Seat No. / Enrolment No.:

GUJARAT TECHNOLOGICAL UNIVERSITY

Diploma Engineering – SEMESTER – 2(CtoD) – EXAMINATION – Summer-2024

Subject Code: C320002 **Date: 07-06-2024**

Subject Name: Advanced Mathematics (Group-1)

Time: 10:30 AM TO 12:00 PM **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make Suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**
4. **Use of programmable & Communication aids are strictly prohibited.**
5. **Use of non-programmable scientific calculator is permitted.**
6. **English version is authentic.**
7. **Use only OMR to answer this question paper.**

No.	Question Text and Option. પ્રશ્ન અને વિકલ્પો.			
1.	$\sqrt{-4}$ = _____			
	A.	2	B.	Not possible
	C.	-2	D.	$\pm$2i
૧.	$\sqrt{-4}$ = _____			
	A.	2	B.	શકય નથી
	C.	-2	D.	$\pm$2i
2.	If complex number $z = 4\text{-}3i$ then $\lvert z\rvert$= □____.			
	A.	1/5	B.	–5
	C.	5	D.	25
૨.	જો સંકર સંખ્યા $z = 4\text{-}3i$ હોય તો $\lvert z\rvert$= □____.			
	A.	1/5	B.	–5
	C.	5	D.	25
3.	*If* $z_1 = 2 + i$ and $z_2 = 3 - i$ *then* $\mathrm{Re}(z_1 + z_2)$ =_____			
	A.	-5	B.	5
	C.	1/5	D.	-1/5
૩	જો $z_1 = 2 + i$ અને $z_2 = 3 - i$ હોય, તો $\mathrm{Re}(z_1 + z_2)$ =__.			
	A.	-5	B.	5
	C.	1/5	D.	-1/5
4.	*If z is* a *complex number* then z + $\bar{z}$ = _____			
	A.	2iRe (z)	B.	2Re (z)
	C.	2iIm (z)	D.	2Im (z)
૪.	જો z એક સંકર સંખ્યા હોય તો z + $\bar{z}$ = _____			
	A.	2iRe (z)	B.	2Re (z)
	C.	2iIm (z)	D.	2Im (z)
5.	arg(1+i) = _____.			
	A.	π	B.	0
	C.	$\pi/4$	D.	2π
૫.	arg(1+i) = _____.			
	A.	π	B.	0
	C.	$\pi/4$	D.	2π
6.	If $z_1 = 3 + i, z_2 = 1 + 5i$ then $z_1 - z_2$ = _____			

	A.	2-4i	B.	2+4i
	C.	4+4i	D.	2-6i
૬.	જો $z_1 = 3 + i, z_2 = 1 + 5i$ હોય તો $z_1 - z_2 =$ _____			
	A.	2-4i	B.	2+4i
	C.	4+4i	D.	2-6i
7.	If $z = 1 + 7i$ then $\overline{z} =$ __			
	A.	$1 + 7i$	B.	$1 - 7i$
	C.	$-1 + 7i$	D.	$-1 - 7i$
૭.	If $z = 1 + 7i$ then $\overline{z} =$ __			
	A.	$1 + 7i$	B.	$1 - 7i$
	C.	$-1 + 7i$	D.	$-1 - 7i$
8.	$i^4 =$ _____			
	A.	1	B.	–1
	C.	i	D.	$-i$
૮.	$i^4 =$ _____			
	A.	1	B.	–1
	C.	i	D.	$-i$
9.	If $z = 3 - i$ then Re(z) = _____			
	A.	2	B.	3
	C.	1	D.	5
૯.	જો $z = 3 - i$ હોય તો Re(z) = _____			
	A.	2	B.	3
	C.	1	D.	5
10.	If $z_1 = 3 - 2i, z_2 = -i$ then $z_1 \cdot z_2 =$ _____			
	A.	$3i - 2$	B.	$3i + 2$
	C.	$-3i - 2$	D.	$-3i + 2$
૧૦.	જો $z_1 = 3 - 2i, z_2 = -i$ હોય તો $z_1 \cdot z_2 =$ _____			
	A.	$3i - 2$	B.	$3i + 2$
	C.	$-3i - 2$	D.	$-3i + 2$
11.	If $f(x) = x^2 - 4$ then $f(2) =$ ___			
	A.	0	B.	2
	C.	1	D.	4
૧૧.	જો $f(x) = x^2 - 4$ હોય તો $f(2) =$ ___			
	A.	0	B.	2
	C.	1	D.	4
12.	If $f(x) = \sin x$ then $f(x) - f(-x) =$ ___			
	A.	$-2 \sin x$	B.	0
	C.	1	D.	$2 \sin x$
૧૨.	જો $f(x) = \sin x$ હોય તો $f(x) - f(-x) =$ _____			
	A.	$-2 \sin x$	B.	0
	C.	1	D.	$2 \sin x$
13.	If $f(x) = \log x$ then $f(xy) =$ _____			
	A.	$f(x)f(y)$	B.	$f(x) + f(y)$
	C.	$f(x) - f(y)$	D.	$\frac{f(x)}{f(y)}$
૧૩.	જો $f(x) = \log x$ હોય તો $f(xy) =$ _____			

