CHAPTER 7

INTEGRALS

MULTIPLE CHOICE QUESTIONS

S.No.	Question
1.	The anti derivatives of $\sqrt{x}+\frac{1}{\sqrt{x}}$ equals (a) $\frac{1}{3}x^{\frac{1}{3}}+2x^{\frac{1}{2}}+C$ (b) $\frac{2}{3}x^{\frac{2}{3}}+\frac{1}{2}x^{2}+C$ (c) $\frac{2}{3}x^{\frac{3}{2}}+2x^{\frac{1}{2}}+C$ (d) $\frac{3}{2}x^{\frac{3}{2}}+\frac{1}{2}x^{\frac{1}{2}}+C$
2.	$\int \sqrt{x^2-8x+7}\,dx$ *is equal to* (a) $\frac{1}{2}(x-4)\sqrt{x^2-8x+7}$ +9$log\left\|x-4+\sqrt{x^2-8x+7}\right\|$ +C (b) $\frac{1}{2}(x+4)\sqrt{x^2-8x+7}$ +9$log\left\|x+4+\sqrt{x^2-8x+7}\right\|$ +C (c) $\frac{1}{2}(x-4)\sqrt{x^2-8x+7}-3\sqrt{2}log\left\|x-4+\sqrt{x^2-8x+7}\right\|$ +C (d) $\frac{1}{2}(x-4)\sqrt{x^2-8x+7}-\frac{9}{2}log\left\|x-4+\sqrt{x^2-8x+7}\right\|$ +C
3.	$\int x^2e^{x^3}dx$ *is equal to* a) $\frac{1}{3}e^{x^3}+C$ b) $\frac{1}{3}e^{x^2}+C$ c) $\frac{1}{2}e^{x^3}+C$ d) $\frac{1}{2}e^{x^2}+C$
4.	$\int e^x secx(1+tanx)dx$ *is equal to* a) $e^xcosx+C$ b) $e^xsecx+C$ c) $e^xsinx+C$

	d) $e^x tanx + C$
5.	$\int \frac{xdx}{(x-1)(x-2)}$ *is equal to* a) $log\left\|\frac{(x-1)^2}{x-2}\right\|$ + C b) $log\left\|\frac{(x-2)^2}{x-1}\right\|$ + C c) $log\left\|(\frac{x-1}{x-2})^2\right\|$ + C d) $log\|(x-1)(x-2)\|$ + C
6.	$\int \frac{dx}{x(x^2+1)}$ *equals* a) $log\|x\| - \frac{1}{2}\log(x^2+1) + C$ b) $log\|x\| + \frac{1}{2}\log(x^2+1) + C$ c) $-log\|x\| + \frac{1}{2}\log(x^2+1) + C$ d) $\frac{1}{2}log\|x\| + \log(x^2+1) + C$
7.	$\int \frac{dx}{x^2+2x+2}$ *equals* a) $xtan^{-1}(x+1) + C$ b) $tan^{-1}(x+1) + C$ c) $(x+1)tan^{-1}x + C$ d) $tan^{-1}x + C$
8.	$\int \frac{dx}{\sqrt{9x-4x^2}}$ *equals* a) $\frac{1}{9}sin^{-1}\left(\frac{9x-8}{8}\right) + C$ b) $\frac{1}{2}sin^{-1}\left(\frac{8x-9}{9}\right) + C$ c) $\frac{1}{3}sin^{-1}\left(\frac{9x-8}{8}\right) + C$ d) $\frac{1}{2}sin^{-1}\left(\frac{9x-8}{9}\right) + C$
9.	$\int \frac{sin^2x - cos^2x}{sin^2x\, cos^2x}\, dx$ *equals* a) $tanx + cotx + C$

	b) $tanx + cosecx + C$ c) $-tanx + cotx + C$ d) $tanx + secx + C$
10.	$\int \frac{e^x(1+x)dx}{\cos^2(e^x x)}$ *is equal to* a) $-\cot(ex^x) + C$ b) $\tan(xe^x) + C$ c) $\tan(e^x) + C$ d) $\cot(e^x) + C$
11.	$\int \frac{10x^9 + 10^x \log_e 10}{x^{10} + 10^x}\, dx$ *equals* a) $10^x - x^{10} + C$ b) $10^x + x^{10} + C$ c) $(10^x - x^{10})^{-1} + C$ d) $\log(10^x + x^{10}) + C$
12.	$\int \frac{dx}{sin^2x\, cos^2x}$ equals a) $tanx + cotx + C$ b) $tanx - cotx + C$ c) $tanxcotx + C$ d) $tanx - cot2x + C$
13.	$\int \frac{dx}{e^x + e^{-x}}$ *equals* a) $tan^{-1}(e^x) + C$ b) $tan^{-1}(e^{-x}) + C$ c) $\log(e^x + e^{-x}) + C$ d) $\log(e^x - e^{-x}) + C$
14.	$\int \frac{cos2x\, dx}{(cosx + sinx)^2} dx$ *equals* a) $\frac{-1}{sinx+cosx} + C$ b) $log\lvert sinx + cosx\rvert + C$ c) $log\lvert sinx - cosx\rvert + C$

