

Chapter : 7

INTEGRALS
समाकलन

MCQ :

1. $\int \sin 2x \, dx$ is equal to (बराबर है)

- a) $2\cos 2x + c$ b) $\frac{1}{2}\cos 2x + c$
 c) $-\frac{1}{2}\cos 2x + c$ d) $\cos 2x + c$

2. $\int \left(\sqrt{x} + \frac{1}{\sqrt{x}}\right) dx$ is equal to (बराबर है)

- a) $\frac{1}{3}x^{\frac{1}{3}} + 2x^{\frac{1}{2}} + c$ b) $\frac{2}{3}x^{\frac{2}{3}} + \frac{1}{2}x^2 + c$
 c) $\frac{2}{3}x^{\frac{3}{2}} + 2x^{\frac{1}{2}} + c$ d) $\frac{3}{2}x^{\frac{3}{2}} + \frac{1}{2}x^{\frac{1}{2}} + c$

3. $\int \cot x \, dx =$

- a) $\log|\sin x| + c$ b) $\log|\cos x| + c$
 c) $\log|\sec x| + c$ d) None of these
 (इनमें से कोई नहीं)

4. $\int \frac{dx}{\sin^2 x \cos^2 x} =$

- a) $\tan x + \cot x + c$
 b) $\tan x - \cot x + c$
 c) $\tan x \cdot \cot x + c$
 d) $\tan x - \cot 2x + c$

5. $\int \frac{10x^9 + 10^x \log_e 10}{x^{10} + 10^x} dx$ equals (बराबर है)

- a) $10^x - x^{10} + c$ b) $10^x + x^{10} + c$
 c) $(10^x - x^{10})^{-1} + c$ d) $\log(10^x + x^{10}) + c$

6. $\int \frac{\sin^2 x - \cos^2 x}{\sin^2 x \cos^2 x} dx$ is equal to (बराबर है)

- a) $\tan x + \cot x + c$
 b) $\tan x + \operatorname{cosec} x + c$
 c) $-\tan x + \cot x + c$
 d) $\tan x + \sec x + c$

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

- a) $-\cot(e^x) + c$ b) $\tan(xe^x) + c$
 c) $\tan(e^x) + c$ d) $\cot(e^x) + c$

8. $\int \frac{dx}{x^2 + 2x + 2}$ equals (बराबर है)

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

9. $\int \frac{dx}{\sqrt{9x - 4x^2}}$ equals (बराबर है)

- a) $\frac{1}{9} \sin^{-1}\left(\frac{9x-8}{8}\right) + c$
 b) $\frac{1}{2} \sin^{-1}\left(\frac{8x-9}{9}\right) + c$
 c) $\frac{1}{3} \sin^{-1}\left(\frac{9x-8}{8}\right) + c$
 d) $\frac{1}{2} \sin^{-1}\left(\frac{9x-8}{9}\right) + c$

10. $\int \frac{x dx}{(x-1)(x-2)}$ equals (बराबर है)

- a) $\log\left|\frac{(x-1)^2}{x-2}\right| + c$
 b) $\log\left|\frac{(x-2)^2}{x-1}\right| + c$
 c) $\log\left|\left(\frac{x-1}{x-2}\right)^2\right| + c$
 d) $\log|(x-1)(x-2)| + c$

11. $\int \frac{dx}{x(x^2+1)}$ equals (बराबर है)

- a) $\log|x| - \frac{1}{2} \log(x^2+1) + c$
 b) $\log|x| + \frac{1}{2} \log(x^2+1) + c$
 c) $-\log|x| + \frac{1}{2} \log(x^2+1) + c$
 d) $\frac{1}{2} \log|x| + \log(x^2+1) + c$

12. $\int x^2 e^{x^3} dx$ equals (बराबर है)

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

13. $\int e^x \sec x (1 + \tan x) dx =$