MOTHER INDIA HIGHER SECONDARY SCHOOL
VALACHERY
ONLINE TEST - 1

the option code and the corresponding answer

1. The range of the relation R = {(x,x²) / x is a prime number less than 13} is
   a) {2,3,5,7}
   b) {2,3,5,7,11}
   c) {4,9,25,49,121}
   d) {1,4,9,25,49,121}

2. If $f(x) = 2x^2$ and $g(x) = \frac{1}{3x}$, then fog is
   a) $\frac{3}{2x^2}$
   b) $\frac{2}{3x^2}$
   c) $\frac{2}{9x^2}$
   d) $\frac{1}{6x^2}$

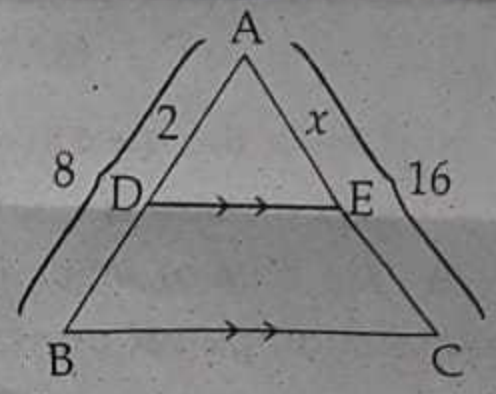
3. If the HCF of 65 and 117 is expressible in the form of 65m – 117, then the value of m is
   a) 4
   b) 2
   c) 1
   d) 3

4. If the sequence $t_1, t_2, t_3, \ldots$ are in A.P then the sequence $t_6, t_{12}, t_{18}, \ldots$ is
   a) a geometric progression
   b) an arithmetic progression
   c) neither an arithmetic progression nor a geometric progression
   d) a constant sequence

5. $\frac{x}{x^2-25} - \frac{8}{x^2+6x+5}$ gives
   a) $\frac{x^2-7x+40}{(x^2-25)(x+1)}$
   b) $\frac{x^2+7x+40}{(x-5)(x+5)(x+1)}$
   c) $\frac{x^2-7x+40}{(x^2-25)(x+1)}$
   d) $\frac{x^2+10}{(x^2-25)(x+1)}$

6. Find the matrix X if $2X + \begin{bmatrix} 1 & 3 \\ 5 & 7 \end{bmatrix} = \begin{bmatrix} 5 & 7 \\ 9 & 5 \end{bmatrix}$
   a) $\begin{bmatrix} -2 & -2 \\ 2 & -1 \end{bmatrix}$
   b) $\begin{bmatrix} 2 & 2 \\ 2 & -1 \end{bmatrix}$
   c) $\begin{bmatrix} 1 & 2 \\ 2 & 2 \end{bmatrix}$
   d) $\begin{bmatrix} 2 & 1 \\ 2 & 2 \end{bmatrix}$

7. In the given figure, the value of x is



a) 2 b) 8
c) 4 d) 12

8. The area of triangle formed by the points (–5,0), (0,–5) and (5,0) is

a) 0 sq.units b) 25 sq.units c) 5 sq.units d) none of these

9. (2,1) is the point of intersection of two lines

a) $x - y - 3 = 0$; $3x - y - 7 = 0$ b) $x + y = 3$; $3x + y = 7$
c) $3x + y = 3$; $x + y = 7$ d) $x + 3y - 3 = 0$; $x - y - 7 = 0$

10. $\cos 60^\circ \sin 30^\circ + \cos 30^\circ \sin 60^\circ =$

a) 90° b) $\frac{1}{2}$ b) $\frac{\sqrt{3}}{2}$ d) 1

11. The height of a right circular cone whose radius is 3 cm and slant height is 5 cm will be

a) 12 cm b) 4 cm c) 13 cm d) 5 cm

12. The total surface area of a hemisphere is how much times the square of its radius?

a) π b) 4π c) 3π d) 2π

13. The standard deviation of a data is 5. If each value is multiplied by 2, then the new variance is

a) 3 b) 100 c) 10 d) 225

14. A page is selected at random from a book. The probability that the digit at units place of the page number chosen is less than 7 is

a) $\frac{3}{10}$ b) $\frac{7}{10}$ c) $\frac{3}{9}$ d) $\frac{7}{9}$