DPP
DAILY PRACTICE PROBLEMS

CLASS : XIth **SUBJECT : MATHS**
DATE : **DPP NO. : 2**

Topic :- CO-ORDINATE GEOMETRY

1. The x-coordinate of the incentre of the triangle where the mid points of the sides are $(0, 1)$, $(1, 1)$and $(1, 0)$ is
   a) $2 + \sqrt{2}$ b) $1 + \sqrt{2}$ c) $2 - \sqrt{2}$ d) $1 - \sqrt{2}$

2. Let $A(2, -3)$ and $B(-2, 1)$ be vertices of a triangleABC. If the centroid of this triangle moves on the line $2x + 3y = 1$, then the locus of the vertex C is the line
   a) $2x + 3y = 9$ b) $2x - 3y = 7$ c) $3x + 2y = 5$ d) $3x - 2y = 3$

3. The angle of elevation of the top of a tower at a point on the ground is 30°. If on walking 20 m toward the tower the angle of elevation becomes 60°, then the height of the tower is
   a) 10 m b) $\frac{10}{\sqrt{3}}$ m c) $10\sqrt{3}$ m d) None of these

4. In a ΔABC, if $2s = a + b + c$ and $(s - b)(s - c) = x \sin^2 \frac{A}{2}$, then the value of x is
   a) bc b) ca c) ab d) abc

5. If p_1, p_2 denote the length of the perpendiculars from the origin on the lines $x \sec\alpha + y \operatorname{cosec}\alpha = 2a$ and $x \cos\alpha + y \sin\alpha = a \cos 2\alpha$ respectively, then $\left(\frac{P_1}{P_2}, \frac{P_2}{P_1}\right)^2$ is equal to
   a) $4 \sin^2 4\alpha$ b) $4 \cos^2 4\alpha$ c) $4 \operatorname{cosec}^2 4\alpha$ d) $4 \sec^2 4\alpha$

6. The equation $\sqrt{(x-2)^2 + (y-1)^2} + \sqrt{(x+2)^2 + (y-4)^2} = 5$ represents
   a) Circle b) Ellipse c) Line segment d) None of these

7. The value of $\frac{1}{r_1^2} + \frac{1}{r_2^2} + \frac{1}{r_3^2} + \frac{1}{r^2}$ is
   a) 0 b) $\frac{a^2+b^2+c^2}{\Delta^2}$ c) $\frac{\Delta^2}{a^2+b^2+c^2}$ d) $\frac{a^2+b^2+c^2}{\Delta}$

8. The sides of a triangle are 4cm, 5cm and 6cm. the area of the triangle is equal to
   a) $\frac{15}{4}$ cm^2 b) $\frac{15}{4}\sqrt{7}$ cm^2 c) $\frac{4}{15}\sqrt{7}$ cm^2 d) None of these

9. A vertical lamp-post, 6 m high, stands at a distance of 2 m from a wall, 4 m high. A 1.5 m tall man starts to walk away from the wall on the other side of the wall, in line with the lamp-post the maximum distance to which the man can walk remaining in the shadow is
   a) $\frac{5}{2}$ m b) $\frac{3}{2}$ m c) 4 m d) None of these

10. A tower subtends an angle α at a point A in the plane of its base and the angle of depression of the foot of the tower at a point b feet just above A is β. Then, the height of the tower is
   a) $b \tan\alpha \cot\beta$ b) $b \cot\alpha \tan\beta$ c) $b \cot\alpha \cot\beta$ d) $b \tan\alpha \tan\beta$

11. In a ABC, if $b = 2, \angle B = 30°$, then the area of the circumcircle of $\Delta\, ABC$ in square unit is
a) π b) 2π c) 4π d) 6π

12. The base of a cliff is circular. From the extremities of a diameter of the base of angle of elevation of the top of the cliff are 30° and 60°. If the height of the cliff be 500 m, then the diameter of the base of the cliff is
a) $1000\sqrt{3}$ m b) $\frac{2000}{\sqrt{3}}$ m c) $\frac{1000}{\sqrt{3}}$ m d) $\frac{2000}{\sqrt{2}}$ m

13. If R denotes circumradius, then in $\Delta\, ABC, \frac{b^2-c^2}{2aR}$ is equal to
a) $\cos(B-C)$ b) $\sin(B-C)$ c) $\cos B - \cos C$ d) None of these

14. The area between the curve $y = 1 - |x|$ and the x-axis is equal to
a) 1 sq unit b) $\frac{1}{2}$ sq unit c) $\frac{1}{3}$ sq unit d) 2 sq units

15. Angles A, B and C of a triangle are in AP with common difference 15 degree, then angle A is equal to
a) 45° b) 60° c) 75° d) 30°

16. In a triangle $\left(1-\frac{r_1}{r_2}\right)\left(1-\frac{r_1}{r_3}\right) = 2$, then the triangle is
a) Right angled b) Equilateral c) Isosceles d) None of these

17. The angle of elevation of the sun, if the length of the shadow of a tower is $\sqrt{3}$ times the height of the pole, is
a) 150°b) 30°c) 60°d) 45°

18. If the equation $2x^2 + y^2 - 4x - 4y = 0$ is transformed to the equation $2X^2 + Y^2 - 8X - 8Y + 18 = 0$ by shifting the origin at a point P without rotating the coordinates axes, then the coordinates of P are
a) $(1, 2)$ b) $(1, -2)$ c) $(-1, 2)$ d) $(-1, -2)$

19. A vertical pole PS has two marks Q and R such that the portions PQ, PR and PS subtend angles α, β, γ at a point on the ground distance x from the pole. If $PQ = a, PR = b, PS = c$ and $\alpha + \beta + \gamma = 180°$ then x^2 is equal to
a) $\frac{a}{a+b+c}$ b) $\frac{b}{a+b+c}$ c) $\frac{c}{a+b+c}$ d) $\frac{abc}{a+b+c}$

20. If in a $\Delta\, ABC, (s-a)(s-b) = s(s-c)$, then angle C is equal to
a) 90° b) 45° c) 30° d) 75°