Answer all the questions. Each question carries **one mark.**

1. Given that HCF (96,404) is 4, then the LCM (96,404) is…………………………………

2. If $x = 2\sin^2\theta$ and $y = 2\cos^2\theta + 1$, then $x + y =$ ……………………………

3. If a and b are co-prime numbers, then the HCF (a, b) is…………………………………

4. In the given fig. DE || BC, $\angle ADE = 70^o$

   and $\angle BAC = 50^o$, then angle $\angle BCA =$ ……………degrees.
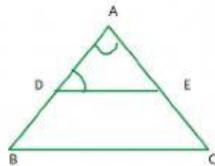
5. A tower stands vertically on the ground. From a point on the ground, which is 15m away from the foot of the tower, the angle of elevation of the top of the tower is found to be 60°.Then the height of the tower is $k\sqrt{3}\, m$, then k=……………………..

6. The decimal representation of $\dfrac{14587}{2^1 \times 5^4}$ will terminate after …………………number of decimal places.

7. If the sum of the zeroes of the quadratic polynomial $3x^2 -kx+6$ is 3, then the value of k is………………..

8. In an Arithmetic Progression, if d= - 4, n=7, a_n=4, then a=……………..

9. If two tangents are inclined at 60˚ are drawn to a circle of radius 3cm then the length of each tangent is $a\sqrt{a}$ cm, then a=……………………

10. In the ΔABC, D and E are points on side AB and AC respectively such that DE II BC. If AE=2cm, AD=3cm and BD=4.5cm, then CE=……………………..

11. For what values of p does the pair of equations 4x + p y +8 =0 and 2x +2y +2 =0 has unique solution?

    a) For all values of p

    b) P=4

    c) no value of p

    d) $p \neq 4$

12. The quadratic polynomial, sum of whose zeroes is 2 and product is -8 is

    a) $x^2 + 2x - 8$

    b) $x^2 - 2x + 8$

    c) $x^2 - 2x - 8$

    d) $x^2 + 2x + 8$

13. $Sin A + Cos B = 1$, $A = 30°$ and B is an acute angle, then the value of B is—

    a) 30°

    b) 60°

    c) 90°

    d) 45°

14. PQ is a tangent to a circle with centre O at point P. If ΔOPQ is an isosceles triangle, then ∠OQP is

    a) 30°

    b) 60°

    c) 90°

    d) 45°

15. How many two digit numbers are divisible by 3?

    a) 29

    b) 30

    c) 31

    d) 28

16. The point on x-axis which is equidistant from (2, -5) and (-2, 9) is

    a) (7, 0)

    b) (0, -7)

    c) (-7, 0)

    d) (0, 7)

17. The condition for the system of linear equations $a_1x+b_1y+c_1=0$ and $a_2x+b_2y+c_2=0$ having no solution is

    a) $\frac{a_1}{a_2} = \frac{b_1}{b_2} = \frac{c_1}{c_2}$

    b) $\frac{a_1}{a_2} \neq \frac{b_1}{b_2} = \frac{c_1}{c_2}$

    c) $\frac{a_1}{a_2} = \frac{b_1}{b_2} \neq \frac{c_1}{c_2}$

    d) $\frac{a_1}{a_2} \neq \frac{b_1}{b_2}$

18. If $\cos(A - B) = \frac{\sqrt{3}}{2}$, $\sin(A + B) = 1$, $0° < A + B \leq 90°, A > B$, then B=

    a) 45°

    b) 15°

    c) 60°

    d) 30°

19. $\frac{2\tan 30°}{1 + \tan^2 30°} =$

    a) Sin60°

    b) cos60°

    c) tan60°

    d) sin30°

20. The distance of origin O (0, 0) from the point P (a, -b) is

    a) $a^2 + b^2$

    b) $a^2 - b^2$

    c) $\sqrt{a^2 - b^2}$

    d) $\sqrt{a^2 + b^2}$