

Integral Calculus-2  
Model Exam Question paper - 2

11th Standard

Business Maths

Reg.No. : 

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**I. Answer all the questions**

Time : 00:45:00 Hrs

Total Marks : 35

**Part-A**

7 x 1 = 7

- 1)  $\int (x+1)^8 dx$  is equal to  
(a)  $\frac{(x+1)^9}{9} + C$  (b)  $\frac{(x+1)^7}{7} + C$  (c)  $(x+1)^8 + C$  (d)  $(x+1)^4 + C$
- 2)  $\int \frac{4x^3}{x^4+1} dx$  is equal to  
(a)  $\log(x^4+1)$  (b)  $4 \log(x^4+1) + C$  (c)  $\log(x^4+1) + C$  (d) None of these
- 3)  $\int \frac{x^4}{1+x^5} dx$  is equal to  
(a)  $\log(1+x^5)$  (b)  $\log(1+x^4) + C$  (c)  $\log(1+x^5) + C$  (d)  $\frac{1}{5} \log(1+x^5) + C$
- 4)  $\int \frac{dx}{x^2+a^2}$  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)  $\frac{1}{a} \sin^{-1} \frac{x}{a} + C$
- 5)  $\int e^x [f(x) + f'(x)] dx$  is equal to  
(a)  $e^x f(x) + C$  (b)  $e^x f'(x) + C$  (c)  $e^x + C$  (d)  $e^{-x} + C$
- 6)  $\int e^x (\sin x + \cos x) dx$  is equal to  
(a)  $e^x \cos x + C$  (b)  $e^x \sin x \cos x + C$  (c)  $e^x + C \cos x$  (d)  $e^x \sin x + C$
- 7)  $\int \frac{dx}{1+4x^2}$  is equal to  
(a)  $\frac{1}{2} \tan^{-1} 2x + C$  (b)  $\frac{1}{2} \tan^{-1} x + C$  (c)  $\frac{1}{2} \tan^{-1}(x+C)$  (d)  $\tan^{-1}(2x) + C$

**Part-B**

6 x 2 = 12

- 8) Evaluate the following:

$$\int \frac{\sqrt{3+\log x}}{x} dx$$

- 9) Evaluate the following:

$$\int \frac{dx}{x(x^4+1)}$$

- 10) Evaluate the following:

$$\int \frac{\sec^2 \sqrt{x} \tan \sqrt{x}}{\sqrt{x}} dx$$

- 11) Evaluate the following:

$$\int \sqrt{2x+4} dx$$

- 12) Evaluate the following:

$$\int (x^2 - 1)^4 \cdot 2x \, dx$$

- 13) Evaluate the following:

$$\int \frac{\sec^2 x}{a+b \tan x} dx$$

**Part-C**

2 x 3 = 6

- 14) Evaluate  $\int \frac{dx}{\sqrt{5+4x-x^2}}$

- 15) Evaluate  $\int \frac{\log x}{(1+x)^2} dx$

**Part-D**

2 x 5 = 10

- 16) Evaluate the following:

$$\int (5x^4 + \sqrt{x} - \frac{7}{\sqrt{x}}) dx$$

- 17) Evaluate the following:

$$\int (5 \sec X \cdot \tan X + 2 \operatorname{cosec}^2 X) dx$$

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