	d) $\frac{1}{(sinx+cosx)^2} + C$
15.	If $\frac{d}{dx}[f(x)] = 4x^3 - \frac{3}{4}x^4$ *and* $f(2) = 0$, *then* a) $f(x) = x^4 + \frac{1}{x^3} - \frac{129}{8}$ b) $f(x) = x^3 + \frac{1}{x^4} + \frac{129}{8}$ c) $f(x) = x^4 + \frac{1}{x^3} + \frac{129}{8}$ d) $f(x) = x^3 + \frac{1}{x^4} - \frac{129}{8}$
16.	$\int \frac{2x-3}{x^2-3x+2}$dx = a) $\frac{1}{2}log\|x^2 - 3x + 2\| + c$ b) $\frac{1}{4}log\|x^2 - 3x + 2\| + c$ c) $\frac{1}{8}log\|x^2 - 3x + 2\| + c$ d) $log\|x^2 - 3x + 2\| + c$
17.	$\int sin^2$ x dx = a) (1/2) { x-(sin2x)/2) + c a) (1/3) { x-(sin2x)/2) + c b) (-1/2) { x-(sin2x)/2) + c c) (1/4) { x-(sin2x)/2) + c
18.	$\int x\cos^3(x^2)\sin(x^2)dx$ = a) –(1/8)$\cos^4(x^2)$ + c b) -$\cos^4(x^2)$ + c c) $\cos^4(x^2)$ + c d) -(1/2) $\cos^4(x^2)$ + c
19.	$\int \sin(3x)\cos(2x)dx$= a) (½)[–{cos(5x)/ 5}– cos$x$] + c b) [–{cos(5x)/ 5}– cos$x$] + c c) cos(5x)/ 5}– cos$x$] + c d) [{cos(5x)/ 5}– cos$x$] + c
20.	$\int 2^x$ dx = f(x) + c , then f(x) = a) 2^x b) $2^x ln2$ c) $2^x/ln2$ d) 2^{x+1}/(x+1)

21.	$\int \frac{1}{\sqrt{4-9x^2}}$dx = (1/3)$\sin^{-1}$(ax) + c , then a = a) 2 b) 4 c) 3/2 d) 2/3
22.	$\int \frac{3cosx}{4sin^2x}$ dx = a) (3/4) cosecx + c b) (-3/4) cosecx + c c) (3/4) cosecx + c d) (3/4) lncosecx +
23.	$\int (e^{xlna} + e^{alnx})dx =$ a) $a^x/lna + x^{a+1}$/(a+1) +c b) $a^x lna + x^{a+1}$/(a+1) + c c) $a^x/lna + x^{a+1}$ + c d) $a^x/lna + ax^{a+1}$/(a+1) + c
24.	$\int \frac{1}{x^2} e^{\frac{-1}{x}}$dx = a) $e^{1/x}$ +c b) $e^{-1/x}$ + c c) $-e^{-1/x}$ + c d) None of these
25.	$\int \frac{sin2x}{4+3sin^2x}$dx = a) (1/3) $ln\|4 + 3sin^2x\|$+ c b) (1/4) $ln\|4 + 3sin^2x\|$+ c c) $ln\|3 + 4sin^2x\|$+ c d) None of these
26.	$\int \sqrt{\frac{1+x}{1-x}}$ dx = a) $\sin^{-1}x - \sqrt{1-x^2}$ + c b) $\sin^{-1}x + \sqrt{1-x^2}$ + c

	c) $-\sin^{-1}x - \sqrt{1-x^2} + c$ d) None of these
27.	$\int \frac{dx}{1+\sqrt{x}}$ = a) $2\sqrt{x} + 2\log\|1+\sqrt{x}\| + c$ b) $2\sqrt{x} - 2\log\|1+\sqrt{x}\| + c$ c) $2\sqrt{x} + \log\|1+\sqrt{x}\| + c$ d) None of these
28.	$\int \frac{dx}{1+tanx}$ = a) $\frac{1}{2}x - \frac{1}{2}\log\|\sin x+\cos x\| + c$ b) $\frac{1}{2}x - \log\|\sin x+\cos x\| + c$ c) $\frac{1}{2}x + \frac{1}{2}\log\|\sin x+\cos x\| + c$ d) None of these
29.	$\int (\sin x + \cos x)\, dx$ equals a) cos x – sin x + c b) sin x + cos x +c c) -cos x + sin x + c d) -cos x – sin x + c
30.	$\int cosecx(cosec\, x + \cot x)dx$ equals a) cot x + cosec x +c b) cot x – cosec x +c c) -cot x – cosec x + c d) -cot x + cosec x + c
31.	$\int \frac{1-sinx}{cos^2x}\, dx$ equals a) tan x + sec x +c b) sec x – tan x + c c) -sec x - tan x +c d) -sec x + tan x +c

32.	$\int \frac{sec^2x}{cosec^2x} dx$ equals a) tan x + x +c b) tan x – x + c c) sec x + x + c d) sec x – x + c
33.	$\int \frac{1}{cos^2x(1-tanx)^2} dx$ a) $\frac{1}{(1-\tan x)^2}$ + c b) $\log\lvert 1-\tan x\rvert$ + c c) $\log\lvert 1+\tan x\rvert$ + 3 d) $\frac{1}{1-\tan x}$ + c
34.	$\int \frac{1}{x \log x} dx$ a) 2log(log x) + c b) 1/ log x c) log(log x) + c d) $(\log x)^2$ + c
35.	$\int \frac{e^x(1-\sin x)}{(1-\cos x)} dx$ equals a) $-e^x \tan\frac{x}{2}$ + c b) $-e^x \cot\frac{x}{2}$ + c c) $-\frac{e^x}{2} \tan\frac{x}{2}$ + c d) $-2\, e^x \cot\frac{x}{2}$ + c
36.	$\int e^{3\log x}(x^4 - 1)^{-1} dx$ is equal to a) $)\frac{1}{4}\log(x^4 - 1)$ + c

