

INTERNATIONAL INDIAN SCHOOL BURAIADAH

WORK SHEET-2025-26

SUBJECT: MATHS

Chapter :7-part-2 Integrals definite)

MCQ:

1- $\int_{-\frac{\pi}{4}}^{\frac{\pi}{4}} \sec^2 x \, dx$
(a) -1

(b) 0

(c) 1

(d) 2

2 - $\int_0^{\frac{\pi}{8}} \tan^2 x \, dx$ is equal to
(a) $\frac{4-\pi}{8}$

(b) $\frac{4+\pi}{8}$

(c) $\frac{4-\pi}{4}$

(d) $\frac{4-\pi}{2}$

3- $\int_0^1 \frac{e^t}{1+t} dt = a$ then $\int_0^1 \frac{e^t}{(1+t)^2} dt$ is equal to
(a) $a - 1 + \frac{e}{2}$

(b) $a + 1 + \frac{e}{2}$

(c) $a - 1 - \frac{e}{2}$

(d) $a + 1 + \frac{e}{2}$

4- $\int_2^3 \frac{x}{x^2+1} dx$ is equal to
(a) $\log 4$

(b) $\log \frac{3}{2}$

(c) $\frac{1}{2} \log 2$

(d) $\log \frac{9}{4}$

5- $\int_0^2 \sqrt{4-x^2} \, dx$ equals
(a) $2\log 2$

(b) $-2\log 2$

(c) $\frac{\pi}{2}$

(d) π

6- $\int_0^{\frac{\pi}{6}} \sec^2(x - \frac{\pi}{6}) \, dx$ is equal to
(a) $\frac{1}{\sqrt{3}}$

(b) $-\frac{1}{\sqrt{3}}$

(c) $\sqrt{3}$

(d) $-\sqrt{3}$

7- $\int_{-1}^1 \frac{|x-2|}{x-2} \, dx$
(a) 1

(b) -1

(c) 2

(d) -2

Subjective:

1-Evaluate $\int_0^{\frac{\pi}{2}} e^x \sin x \, dx$

2- Evaluate $\int_{\log \sqrt{2}}^{\log \sqrt{3}} \frac{1}{(e^x + e^{-x})(e^x - e^{-x})} \, dx$

3--Evaluate $\int_{-\frac{\pi}{2}}^{\frac{\pi}{2}} \frac{\sin^{100} x}{\sin^{100} x + \cos^{100} x} \, dx$

4- Evaluate $\int_0^1 x \log(1+2x) \, dx$

5-Evaluate $\int_0^{\frac{\pi}{4}} \frac{dx}{\cos^3 x \sqrt{2\sin 2x}}$

6- Evaluate $\int_{\frac{\pi}{6}}^{\frac{\pi}{3}} \frac{dx}{1 + \sqrt{\tan x}} dx$

7- Evaluate $\int_1^3 [|x - 1| + |x - 2| + |x - 3|] dx$

8- Evaluate $\int_0^{\pi} \frac{x \tan x}{\sec x \operatorname{cosec} x} dx$

9 - Evaluate $\int_0^1 \cot^{-1}(1 - x + x^2) dx$

10-- Evaluate $\int_0^{\pi} \frac{x \tan x}{\sec x + \tan x} dx$

11- Evaluate $\int_0^{\pi} \frac{x}{1 + \sin x} dx$

12- Evaluate $\int_0^{\frac{\pi}{4}} \frac{\sin x + \cos x}{16 + 9\sin 2x} dx$

13- Evaluate $\int_0^{\pi} \frac{x}{a^2 \cos^2 x + b^2 \sin^2 x} dx$

14- - Evaluate $\int_0^4 [|x| + |x - 2| + |x - 4|] dx$

15- Evaluate $\int_0^{\frac{\pi}{2}} \log \sin x dx$