

TOPIC

INDEFINITE INTEGRATION

UNIT-VIII

NO. OF QUESTION

Objective type 20 (of 1 marks)

Short type 15 (of 4 marks)

Long type 10 (of 6 marks)

UNIT-VIII

INDEFINITE INTEGRATION

One marks

1. Evaluate $\int \sec^2 x \, dx$ 1
2. Evaluate $\int \frac{x^3-1}{x^3} \, dx$ 1
3. Evaluate $\int \sin^{-1}(\sin x) \, dx$ 1
4. Evaluate $\int (10^x + x^{10}) \, dx$ 1
5. Evaluate $\int \sqrt[3]{x} \, dx$ 1
6. Evaluate $\int 5^x \, dx$ 1
7. Evaluate $\int (\sin x - \cos x) \, dx$ 1
8. Evaluate $\int (4x^3 + 3x^2 + 2x + 5) \, dx$ 1
9. Evaluate $\int (2x + 5)^5 \, dx$ 1
10. Evaluate $\int \cos(5x + 3) \, dx$ 1
11. Evaluate $\int \frac{1}{9-x^2} \, dx$ 1
12. Evaluate $\int \frac{1}{4+x^2} \, dx$ 1
13. Evaluate $\int \sqrt{1+x^2} \, dx$ 1
14. Evaluate $\int xe^x \, dx$ 1
15. Evaluate $\int \frac{dx}{9-x}$ 1
16. Evaluate $\int (\sin^{-1} x + \cos^{-1} x) \, dx$ 1
17. Evaluate $\int e^{3 \log e^x} \, dx$ 1
18. Evaluate $\int (1-x)\sqrt{x} \, dx$ 1
19. Evaluate $\int \operatorname{cosec} x (\operatorname{cosec} x - \cot x) \, dx$ 1
20. Evaluate $\int (\sqrt[3]{x} - \frac{1}{\sqrt[3]{x}}) \, dx$ 1

DEFINITE INTEGRAL 4 MARKS

1. Evaluate $\int \left(\frac{x^3 + 4x^2 - 3x - 2}{x + 2} \right) dx$ 2+2
2. Evaluate $\int \frac{e^{2x} - 1}{e^{2x} + 1} dx$ 1+1+2
3. Evaluate $\int \sin^4 x dx$ 1+1+2
4. Evaluate $\int \frac{x^2 \tan^{-1} x^3}{(1 + x^6)} dx$ 1+1+2
5. Evaluate $\int \frac{\tan^4 \sqrt{x} \cdot \sec^2 \sqrt{x} dx}{\sqrt{x}}$ 2+2
6. Evaluate $\int \frac{\sin x}{\sin(x+a)} dx$ 2+2
7. Evaluate $\int \sin^5 x \cdot \cos^3 x dx$ 2+2
8. Evaluate $\int \frac{(x+1)(x + \log x)^2}{x} dx$ 2+2
9. Evaluate $\int \frac{\cos 2x}{(\cos x + \sin x)^2} dx$ 2+2
10. Evaluate $\int \frac{dx}{\sin^2 x \cdot \cos^2 x}$ 2+2
11. Evaluate $\int \tan^4 x dx$ 2+2
12. Evaluate $\int (4x+2)\sqrt{x^2+x+1} dx$ 2+2
13. Evaluate $\int \frac{1+\cos x}{1-\cos x} dx$ 2+2
14. Evaluate $\int \sin^7 x dx$ or $\int x \sin 3x \cdot \cos 2x dx$ 2+2
15. Evaluate $\int \log_e x dx$ 2+2

DEFINITE INTEGRAL 6 MARKS

1. Evaluate $\int \frac{dx}{3x^2 + 13x - 10}$ 2+1+3
2. Evaluate $\int \frac{x^2 + 1}{x^2 - 5x + 6} dx$ 1+3+2
3. Evaluate $\int \sqrt{\frac{a+x}{a-x}} dx$ 1+1+3+1
4. Evaluate $\int x^2 \cos^2 x dx$ 1+1+2+2
5. Evaluate $\int e^{2x} \sin 3x dx$
6. Evaluate $\int \sec^3 x dx$
7. Evaluate $\int \frac{x+2}{2x^2+6x+5} dx$

8. Evaluate $\int \frac{\sec^2 x \, dx}{(1 - \tan x)(2 - \tan x)}$

9. Evaluate $\int \frac{dx}{(\sin x - \sin 2x)}$

10. Evaluate $\int \frac{\sin^{-1} x}{x^2} \, dx$