	b) $\frac{1}{4}$ log (x^4 +1) + c c) $\frac{1}{4}$ log (x^3 +1) + c d) $\frac{1}{2}$ log (x^4 - 1) + c
37.	$\int sin^3x.cos^5x\,dx$ = A sin^4x + B sin^6x + C sin^8x + D a) A= 1/4 , B= - 1/3 , C = 1/8 , D ϵ R b) A= 1/8 , B= 1/4 , C= 1/3 , D ϵ R c) A= 0 , B= 1/6 , C= 1/8 , D ϵ R d) None of these
38.	Find the value of A if $\int \frac{e^x+e^{-x}}{e^x-e^{-x}}dx$= log(e^{2x} -1)+Ax +c a) 0 b) -1 c) 1 d) ½
39.	$\int 2^{3x+4}dx = ?$ (a) $\frac{3}{\log 2}.2^{3x+4} + c$ (b) $\frac{2^{3x+4}}{3(\log 2)} + c$ (c) $\frac{2^{3x+4}}{2(\log 3)} + c$ (d) $None\ of\ these$
40.	$\int \frac{1}{\sqrt{x+3}-\sqrt{x+2}}dx = ?$ (a) $\frac{2}{3}(x+3)^{\frac{3}{2}} - \frac{2}{3}(x+2)^{\frac{3}{2}} + c$ (b) $\frac{2}{3}(x+3)^{\frac{3}{2}} + \frac{2}{3}(x+2)^{\frac{3}{2}} + c$ (c) $\frac{3}{2}(x+3)^{\frac{3}{2}} - \frac{3}{2}(x+2)^{\frac{3}{2}} + c$ (d) $none\ of\ these$
41.	If $f'(x) = 3x^2 + sec^2x$ such that $f(0) = 2$. Then $f(x)$ is

	(a) $x^3 + \tan x + 2$ (b) $x^3 - tanx - 2$ (c) $(c)x^3 - \tan x + 2$ (d) $x^3 + \tan x - 2$
42.	$\int \sqrt{e^x - 1}\, dx = ?$ (a) $\frac{2}{3}(e^x - 1)^{\frac{3}{2}} + c$ (b) $\frac{1}{2}.\frac{e^x}{\sqrt{e^x - 1}} + c$ (c) $2\sqrt{e^x - 1} - 2tan^{-1}\sqrt{e^x - 1} + c$ (d) none of these
43.	$\int \frac{cos\, x + sin\, x}{1 - sin\, 2x}\, dx = ?$ (a) $\log\lvert sin\, x - cos\, x \rvert + c$ (b) $\frac{1}{cosx - sinx} + c$ (c) $\log\lvert sinx + cosx \rvert + c$ (d) $none\ of\ these$
44.	$\int \frac{1}{\sqrt{sin^3 x.cos\, x}}\, dx = ?$ (a) $2\sqrt{tan\, x} + c$ (b) $2\sqrt{cot\, x} + c$ (c) $-2\sqrt{tan\, x} + c$ (d) $-\frac{2}{\sqrt{tan\, x}} + c$
45.	If $\int \frac{1}{(x+2)(x^2+1)}\, dx = a\, log\, \lvert x^2 + 1 \rvert + btan^{-1}x + \frac{1}{5}\, log\, \lvert x + 2 \rvert + c$, then (a) $a = -\frac{1}{10}, b = -\frac{2}{5}$ (b) $a = \frac{1}{10}, b = \frac{-2}{5}$ (c) $a = -\frac{1}{10}, b = \frac{2}{5}$ (d) $a = \frac{1}{10}, b = \frac{2}{5}$
46.	If $\int \frac{3e^x - 5e^{-x}}{4e^x + 5e^{-x}}\, dx = ax + b\, log\, \lvert 4e^x + 5e^{-x} \rvert + C$, then (a) $a = \frac{-1}{8}, b = \frac{7}{8}$

	(b) $a=\frac{1}{8}, b=\frac{7}{8}$ (c) $a=-\frac{1}{8}, b=-\frac{7}{8}$ (d) $a=\frac{1}{8}, b=-\frac{7}{8}$
47.	The value of the integral $\int \frac{1}{e^x-1}\, dx$ is (a) $\log\|1-e^{-x}\|+c$ (b) $\log\|1+e^{-x}\|+c$ (c) $\log\|1-e^{x}\|+c$ (d) $log\ \|1+e^{x}\|+c$
48.	The value of the integral $\int x\ sinx\ cosx\ dx$ is (a) $-\frac{1}{4}\ x\sin 2x+\frac{1}{8}\cos 2x+c$ (b) $\frac{1}{4}\ x\ sin2x-\frac{1}{8}\ cos2x+c$ (c) $\frac{1}{2}\ x\ sin2x+\frac{1}{4}\ cos2x+c$ (d) $-\frac{1}{4}\ x\ cos2x+\frac{1}{8}\ sin2x+c$
49.	The value of the integral $\int \frac{x+3}{(x+4)^2} e^x\, dx$ is (a) $\frac{e^x}{x+4}+c$ (b) $\frac{e^x}{x+3}+c$ (c) $\frac{1}{(x+4)^2}+c$ (d) $\frac{e^x}{(x+4)^2}+c$
50.	$\int tan^{-1}\sqrt{x}\ dx$ =? (a) $(x+1)tan^{-1}\sqrt{x}-\sqrt{x}+c$ (b) $(x+1)tan^{-1}\sqrt{x}+\sqrt{x}+c$ (c) $(x+1)tan^{-1}\sqrt{x}-2\sqrt{x}+c$ (d) $2(x+1)tan^{-1}\sqrt{x}-\sqrt{x}+c$
51.	The value of the integral $\int \frac{cosx}{\sqrt{sin^2x-2\ sinx-3}}dx$ is (a) $\log\ \|sinx+\sqrt{sin^2x-2\ sinx-3}\ \|+c$ (b) $log\ \|(sinx-1)+\sqrt{sin^2x-2\ sinx-3}\ \|+c$ (c) $\log\ \|(sinx-1)-\sqrt{sin^2x-2\ sinx-3}\ \|+c$

