

### **ST. LAWRENCE HIGH SCHOOL** A JESUIT CHRISTIAN MINORITY INSTITUTION



#### **Solution of Worksheet-23**

**SUBJECT – MATHEMATICS** 

2nd-term

**Chapter: Calculus** 

Class: XII

**Topic : Definite integral as an area** 

Date: 07.11.2020

(1 X 15 = 15)

## Choose the correct option

- 1. The area bounded by the straight lines 2x = 3y, x = 3, x = 5 and x-axis (in square unit) is a) 16
  - b) 8
  - c) 4
  - d)  $\frac{16}{3}$
- 2. The area bounded by the curve  $2y^2 = 3x$ , & y = 1, y = 4 and y-axis (in square unit) is a) 7
  - b) 14
  - c)  $\frac{64}{9}$ d)  $\frac{110}{9}$
- 3. The area bounded by the curve  $y = \cos x$ , x-axis and the two ordinates  $x = -\frac{\pi}{2}$  &  $x = \frac{\pi}{2}$ (in square unit) is
  - a) 2
  - b) -2
  - c) 1
  - d) -1
- 4. The area bounded by the curve  $y = \sin x$ , x-axis and the two ordinates  $x = \pi$  &  $x = 2\pi$ (in square unit) is
  - a) 1
  - b) -1
  - c) -2
  - d) 2
- 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  $y^2 = x$ , the straight line y = 3 and y-axis (in square unit) is
  - a) 8
  - b) 9
  - c) 11
  - d) 12
- 7. The area above the x-axis bounded by the straight lines x 2y + 4 = 0, x = 3, x = 6 (in square unit) is
  - a) 51
  - b) 32
  - c) 30
  - d) None of these.
- 8. The area bounded by the curve  $y^2 = x$ , the straight lines x = 1 & x = 9 and x-axis (in square unit) is
  - a) 51
  - b) 52
  - c) 53
  - d) None of these.
- 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 fourth 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 3x - 2y = 6, y = 0, x = 4 (in square unit) is –

- a) 1
- b) 2
- c) 3
- d) 4

13. The area bounded by the straight lines 4x - y = 3, x = 1, y = 0, x = 3 (in square unit) is -

- a) 10
- b) 11
- c) 12
- d) 13

14. Find the area (in square unit) enclosed by  $x = a \cos \theta$ ,  $y = a \sin \theta$  –

- a)  $\pi a^2$
- b)  $\pi a^{3}$
- c)  $\pi a^4$
- d) *πa*

15. Find the area (in square unit) enclosed by  $x = a \cos \theta$ ,  $y = b \sin \theta$  –

- a) *πa*
- b) *πb*
- c)  $\pi ba^4$
- **d)** *πab*

# **Prepared by :-**

# Mr. SUKUMAR MANDAL (SkM).