Model Question paper

Integral Calculus 2

11th Standard

Maths

Reg.No. : | | | | | | |

I. Answer all the questions.

II. Use blue pen only.

Time : 02:00:00 Hrs

Total Marks : 60

Part - A

10 x 1 = 10

1) $\int \frac{x}{x+x^2} dx =$ .....

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

2) $\int tan\ \ x\ \ dx =$ .....

(a) $log\ \ cos\ \ x + c$ (b) $log\ \ sec\ \ x + c$ (c) $sec^2\ \ x + c$ (d) $\frac{tan^2 x}{2} + c$

3) $\int \frac{1}{\sqrt{3+4x}} dx =$ .....

(a) $\frac{1}{2}\sqrt{3+4x}+c$ (b) $\frac{1}{4}log\sqrt{3+4+x}+c$ (c) $2\sqrt{3+4x}+c$ (d) $-\frac{1}{2}\sqrt{3+4x}+c$

4) $\int \left(\frac{x-1}{x+1}\right) dx =$ .....

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

5) $\int cosec\ \ x\ \ dx =$ .....

(a) $log\ \ tan\frac{x}{2}+c$ (b) $-log(cosec\ \ x+cot\ \ x)+c$ (c) $log(cosec\ \ x-cot\ \ x)+c$ (d) All of the above

6) $\int \left(e^{3x}+1\right)^2 dx$=_____+c

(a) 2(e^{3x}+1) (b) 6(e^{3x}+1) (c) $\frac{e^{6x}}{6}+2\frac{e^{3x}}{3}+x$ (d) $\frac{1}{\left(e^{3x}+1\right)^3}$

7) $\int \frac{1}{1+\frac{x^2}{4}} dx$=_____+c

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

8) $\int e^{\sqrt{x}} dx$=_____+c

(a) $2\left(\sqrt{x}-1\right)e^{-\sqrt{x}}$ (b) $\left(\sqrt{x}-1\right)e^{\sqrt{x}}$ (c) $2\left(\sqrt{x}-1\right)e^{\sqrt{x}}$ (d) $\left(\sqrt{x}-1\right)e^{-\sqrt{x}}$

9) $\int e^x(sinx+cosx)dx$=_____+c

(a) sinx e^{-x} (b) sinx e^{x} (c) cosx e^{x} (d) cosx e^{-x}

10) $\int tan^2 x dx$=_____+c

(a) x-tanx (b) tanx-x (c) $\frac{tan^3 x}{3}$ (d) 3 tan^3x

Part - B

5 x 2 = 10

11) Integrate the following with respect to x.

$\frac{1}{\sqrt[3]{x^5}}$

12) Integrate the followings

$\frac{1}{16-x^2}$

13) Integrate the following.

$\frac{a^{x+1}-b^{x-1}}{c^x}$

14) Evaluate the following integrals: $\int_0^\infty e^{-x^2}x^2\ \ dx$

15) Integrate the followings.

$\sqrt{(2x+1)^2+9}$

Part - C

5 x 3 = 15

16) Integrate the following.

$(2x+3)\sqrt{x^2+3x-6}$

17) Integrate the following respect to x.

$sec^2(2-x)$

18) Integrate the following

$\frac{sin(logx)}{x}$

19) Integrate the following.

$\frac{cosx}{cos(x-a)}$

20) Integrate the following:

$\sqrt{x^2+4x+1}$

Part - D

5 x 5 = 25

21) Integrate the followings with respect to x

$tan^{-1}\left(\frac{3x-x^3}{1-3x^2}\right)$

22) Integrate the following with respect to x

$a \quad sec^2(bx+c)+\frac{q}{e^{l-mx}}$

23) Integrate : $\int(3x+4)\sqrt{3x+7}dx$

24) Integrate $\frac{e^{x/2}-e^{-x/2}}{e^x-e^{-x}}$

25) Integrate $\frac{1}{\sqrt{1-\frac{x^2}{16}}}$

****