	(d) $none\ of\ these$
52.	If $\int \frac{e^x(1+sinx)dx}{1+cosx} = e^x f(x) + C$, then $f(x)$ is equal to (a) $sin\frac{x}{2}$ (b) $cos\frac{x}{2}$ (c) $tan\frac{x}{2}$ (d) $log\frac{x}{2}$
53.	If $\int \sqrt{4-3x^2}\,dx = a.x\sqrt{4-3x^2} + b.sin^{-1}\left(\frac{\sqrt{3}x}{2}\right) + c$, then (a) $a = \frac{1}{2}, b = \frac{2}{\sqrt{3}}$ (b) $a = -\frac{1}{2}, b = \frac{2}{\sqrt{3}}$ (c) $a = \frac{1}{2}, b = -\frac{2}{\sqrt{3}}$ (d) $a = \frac{1}{2\sqrt{3}}, b = \frac{2}{\sqrt{3}}$
54.	$\int \frac{x+sinx}{1+cosx}dx$ is equal to (a) log |1 + cos x | + c (b) log | x + sin x | + c (c) x – tan + c (d) x. tan (x/2) + c
55.	$\int \frac{dx}{\sqrt{x}} =$ (a) √x + k (b) 2√x + k (c) x + k (d) $2x^{3/2}$ + k
56.	$\int \frac{dx}{1+cosx}$= (a) tan x/2 + k (b) 1/2 tan x2 + k (c) 2 tan x/2 + k (d) $\tan^2$ x/2 + k
57.	$\frac{d}{dx}\int$f(x)dx is equal to (a) f'(x)

	(b) f(x) (c) f'(x') (d) f(x) + c
58.	$\int \log_{10} x dx$ = (a) $\log_e 10.x \log_e (x/e) + c$ (b) $\log_{10} e. x \log_e (x/e) + c$ (c) $(x - 1) \log_e x + c$ (d) $1/x + c$
59.	$\int \frac{cos2\theta-1}{cos2\theta+1} dx$ = (a) $\tan \theta - \theta + c$ (b) $\theta + \tan \theta + c$ (c) $\theta - \tan \theta + c$ (d) $-\theta - \cot \theta + c$
60.	Value of $\int \frac{dx}{\sqrt{2x-x^2}}$ (a) $\sin^{-1} (x - 1) + c$ (b) $\sin^{-1} (1 + x) + c$ (c) $\sin^{-1} (1 + x^2) + c$ (d) $-2x-x^2 + c$
61.	$\int x^2 \sin x^3 dx$ = (a) $1/3 \cos x^3 + c$ (b) $-1/3 \cos x + c$ (c) $-1/3 \cos x^3 + c$ (d) $1/2 \sin^2 x^3 + c$
62.	$\int \frac{cos2x-cox2\theta}{cosx-cos\theta} dx$ is equal to (a) 2 (sin x + x cos θ) + C (b) 2 (sin x – x cos θ) + C (c) 2 (sin x + 2x cos θ) + C (d) 2 (sin x – 2x cos θ) + C
63.	Evaluate: $\int (2 \tan x - 3 \cot x)^2 dx$ (a) -4tan x – cot x – 25x + C (b) 4 tan x – 9 cot x – 25x + C (c) – 4 tan x + 9 cot x + 25x + C (d) 4 tan x + 9 cot x + 25x + C
64.	The value of $\int \sec x (\sec x + \tan x) dx$ is

	(a) $\tan x - \sec x + C$ (b) $\sec x + \tan x + C$ (c) $2 \sec x \tan x + C$ (d) $2 \operatorname{cosec} x \cot x + C$
65.	$\int \cos x \log\left(\tan\frac{x}{2}\right) dx$ is equal to (a) $\sin x \log\left(\tan\frac{x}{2}\right) + C$ (b) $\sin x \log\left(\tan\frac{x}{2}\right) - x + C$ (c) $\sin x \log\left(\tan\frac{x}{2}\right) + x + C$ (d) $\cos x \log\left(\tan\frac{x}{2}\right) - x + C$
66.	$\int \frac{1}{e^x - 1} dx$ is equal to (a) $\log\left\|\frac{e^x-1}{e^x}\right\| + C$ (b) $\log\left\|\frac{e^x}{e^x-1}\right\| + C$ (c) $\log\|e^x - 1\| + C$ (d) $\log\|e^x + 1\| + C$
67.	The value of $\int e^x(1 + \tan x + \tan^2 x)\, dx$ is (a) $e^x(1 + \tan x) + C$ (b) $e^x \tan x + C$ (c) $e^x(1 + \tan x + \tan^2 x) + C$ (d) $e^x(1 + \sec x + 2\sec^2 x) + C$
68.	The value of $\int \log x \ dx$ is (a) $\frac{1}{x} + C$ (b) $\log x - x + C$ (c) $x \log x + x + C$ (d) $x \log x - x + C$
69.	$\int \frac{\cos 2x + 2\sin^2 x}{\cos^2 x} dx$ is equals to (a) $\sin x + C$ (b) $\cos x + C$ (c) $\tan x + C$ (d) $\cot x + C$
70.	The value of $\int \frac{e^x(x-3)}{(x-1)^3} dx$ is (a) $\frac{e^x}{x-1} + C$ (b) $\frac{e^x}{(x-1)^2} + C$

