KENDRIYA VIDYALAYA -MISSAMARI

HALF YEARLY EXAMINATION-2020-21

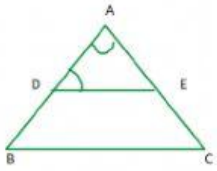
MATHEMATICS- CLASS: X(SYLLABUS: 1 TO 8 CHAPTERS)

TEACHER: RAVI KUMAR KOLLI, PGT-MATHEMATICS

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 $\frac{14587}{2^1 \times 5^4}$ 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
c) no value of p
b) P=4
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 $\cos(A-B)=\frac{\sqrt{3}}{2}$, $\sin(A+B)=1$, $0^o < A+B \leq 90^o$, $A > B$, then B=

a) 45° b) 15° c) 60° d) 30°

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

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