



Solutions of Worksheet-15

SUBJECT – MATHEMATICS

Pre-test

Chapter: Integration

Class: XII

Topic: Definite integration

Date: 25.07.2020

Choose the correct option

(1 X 15= 15)

1. The value of $\int_2^3 \frac{x+1}{x^2(x-1)} dx$ is

(A) $2 \log 2 - \frac{1}{6}$

(B) $\log \frac{16}{9} - \frac{1}{6}$

(C) $\log \frac{4}{3} - \frac{1}{6}$

(D) $\log \frac{16}{9} + \frac{1}{6}$

Ans. (B)

2. The value of $\int_1^e \log x dx$ is

(A) 0

(B) 1

(C) $e-1$

(D) $e+1$

Ans. (B)

3. The value of $I = \int_0^{\pi/2} \frac{(\sin x + \cos x)^2}{\sqrt{1+\sin 2x}} dx$ is

(A) 3

(B) 1

(C) 2

(D) 0

Ans. (C)

4. $\int_0^{\pi/8} \cos^3 4\theta d\theta =$

(A) $\frac{2}{3}$

(B) $\frac{1}{4}$

(C) $\frac{1}{3}$

(D) $\frac{1}{6}$

Ans. (D)

5. $\int_3^8 \frac{2-3x}{x\sqrt{(1+x)}} dx$ is equal to

(A) $2 \log(3/2e^3)$

(B) $\log(3/e^3)$

(C) $4 \log(3/e^3)$

(D) None of these

Ans. (A)

6. The value of $\int_0^1 x^2 e^x dx$ is equal to

(A) $e-2$

(B) $e+2$

(C) e^2-2

(D) e^2

Ans. (A)

7. Let $I_1 = \int_1^2 \frac{dx}{\sqrt{1+x^2}}$ and $I_2 = \int_1^2 \frac{dx}{x}$. Then

(A) $I_1 > I_2$

(B) $I_2 > I_1$

(C) $I_1 = I_2$

(D) $I_1 > 2I_2$

Ans. (B)

8. The value of $\int_{1/e}^{\tan x} \frac{t dt}{1+t^2} + \int_{1/e}^{\cot x} \frac{dt}{t(1+t^2)} =$

(A) -1

(B) 1

(C) 0

(D) None of these

Ans. (B)

9. $\int_{\pi/4}^{3\pi/4} \frac{dx}{1+\cos x}$ is equal to

(A) 2

(B) -2

(C) $\frac{1}{2}$

(D) $-\frac{1}{2}$

Ans. (A)

10. The value of $\int_1^{e^2} \frac{dx}{x(1+\ln x)^2}$ is

(A) $2/3$

(B) $1/3$

(C) $3/2$

(D) $\ln 2$

Ans. (A)

11. $\int_2^5 \sqrt{(5-x)(x-2)} dx = ?$

- (A) $\frac{9\pi}{7}$
(B) $\frac{9\pi}{8}$
(C) $\frac{9\pi}{5}$
(D) **None of these.**

Ans. (B)

12. $\int_2^5 \frac{dx}{\sqrt{6x-x^2-5}} = ?$

Ans. (C)

- (A) $\frac{\pi}{4}$ (B) $\frac{\pi}{3}$ (C) $\frac{\pi}{6}$ (D) **None of these**

13. $\int_0^\pi \sin^3 x \cos^3 x dx = ?$

Ans. (B)

- (A) $\frac{\pi}{4}$ (B) **0** (C) $\frac{\pi}{6}$ (D) **None of these**

14. $\int_0^\pi \sqrt{1 + \sin x} dx = ?$

Ans. (C)

- (A) $\frac{\pi}{4}$ (B) **0** (C) **4** (D) **None of these**

15. $\int_0^\pi \sin 3x \sin 5x dx = ?$

Ans. (B)

- (A) $\frac{\pi}{4}$ (B) **0** (C) **1** (D) **None of these**

Prepared by :-
SUKUMAR MANDAL (SkM).