CHAPTER 7-INDEFINITE INTEGRAL
WORKSHEET-1(BASIC)

VERY SHORT ANSWER QUESTIONS:-

CHOOSE THE CORRECT OPTION:-

1. $\int \frac{\cos 2x - \cos 2\theta}{\cos x - \cos \theta} dx$ is equal to

   a) $2(\sin x + x\cos\theta) + c$ b) $2(\sin x - x\cos\theta) + c$

   c) $2(\sin x + 2x\cos\theta) + c$ d) $2(\sin x - 2x\cos\theta) + c$

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

   a) $\tan x + \cot x + c$ b) $\tan x - \cot x + c$

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

3. $\int \frac{\sin^{10} x}{\cos^{12} x} dx$ =

   a) $10\tan^9 x + c$ b) $\frac{\tan^{11} x}{11} + c$

   c) $\frac{\tan 11x}{11} + c$ d) none of these

4. $\int e^x (\cot x + \log \sin x) dx$ is equal to

   a) $e^x \cot x + c$ b) $e^x \log \sin x + c$

   c) $-e^x \cot x + c$ d) $e^x \log \cos x + c$

5. $\int \frac{e^{6\log x} - e^{5\log x}}{e^{4\log x} - e^{3\log x}} dx$ is equal to

   a) $\frac{x^6}{6} + c$ b) $\frac{x^6}{6} + c$

c) $\frac{x^6}{6}+c$

d) $\frac{x^6}{6}+c$

6. $\int \frac{dx}{e^x+e^{-x}}$ is equal to

a) $\tan^{-1}\left(e^x\right)+c$

b) $\tan^{-1}\left(e^{-x}\right)+c$

c) $\cot^{-1}\left(e^x\right)+c$

d) $\cot^{-1}\left(e^{-x}\right)+c$

7. $\int \frac{e^x(1+x)}{\cos^2\left(xe^x\right)}dx$ =

a) $2\cos\left(xe^x\right)+c$

b) $\sec\left(xe^x\right)+c$

c) $\tan\left(xe^x\right)+c$

d) $\tan\left(x+e^x\right)+c$

8.If $\int x\sin x dx = -x\cos x+\alpha$ then α is equal to

a) $\sin x+c$

b) $\cos x+c$

c) c

d) none of these

9.If $\int \frac{1+\cos 8x}{\tan 2x-\cot 2x}dx = a\cos 8x+c$ then a =

a) $\frac{-1}{16}$

b) $\frac{-1}{8}$

c) $\frac{1}{16}$

d) $\frac{-1}{8}$

10. $\int e^x\left(\frac{1-\sin x}{1-\cos x}\right)dx$ =

a) $e^x\cot\frac{x}{2}+c$

b) $-e^x\cot\frac{x}{2}+c$

c) $e^x\tan\frac{x}{2}+c$

d) $-e^x\tan\frac{x}{2}+c$

FILL IN THE BLANKS :-

11. $\int \operatorname{cosec}^2(7-3x)dx$ = ----------

12. $\int \frac{dx}{\sqrt{2x+5}-\sqrt{2x-3}} =$ ----------

13. $\int \frac{\cos(x-a)}{\cos x} dx =$ ----------

14. $\int \sin 3x \sin 5x dx =$ ----------

15. $\frac{1-\tan x}{1+\tan x} dx =$ ----------

ANSWER THE FOLLOWING :-

16. Evaluate $\int \frac{e^{4x}-1}{e^{4x}+1} dx$.

17. Evaluate $\int \frac{dx}{\sqrt{2+3x^2}}$

18. Evaluate $\int \frac{x^{\frac{1}{2}}}{1+x^{\frac{3}{4}}} dx$

19. Evaluate $\int \tan^{-1}(\cot x) dx$

20.Find the antiderivative of $(1-x)\sqrt{x}$

SHORT ANSWER TYPE QUESTIONS:-

21.Evaluate $\int \frac{\log(\tan x)}{\sin x \cos x} dx$

22. Evaluate $\int \frac{dx}{x(x^n+1)}$

23.Evaluate $\int \sqrt{1+\sin x} dx$

24. Evaluate $\int \left(\frac{x+2}{x+4}\right)^2 e^x dx$

25. Evaluate $\int \frac{\sin 2x}{\sin^4 x + \cos^4 x} dx$

26.Evaluate $\int \frac{dx}{2x^2+x-1}$

27.Evaluate $\int x^2 \tan^{-1} x dx$

28.Evaluate $\int \cot^8 x \operatorname{cosec}^4 x dx$

29.Evaluate $\int \frac{dx}{3\sin^2 x + 5\cos^2 x}$

30.Evaluate $\int e^x \sin x dx$

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