	(c) $\frac{e^x}{(x-1)^3} + C$ (d) $\frac{e^x}{(x-1)^4} + C$
71.	The value of $\int \frac{\cos x}{(1-\sin x)(2-\sin x)} dx$ is (a) $\log \left\|\frac{2+\sin x}{1+\sin x}\right\| + C$ (b) $\log \left\|\frac{1+\sin x}{2+\sin x}\right\| + C$ (c) $\log \left\|\frac{1-\sin x}{2-\sin x}\right\| + C$ (d) $\log \left\|\frac{2-\sin x}{1-\sin x}\right\| + C$
72.	If $\int \frac{1}{5+4\sin x} dx = A\ tan^{-1}(B \tan\frac{x}{2} + \frac{4}{3}) + C$, then (a)A = $\frac{2}{3}$, B = $\frac{5}{3}$ (b) A = $\frac{1}{3}$, B = $\frac{2}{3}$ (c)A = - $\frac{2}{3}$, B = $\frac{5}{3}$ (d) A = $\frac{1}{3}$, B = - $\frac{5}{3}$
73.	$\int (x-1)\, e^{-x} dx$ is equal to (a)$-xe^x$ + C (b)xe^x + C (c)$-xe^{-x}$ + C (d)xe^{-x} + C
74.	If $\int \frac{2^{1/x}}{x^2} dx$ = k $2^{1/x}$ + C , then k is equal to (a) $-\frac{1}{log_e 2}$ (b)- $log_e 2$ (c)-1 (d)$\frac{1}{2}$
75.	$\int \|x\|^3$ dx is equal to (a)$\frac{-x^4}{4}$ + C (b)$\frac{\|X\|^4}{4}$ + C

	(c)$\frac{X^4}{4}$ + C (d)None of these
76.	$\int e^x$ (1 – cot x + cot^2 x) dx = (a) e^x cot x + C (b)$-e^x$ cot x + C (c)e^x cosec x + C (d)$-e^x$ cosec x + C
77.	$\int \frac{sin^6 x}{cos^8 x}$ dx = (a)tan 7x + C (b)$\frac{tan^7 x}{7}$ + C (c)$\frac{tan\ 7x}{7}$ + C (d)sec^7 x + C
78.	$\int \frac{1}{7+5\ cos\ x}$ dx = (a)$\frac{1}{\sqrt{6}} tan^{-1}$ ($\frac{1}{\sqrt{6}}$ tan $\frac{x}{2}$) + C (b)$\frac{1}{\sqrt{3}} tan^{-1}$($\frac{1}{\sqrt{3}}$ tan $\frac{x}{2}$) + C (c)$\frac{1}{4} tan^{-1}$ (tan $\frac{x}{2}$) + C (d)$\frac{1}{7} tan^{-1}$(tan $\frac{x}{2}$) + C
79.	$\int \frac{x+3}{(x+4)^2} e^x$ dx = (a)$\frac{e^x}{x+4}$ + C (b)$\frac{e^x}{x+3}$ + C (c)$\frac{1}{(x+4)^2}$ + C (d)$\frac{e^x}{(x+4)^2}$ + C
80.	$\int e^x${f(x) + f'(x)}dx

	(a) e^xf(x)+C (b)$e^x + f(x)$+C (c) $2e^x$ f(x) + C (d) – f (x)+ C
81.	If $\int x\ sin\ x\ dx = -x\ cos\ x + a$,then a is equal to (a) sin x +C (b)Cos x +C (c) C (d)none of these
82.	An anti derivative of $3x^2 – 4\ x^3$ is (a) $3x^3 – 4\ x^4$ (b) $x^3 – \ x^4$ (c) $3x^2 + 4\ x^3$ (d) $x^2 – 4\ x^3$
83.	$\int \frac{1}{\sqrt{X}} \cos\sqrt{x}$ dx is equal to (a) $2\ \sin\sqrt{x}$ + C (b) $2\ \cos\sqrt{x}$ + C (c) $\sin\sqrt{x}$ + C (d) $\cos\sqrt{x}$ + C
84.	$\int (logx + \frac{1}{x})e^x$ dx is equal to (a) e^x + C (b) e^{-x}logx + C (c) e^xlogx + C (d) $-e^x$ + C
85.	$\int_2^4 \sqrt{\frac{x^2-4}{x}}\,dx$ = (A) $2\left(3\sqrt{3} - \pi\right)$ (B) $2\sqrt{3} - \pi$ (C) $\frac{2}{3}\left(3\sqrt{3} - \pi\right)$ (D) π

86.	$\int_0^{\frac{\pi}{2}} \frac{\sin x \cos x}{cos^2 x+3\, cosx+2}\, dx$ = (A)$\log \frac{9}{8}$ (B) $\log \frac{9}{2}$ (C)$\log \frac{8}{9}$ (D) $\log \frac{3}{4}$
87.	$\int_0^{\pi} \frac{dx}{a+bcosx}$ = (A) $\frac{\pi}{ab}$ (B) $\frac{\pi}{\sqrt{a^2-b^2}}$ (C) $\pi\sqrt{a^2-b^2}$ (D) (a+b)π
88.	$\int_0^{\frac{\pi}{2}} xcotxdx$ = (A)$\frac{\pi}{2} log2$ (B)$-\frac{\pi}{2} log2$ (C) $\pi log2$ (D) $-\pi log2$
89.	Let$f: (0,\infty) \to RandF(x) = \int_0^x f(t)dt. IfF(x^2) = x^2(1+x), thenf(4)$ is equal to (A)$\frac{1}{4}$ (B)$\frac{5}{4}$ (C)7

