

CLASS XII

SAMPLE PAPER

MATHS

Integration

Time: 1 Hr.

MM: 40

Note: i) Attempt any 4 questions from 1 – 6.

ii) 7 – 10 are compulsory.

iii) All questions carry equal marks.

Evaluate the following:

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

2. $\int \frac{e^{\tan^{-1}x}}{(1+x^2)^{\frac{5}{2}}} dx$

3. $\int (6x + 5)\sqrt{6 + x - x^2} dx$

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

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

6. $\int \frac{1-\cos x}{\cos x(1+\cos x)} dx$

7. $\int_0^2 (x^2 + 1) dx$ as a limit of sum.

8. $\int_0^\pi \frac{x \tan x}{\sec x + \cos x} dx$

9. Find the area of the region $\{(x, y) : x^2 \leq y \leq |x|\}$

10. $\int_0^{\pi/2} \log(\sin x) dx$