

INTERNATIONAL INDIAN SCHOOL BURAIADAH

WORK SHEET-2025-26

SUBJECT: MATHS

Chapter :7-part-1 Integrals (Indefinite)

MCQ:

1- $\int x^2 e^{x^3} dx$

(a) $\frac{1}{3}e^{x^3} + C$ (b) $\frac{1}{3}e^{x^4} + C$ (c) $\frac{1}{2}e^{x^3} + C$ (d) $\frac{1}{2}e^2 + C$

2- $\int \frac{e^x(1+x)}{\cos^2(xe^x)} dx$ is equal to

(a) $\tan(xe^x) + C$ (b) $\cot(xe^x) + C$ (c) $\cot(e^x) + C$ (d) $\tan[e^x(1+x)] + C$

3- $\int \frac{dx}{\sin^2 x \cos^2 x}$ is equal to

(a) $\tan x + \cot x + C$ (b) $(\tan x + \cot x)^2 + C$ (c) $\tan x - \cot x + C$ (d) $(\tan x - \cot x)^2 + C$

4- $\int \frac{dx}{\sin(x-a)\sin(x-b)}$ is equal to

(a) $\sin(b-a) \log \frac{\sin(x-b)}{\sin(x-a)} + C$ (b) $\operatorname{Cosec}(b-a) \log \frac{\sin(x-a)}{\sin(x-b)} + C$ (c) $\sin(b-a) \log \frac{\sin(x-a)}{\sin(x-b)} + C$ (d) $\operatorname{Cosec}(b-a) \log \frac{\sin(x-b)}{\sin(x-a)} + C$

5- $\int \tan^{-1} \sqrt{x} dx$ is equal

(a) $(x+1) \tan^{-1} \sqrt{x} - \sqrt{x} + C$ (b) $x \tan^{-1} \sqrt{x} - \sqrt{x} + C$ (c) $\sqrt{x} - x \tan^{-1} \sqrt{x} + C$ (d) $\sqrt{x} - (x+1) \tan^{-1} \sqrt{x} + C$

6- $\int \frac{x^9}{(4x^2+1)^6} dx$ is equal to

(a) $\frac{1}{5x} (4 + \frac{1}{x^2})^{-5} + C$ (b) $\frac{1}{5} (4 + \frac{1}{x^2})^{-5} + C$ (c) $\frac{1}{10x} (5)^{-5} + C$ (d) $\frac{1}{10} (4 + \frac{1}{x^2})^{-5} + C$

7- If $\frac{d}{dx}[f(x)] = ax + b$ and $f(0) = 0$, then $f(x)$ is equal to

(a) $a+b$ (b) $\frac{ax^2}{2} + bx + c$ (c) $\frac{ax^2}{2} + bx$ (d) b

8- Anti derivative of $\frac{\tan x - 1}{\tan x + 1}$ with respect to x is

(a) $\sec^2(\frac{\pi}{4} - x) + C$ (b) $-\sec^2(\frac{\pi}{4} - x) + C$ (c) $\log \sec(\frac{\pi}{4} - x) + C$ (d) $-\log \sec(\frac{\pi}{4} - x) + C$

9- $\int \frac{\sec x}{\sec x - \tan x} dx$ equals

(a) $\sec x - \tan x + C$ (b) $\sec x + \tan x + C$ (c) $-(\sec x + \tan x) + C$ (d) $\tan x - \sec x + C$

Subjective:

1- Find $\int \frac{x-1}{(x-2)(x-3)} dx$

2- Find $\int \frac{dx}{\sqrt{5-4x-2x^2}}$

3- Find $\int e^x \frac{\sqrt{1+\sin 2x}}{1+\cos 2x} dx$

4-Find $\int \frac{x^4}{(x-1)(x^2+1)} dx$

5-Find $\int \frac{1}{\sqrt{x}(\sqrt{x}+1)(\sqrt{x}+2)} dx$

6-Find $\int \frac{dx}{\cos(x-a)\cos(x-b)}$

7-Find $\int \frac{\cos x}{\sin 3x} dx$

8 -Find $\int \frac{e^x}{\sqrt{5-4e^x-e^{2x}}} dx$

9-Find $\int \sin x \sin 2x \sin 3x dx$

10-Find $\int \frac{\sin(x-a)}{\sin(x+a)} dx$

11-Evaluate : $\int \frac{\sin^6 x + \cos^6 x}{\sin^2 x \cos^2 x} dx$

12-Find: $\int \frac{x^2}{x^4-x^2-12} dx$

13- Find: $\int \frac{x^3+x+1}{x^2-1} dx$

14-Find: $\int \frac{(x^2+1)(x^2+2)}{(x^2+3)(x^2+4)} dx$

15- Find $\int \frac{x+3}{\sqrt{5-4x-x^2}} dx$

16- Find: $\int \frac{x+2}{2x^2+6x+5} dx$

17- Find $\int \frac{dx}{\sqrt{5x^2-2x}}$

18- Find $\int \sqrt{\frac{1-\sqrt{x}}{1+\sqrt{x}}} dx$

19-Find $\int \tan^{-1} \sqrt{\frac{1-x}{1+x}} dx$

20-Find $\int \frac{x^2+x+1}{(x+1)^2(x+2)} dx$