	(D)4
90.	$\int_0^{2\pi} \frac{xsin^{2n}x}{sin^{2n}x+cos^{2n}x}\,dx$ = (A)π (B)$2\,\pi$ (C)π^2 (D)$2\pi^2$
91.	$\int_{-a}^{a} \frac{x^3 \sin(1+x^2)}{1+x^2}\,dx$ = (a) 1 (b) -1 (c) 0 (d) $2a$
92.	If $\int_0^{\frac{\pi}{2}} \frac{dx}{9sin^2x+4cos^2x} = k\pi, then k =$ (A)$\frac{1}{4}$ (B)$\frac{1}{8}$ (C) $\frac{1}{12}$ (D) $\frac{1}{16}$
93.	If $\int_{-3}^{2} f(x)\,dx = \frac{7}{3} and \int_{-3}^{9} f(x)\,dx = -\frac{5}{6}, then \int_2^9 f(x)\,dx =$ (A)$\frac{3}{2}$ (B)$-\frac{3}{2}$ (C) $\frac{19}{6}$

	(D) $-\frac{19}{6}$
94.	If k$\int_0^1 xf(3x)\,dx = \int_0^3 tf(t)\,dt, then$k is equal to (A)3 (B)9 (C) $\frac{1}{3}$ (D) $\frac{1}{9}$
95.	$\int_1^{\frac{3}{2}}[2x+1]\,dx$ is equal to (A)$\frac{3}{2}$ (B)$\frac{1}{2}$ (C) 3 (D) 1
96.	$\int_{-1}^{3}\left\{\tan^{-1}\left(\frac{x}{x^2+1}\right)+\tan^{-1}\left(\frac{x^2+1}{x}\right)\right\}dx$ = (A)π (B)$\frac{\pi}{4}$ (C)$\frac{\pi}{2}$ (D) 2π
97.	If $f(x)=\tan x - tan^3x + tan^5x - \cdots\ldots\ldots\ldots\infty and\ 0<x<\frac{\pi}{4} then \int_0^{\frac{\pi}{4}} f(x)dx$ is equal to

	(A)0 (B)$\frac{1}{4}$ (C) $-\frac{1}{4}$ (D) 1
98.	If $\int_0^{\frac{\pi}{2}} sin^6 x dx = \frac{5\pi}{32}$, then $\int_{-\pi}^{\pi}(sin^6 x + cos^6 x)dx$ = (A)$\frac{5\pi}{2}$ (B)$\frac{5\pi}{4}$ (C)$\frac{5\pi}{8}$ (D)$\frac{5\pi}{16}$
99.	$\int_0^1 \tan^{-1}\left(\frac{1}{x^2-x+1}\right) dx$ = (A)$\log 10$ (B)$\log 20$ (C)$\frac{\pi}{2} - \log 2$ (D)$\frac{\pi}{2} + \log 20$
100.	$\int_{-1}^{1} sin^5 x.cos^4 x\, dx$ (a) 0 (b) 4/5 (c) 1/5 (d) 1/4

101.	$\int_0^{\frac{\pi}{2}} \frac{sin^4x}{sin^4x + cos^4x} dx$ (a) $\frac{\pi}{2}$ (b) $\frac{\pi}{3}$ (c) $\frac{\pi}{4}$ (d)) 0
102.	$\int_0^{\frac{\pi}{2}} log \frac{(4+3\sin x)}{(4+3\cos x)} \quad dx$ (a) $\frac{1}{2}$ (b) $\frac{\pi}{4}$ (c) 0 (d) 1
103.	If $f(x)$ and $g(x)$ are defined as f (x) = f (a – x) and $g(x) + g(a-x) = 4$, then $\int_0^a f(x)g(x)dx =$ (a) $\int_0^a f(x)dx$ *(b)* $\int_0^a g(x)dx$ *(c)* $2\int_0^a f(x)dx$ (d) $2\int_0^a g(x)dx$
104.	$\int_0^{\pi/4} tan^2\ x dx$ (a)1 (b)$\pi/4$ (c) 1-$\pi/4$ (d)-$\pi/4$
105.	$Evaluate \int_{-1}^{1} 2^x\, dx$ (a) 3/log2 (b)1/log2 (c)3/(2log2) (d)3/log2
106.	$\int_0^{\pi/4} \tan x\, dx$

	(a) (1/2) log2 (b) 2log2 (c)log2 (d) log3
107.	$\int_0^{1/2} \frac{dx}{\sqrt{1-x^2}}$ (a) π/6 (b) π/2 (c) π/3 (d) π
108.	$\int_0^1 \frac{2x\,dx}{1+x^4}$ (a) π/6 (b) π/4 (c) π/2 (d) π/3
109.	$\int_{-\pi/4}^{\pi/4} \operatorname{cosec}^2 x\,dx$ **(a)** 2 (b) -2 (c) 1 (d) 3
110.	$\int_0^k \frac{dx}{2+8x^2} = \frac{\pi}{16}$ then find k (a) 1 (b) 2 (c) -1/2 (d) 1/2
111.	$\int_0^1 [2x]\,dx$ (a) 1 (b) 2 (c) -2 (d)1/2
112.	$\int_0^{\pi/2} \log(\tan x)\,dx$ (a) 0 (b) 1 (c) 2 (d) 3
113.	$\int_0^{\pi/2} \frac{\sin x\,dx}{\sin x+\cos x}$ (a) π/4 (b) π/3 (c) π/2 (d) π

