2$ (b) $a^2+b^2=2$
(c) $a^2+b^2=2c^2$ (d) $a^2+b^2=4$

**6. The angle between the lines $2x-y+3=0$ and $x+2y+3=0$ is:**

(a)30° (b)45° (c)60° (d)90°

**7. The inclination of the straight line passing through the point (-3,6) and the mid-point of the line joining the points (4,-5) and (-2,9) is:**

(a)π/4 (b)π/2 (c)3π/4 (d)π

**8. A square of side a lies above the X-axis and has one vertex at the origin. The side passing through the origin makes an angle π/6 with the positive direction of X-axis. The equation of its diagonal not passing through the origin is:**

(a)$y(\sqrt{3}-1)$-x $(1-\sqrt{3})$=2a
(b) $y(\sqrt{3}+1)$+x $(1-\sqrt{3})$=2a
(c) $y(\sqrt{3}+1)$+x $(1+\sqrt{3})$=2a
(d) $y(\sqrt{3}+1)$+x $(\sqrt{3}-1)$=2a

**9. A $(1,3)$ and $C$ $(7,5)$ are two opposite vertices of a square. The equation of side through $A$ is:**

(a)$x+2y-7=0$ (b)$x-2y+5=0$
(c)$2x+y-5=0$ (d)$2x-y+1=0$

**10. The equation of a straight line passing through the point $(-5,4)$ and which cuts off an intercept of $\sqrt{2}$ units between the lines $x+y+1=0$ and $x+y-1=0$ is:**

(a)$x-2y+13=0$ (b) $2x-y+14=0$
(c) $x-y+9=0$ (d) $x-y+10=0$

**11. Equation to the straight line cutting off an intercept 2 from negative direction on the axis of $y$ and inclined at 30° to the positive direction of axis of $x$ is:**

(a) $y+x-\sqrt{3}=0$ (b) $y-x+2=0$
(c) $y-x\sqrt{3}-2=0$ (d) $y\sqrt{3}-x+2\sqrt{3}=0$

**12. What is the value of $y$ so that the line through (3,$y$) and $(2,7)$ is parallel to the line through $(-1,4)$ and $(0,6)$?**

**13. A straight line is drawn through the point $P$ $(2,2)$ and is inclined at an angle of 30° with the X-axis. Find the coordinates of two points on it at a distance 4 from $P$ on either side of $P$.**

**14. If the straight line through the point $P$ $(3,4)$ makes an angle $\frac{\pi}{6}$ with X-axis and meets the line $12x+5y+10=0$ at $Q$, find the length of $PQ$.**

**15. Find the distance of the point $(2,3)$ from the line $2x-3y+9=0$ measured along the line $x-y+1=0$.**

**16. A line is such that its segment between the straight line $5x-y-4=0$ and $3x+4y-4=0$ is bisected at the point $(1,5)$. Obtain the equation.**

Rough Work

**17. The side $AB$ and $AC$ of a $\Delta ABC$ are respectively $2x + 3y = 29$ and $x + 2y = 16$. If the mid-point of $BC$ is $(5, 6)$, then find the equation of $BC$.**

**18. A straight line through $A\ (-15, -10)$ meets the lines $x - y - 1 = 0$, $x + 2y = 5$ and $x + 3y = 7$ respectively at $A, B$ and $C$. If $\frac{12}{AB} + \frac{40}{AB} = \frac{52}{AD}$, porve that the line passes through the origin.**