

Integral Calculus-3
Model Exam Question paper - 3

11th Standard

Business Maths

Reg.No. :

I. Answer all the questions

Time : 01:05:00 Hrs

Total Marks : 50

Part-A

4 x 1 = 4

- 1) $\int \frac{dx}{x^2+a^2}$ is equal to
(a) $\tan^{-1} \frac{x}{a} + C$ (b) $\frac{1}{a} \tan^{-1} \frac{x}{a} + C$ (c) $\tan^{-1} \frac{a}{x} + C$ (d) $\frac{1}{a} \sin^{-1} \frac{x}{a} + C$
- 2) $\int e^x [f(x) + f'(x)] dx$ is equal to
(a) $e^x f(x) + C$ (b) $e^x f'(x) + C$ (c) $e^x + C$ (d) $e^x \cdot C$
- 3) The value of $\int_1^4 x\sqrt{x} dx$ is
(a) $\frac{62}{5}$ (b) $\frac{32}{5}$ (c) $\frac{15}{4}$ (d) $\frac{31}{5}$
- 4) The value of $\int_0^{\pi} \tan x dx$ is
(a) $\log \frac{1}{2}$ (b) $\log 2$ (c) $2 \log 2$ (d) $\log \sqrt{2}$

Part-B

4 x 2 = 8

- 5) Evaluate $\int x \cdot e^x dx$
- 6) Evaluate $\int x \cdot \sin 2x dx$
- 7) Evaluate $\int_1^e x \log x dx$
- 8) Evaluate $\int_0^{\infty} x e^{-x^2} dx$

Part-C

6 x 3 = 18

- 9) Evaluate $\int \frac{\log x}{(1+x)^2} dx$
- 10) Evaluate $\int x^n \log x dx, n \neq -1$
- 11) Evaluate $\int \sqrt{49-x^2} dx$
- 12) Evaluate $\int \sqrt{x^2-16} dx$
- 13) Evaluate $\int_1^2 \frac{2x}{1+x^2} dx$
- 14) Evaluate $\int_0^{\pi} \sin^2 x dx$

Part-D

4 x 5 = 20

- 15) Evaluate the following:

$$\int_0^{\pi} \frac{\cos x}{(1+\sin x)(2+\sin x)} dx$$

- 16) Evaluate the following:

$$\int_0^{\pi} \sqrt{1+\cos 2x} dx$$

- 17) Evaluate $\int \sqrt{16x^2+9} dx$

- 18) Evaluate $\int_1^2 (4x^3+2x+1) dx$