114.	$\int_0^a \frac{\sqrt{x}\,dx}{\sqrt{x}+\sqrt{a-x}}$ (a) a (b) a/2 (c) a/3 (d) a/4
115.	$\int_0^1 cot^{-1}(1-x+x^2)\,dx$ (a) π/6 (b) π/2 – log2 (c)log2 (d)log2 - π/2
116.	$\int_0^a 3x^2\,dx = 8$ find the value of a (a) 0 (b) 1 (c) 2 (d) 3
117.	$\int_0^4 \lvert x-1\rvert\,dx$ (a) 3 (b) 4 (c) 5 (d) -5
118.	$\int_{-\frac{\pi}{2}}^{\frac{\pi}{2}} \sin^7 x\,dx$ (a) 1 (b) -1 (c) 2 (d) 0
119.	Use the fundamental theorem of calculus to solve the problem below. Evaluate $\int_a^b f(x)dx$ given that $F(x) = x^2$ and $\frac{dF}{dx} = f(x)$ (a) $b^2 - a^2$ (b) $(b - a)^2$ (c) $x^a - x^b$ (d) $b^2 + a^2$
120.	Evaluate $\int_0^{\pi} sinx\,dx$ (a) 1 (b) 0

	(c) 2 (d) can't determine
121.	What is the reverse integral property of definite integrals? (a) $-\int_a^b f(x)dx=-\int_a^b g(x)dx$ (b) $-\int_a^b f(x)dx = -\int_b^a f(x)dx$ (c) $-\int_a^b f(x)dx = \int_a^b g(x)dx$ (d) $\int_a^b f(x)dx = -\int_b^a f(x)dx$
122.	Identify the zero-length interval property. (a) $\int_a^b f(x)dx = -1$ (b) $\int_a^b f(x)dx = 0$ (c) $\int_a^b f(x)dx = 1$ (d) $\int_a^b f(x)dx = 0.1$
123.	Compute $\int_3^2 f(t)dt$ if $\int_2^3 f(x)dx = 4$. (a) -4 (b) 2 (c) 4 (d) can't determine
124.	Find $\int_0^1 20\ x^3 e^{x^4}$ dx. (a) (e-1) (b) 5(e+1) (c) 5e (d) 5(e-1)
125.	If $\int_0^1 (3x^2 + 2x + k)\,dx = 0$. find the value of k. (a) -3 (b) $\frac{1}{2}$ (c) 4 (d) -2
126.	Find $\int_0^{3/2} [x]dx$ (a)1 $(b)\frac{1}{2}$ (c) 5 (d) 0
127.	Evaluate:- $\int_0^1 log(\frac{1-x}{x})\,dx$ (a) -2

	(b) 3 (c) 5 (d) 0
128.	Evaluate:– $\int_{-\pi/2}^{\pi/2} \lvert \sin x \rvert \, dx$ (a) –1/2 (b) 2 (c) 1/2 (d) 0
129.	Evaluate:– $\int_0^{\pi/2} \frac{\sqrt{\sin x}}{\sqrt{\cos x}+\sqrt{\sin x}} \, dx$ (a) $\pi/2$ (b) $\pi/4$ (c) π (d) can't determine
130.	Evaluate:– $\int_{\pi/2}^{\pi} e^x \left(\frac{1-\sin x}{1-\cos x}\right) dx$ (a) $e^{\pi/2}$ (b) $e^{-\pi/2}$ (c) e^{π} (d) can't determine
131.	Evaluate:– $\int_{-1}^{1} x^{17} \cos^4 x \, dx$ (a) –1/2 (b) 3 (c) 1 (d) 0
132.	$\int_0^{2/3} \frac{dx}{4+9x^2}$ equals (a) $\frac{\pi}{6}$ (b) $\frac{\pi}{12}$ (c) $\frac{\pi}{24}$ (d) $\frac{\pi}{4}$
133.	$\int_0^{\pi} \frac{x dx}{1+\sin x}$ equals (a) π

	(b) 0 (c) $\pi/2$ (d) $\frac{\pi}{4}$
134.	$\int_{-\pi}^{\pi} tanx\ sec^2x\ dx$ equals (a) 1 (b) -1 (c) 0 (d) 2
135.	$\int_0^{\frac{\pi}{2}} e^x\ (sinx + cosx)dx$ (a) $e^{\frac{\pi}{2}}$ (b) $e^{\frac{\pi}{2}}$ -1 (c) 0 (d) $2e^{\frac{\pi}{2}}$
136.	$\int_0^{2\pi} \lvert cosx\rvert dx$ (a) 3 (b) 2 (c) 1 (d) 4
137.	$\int_a^b \frac{f(x)dx}{f(a+b-x)+f(x)}$ equals (a) $\frac{a-b}{2}$ (b) $\frac{b-a}{2}$ (c) $\frac{a-b}{4}$ (d) $\frac{b-a}{4}$
138.	$\int_0^{1.5} [x]dx$ (a) 0.5 (b) 1.5 (c) 0 (d) 1.25
139.	$\int_1^2 \frac{xdx}{(x+1)(x+2)}$ equals (a) $\frac{1}{2}\log\frac{32}{27}$

