ST. LAWRENCE HIGH SCHOOL

A JESUIT CHRISTIAN MINORITY INSTITUTION

FOR GOD AND COUNTRY

Solution of Worksheet-24

SUBJECT – MATHEMATICS

2nd-term

Chapter: Calculus **Class: XII**

Topic : Definite integral as an area **Date: 09.11.2020**

Choose the correct option (1 X 15= 15)

1. The area bounded by the straight lines $5x = 4y$, $x = 4$ and x-axis (in square unit) is –
   a) 16
   b) 8
   c) 4
   d) 10

2. The area bounded by the curve $y^2 = 4x$, & $x = 4$ and x-axis (in square unit) is –
   a) 7
   b) 32
   c) $\frac{32}{3}$
   d) $\frac{32}{9}$

3. The area bounded by the curve $y = cos\, x$, x-axis and the two ordinates $x = 0$ & $x = 2\pi$ (in square unit) is –
   a) 4
   b) -4
   c) 2
   d) -2

4. The area bounded by the curve $y = sin\, x$, $y = cos\, x$, x-axis and the two ordinates $x = 0$ & $x = \frac{\pi}{2}$ (in square unit) is –
   a) 16
   b) 4
   c) 6
   d) None of these.

5. The area bounded by the straight lines $x + 2y = 8$, x = 2 , x = 4 (in square unit) is –
   a) 2
   b) 3
   c) 4
   d) 5

6. The area bounded by the curve $x^2 = y$, the straight line y = 4 and y-axis (in square unit) is–
   a) 8
   b) 9
   c) 11
   d) None of these.

7. The area above the x-axis bounded by the straight lines $y = 2x + 1, y = 0, x = 2, x = 4$ (in square unit) is –
   a) 28
   b) 32
   c) 30
   d) 14

8. The area bounded by the curve $y^2 = 16x$, the straight lines x = 4 (in square unit) is–
   a) 128
   b) 120
   c) 40
   d) $\frac{128}{3}$

9. The area (in square unit) bounded by x-axis and one arc of the sine curve $y = \sin x$ between (0,0) and $(\pi, 0)$ is –
   a) 1
   b) 2
   c) 3
   d) 4

10. The area (in square unit) bounded by x-axis and one arc of the cosine curve $y = \cos x$ between $(\frac{\pi}{2},0)$ and $(\frac{3\pi}{2}, 0)$ is –
   a) 2
   b) 3
   c) 4
   d) 5

11. Find the area(in square unit) in the second quadrant bounded by the curve $y = x^3 + 8$ and the co-ordinate axes –
   a) 10
   b) 11
   c) 12
   d) 13

12. The area bounded by the straight lines $x + 2y = 6, x = 0, x = y$ (in square unit) is –
   a) 1
   b) 2
   c) 3
   d) 4

13. The area bounded by the straight lines $2x + y = 6, y = 0, y = 4x$ (in square unit) is –
   a) 6
   b) 8
   c) 10
   d) 13

14. Find the area (in square unit) of the triangle PQR whose vertices are P(2 , 1) ; Q(3 , 4) ; R(5 , 2) –
   a) 4
   b) 6
   c) 8
   d) 9

15. Find the area (in square unit) enclosed by $x^2 = 4ay$, $y^2 = 4ax$ –
   a) πa^2
   b) π^3
   c) $\frac{16}{3}a^4$
   d) $\frac{16}{3}a^2$

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