	(b) $\frac{1}{2}\log\frac{27}{32}$ (c) $\log\frac{32}{27}$ (d) $\log\frac{27}{32}$
140.	$\int_0^1 \sin^{-1}\left(\frac{2x}{1+x^2}\right)\,dx$ (a) $\frac{\pi}{2}-\log 2$ (b) $\frac{\pi}{8}-\log 2$ (c) $\frac{\pi}{4}-\log 2$ (d) $\frac{\pi}{6}-\log 2$
141.	$\int_{-1}^{1} 5x^4\sqrt{x^5+1}$ dx (a) 0 (b) $\frac{4\sqrt{2}}{3}$ (c) $\frac{3\sqrt{2}}{4}$ (d) $\frac{2\sqrt{2}}{3}$
142.	If $f(x)=\varphi'(x)$ i.e. Anti – derivative of function f(x) is ϕ(x). Then the value of the following integral $\int_a^b f(x)dx$ is (a) $\phi(a)-\phi(b)$ (b) $\phi(a)+\phi(b)$ (c) $\phi(b)-\phi(a)$ (d) $\phi(b).\phi(a)$
143.	The value of $\int_0^1 \frac{1}{\sqrt{1+x}+\sqrt{x}}dx$ is (a) $\frac{4}{3}\left(\sqrt{2}+1\right)$ (b) $\frac{2}{3}\left(\sqrt{2}+1\right)$ (c) $\frac{2}{3}\left(\sqrt{2}-1\right)$ (d) $\frac{4}{3}\left(\sqrt{2}-1\right)$
144.	The value of $\int_0^1 \left(xe^x+\sin\frac{\pi x}{4}\right)dx$ is

	(a) $1-\frac{4}{\pi}+\frac{2\sqrt{2}}{\pi}$ (b) $1+\frac{4}{\pi}-\frac{2\sqrt{2}}{\pi}$ (c) $1-\frac{2\sqrt{2}}{\pi}$ (d) $1+\frac{2\sqrt{2}}{\pi}$
145.	The value of $\int_{\frac{\pi}{6}}^{\frac{\pi}{3}}\frac{\sin x+\cos x}{\sqrt{\sin 2x}}dx$ is (a) $2\sin^{-1}\frac{\sqrt{3}-1}{2}$ (b) $\sin^{-1}\frac{\sqrt{3}-1}{2}$ (c) $2\sin^{-1}\frac{\sqrt{3}+1}{2}$ (d) $\sin^{-1}\frac{\sqrt{3}+1}{2}$
146.	The value of $\int_{-1}^{2}\lvert x^3-x\rvert dx$ is (a) $\frac{1}{4}$ (b) $-\frac{1}{4}$ (c) $\frac{11}{4}$ (d) $-\frac{11}{4}$
147.	The value of $\int_{\frac{\pi}{6}}^{\frac{\pi}{3}}\frac{1}{1+\sqrt{\cot x}}dx$ is (a) $\frac{\pi}{6}$ (b) $\frac{\pi}{12}$ (c) $\frac{\pi}{3}$ (d) None of these
148.	The value of $\int_0^{\pi}\log(1+\cos x)\,dx$ is (a) $-\pi\log 2$

	(b) $\pi \log 2$ (c) $-\frac{\pi}{2}\log 2$ (d) $\frac{\pi}{2}\log 2$
149.	The value of $\int_{-\frac{\pi}{4}}^{\frac{\pi}{4}} x^3 \sin^4 x \, dx$ is (a) $\int_0^{\frac{\pi}{4}} x^3 \sin^4 x \, dx$ (b) $2\int_0^{\frac{\pi}{4}} x^3 \sin^4 x \, dx$ (c) $\int_0^{\frac{\pi}{2}} x^3 \sin^4 x \, dx$ (d) 0
150.	The value of $\int_0^{\frac{\pi}{2}} (2\log \sin x - \log \sin 2x) dx$ is (a) $-\pi \log 2$ (b) $\pi \log 2$ (c) $-\frac{\pi}{2}\log 2$ (d) $\frac{\pi}{2}\log 2$
151.	The value of $\int_1^2 \frac{5x^2}{x^2+4x+3} dx$ (a) $\log\frac{2}{3}+\frac{2}{3}$ (b) $\log\frac{2}{3}-\frac{2}{3}$ (c) $\frac{2}{3}\log\frac{2}{3}$ (d) $\frac{2}{3}$
152.	$\int_0^{\frac{\pi}{2}} \frac{\cos x}{(2+\sin x)(1+\sin x)} dx$ is equal to (a) $\log\frac{2}{3}$ (b) $\log\frac{3}{2}$ (c) $\log\frac{3}{4}$

	(d) $\log \frac{4}{3}$

ANSWERS

Q.NO	ANS	Q.NO	ANS	Q.NO	ANS	Q.NO	ANS	Q.NO	ANS
1	c	36	a	71	c	106	a	141	d
2	d	37	a	72	a	107	a	142	c
3	a	38	b	73	c	108	b	143	d
4	b	39	a	74	a	109	b	144	b
5	b	40	b	75	d	110	d	145	a
6	a	41	a	76	b	111	d	146	c
7	b	42	c	77	b	112	a	147	b
8	b	43	a	78	a	113	a	148	a
9	a	44	d	79	a	114	b	149	d
10	b	45	c	80	a	115	b	150	c
11	d	46	a	81	a	116	c	151	a
12	b	47	a	82	b	117	c	152	d
13	a	48	d	83	a	118	d		
14	b	49	a	84	c	119	a		
15	a	50	a	85	C	120	c		
16	d	51	b	86	A	121	d		
17	a	52	c	87	B	122	b		
18	a	53	a	88	A	123	c		
19	a	54	d	89	D	124	d		
20	c	55	b	90	C	125	d		
21	c	56	a	91	C	126	b		
22	b	57	b	92	C	127	d		
23	a	58	b	93	D	128	b		
24	b	59	c	94	B	129	b		
25	a	60	a	95	A	130	a		
26	a	61	c	96	D	131	d		
27	b	62	a	97	B	132	c		
28	c	63	b	98	B	133	a		
29	c	64	b	99	C	134	c		
30	c	65	b	100	a	135	a		
31	d	66	a	101	c	136	d		
32	b	67	b	102	c	137	b		
33	d	68	d	103	c	138	a		
34	c	69	c	104	c	139	c		
35	b	70	b	105	c	140	a		