	A.	$f(x)f(y)$	B.	$f(x) + f(y)$
	C.	$f(x) - f(y)$	D.	$\frac{f(x)}{f(y)}$
14.	If $f(x) = \tan x$ then $f\left(\frac{\pi}{2} - x\right) =$ _____			
	A.	$\tan x$	B.	$\cot x$
	C.	$-\tan x$	D.	$-\cot x$
૧૪.	જો $f(x) = \tan x$ હોય તો $f\left(\frac{\pi}{2} - x\right) =$ _____			
	A.	$\tan x$	B.	$\cot x$
	C.	$-\tan x$	D.	$-\cot x$
15.	If $f(x) = e^x$ then $f(0) =$ _____			
	A.	1	B.	0
	C.	-1	D.	None of these
૧૫.	જો $f(x) = e^x$ હોય તો $f(0) =$ _____			
	A.	1	B.	0
	C.	-1	D.	આ પૈકી એક પણ નહીં
16.	If $f(x) = x^2$ *and* $g(x) = \log_2 x$ then $gof(2) =$ _____			
	A.	-1	B.	2
	C.	1	D.	0
૧૬.	જો $f(x) = x^2$ *and* $g(x) = \log_2 x$ હોય તો $gof(2) =$ _____			
	A.	-1	B.	2
	C.	1	D.	0
17.	$\lim_{x\to 1} \frac{x^2 - 1}{x - 1} =$ _____			
	A.	2	B.	1
	C.	0	D.	-2
૧૭.	$\lim_{x\to 1} \frac{x^2 - 1}{x - 1} =$ _____			
	A.	2	B.	1
	C.	0	D.	-2
18.	$\lim_{x\to 0} \frac{\tan x}{x} =$ ____			
	A.	0	B.	$\tan x$
	C.	$\cot x$	D.	1
૧૮.	$\lim_{x\to 0} \frac{\tan x}{x} =$ ____			
	A.	0	B.	$\tan x$
	C.	$\cot x$	D.	1
19.	$\lim_{x\to 0} \frac{7^x - 1}{x} =$ ____			
	A.	$\log_7 e$	B.	1
	C.	0	D.	$\log_e 7$
૧૯.	$\lim_{x\to 0} \frac{7^x - 1}{x} =$ ____			
	A.	$\log_7 e$	B.	1
	C.	0	D.	$\log_e 7$
20.	$\lim_{n\to\infty} \frac{2n + 3}{n} =$ ____			
	A.	0	B.	2
	C.	3	D.	∞

૨૦.	$\lim_{n\to\infty} \frac{2n+3}{n} =$ ____			
	A.	0	B.	2
	C.	3	D.	∞
21.	$\lim_{x\to 0} \frac{2x}{\sin x} =$ ____			
	A.	0	B.	$\sin x$
	C.	2	D.	$\cos x$
૨૧.	$\lim_{x\to 0} \frac{2x}{\sin x} =$ ____			
	A.	0	B.	$\sin x$
	C.	2	D.	$\cos x$
22.	$\lim_{x\to 0}(1-x)^{1/x} =$ ____			
	A.	$1/e$	B.	0
	C.	e	D.	$-$e
૨૨.	$\lim_{x\to 0}(1-x)^{1/x} =$ ____			
	A.	$1/e$	B.	0
	C.	e	D.	$-$e
23.	If $f(x) = x^n$ then $f'(x) =$ _____			
	A.	$x^n \log_n x$	B.	n
	C.	$n \log x$	D.	nx^{n-1}
૨૩.	જો $f(x) = x^n$ હોય તો $f'(x) =$ _____			
	A.	$x^n \log_n x$	B.	n
	C.	$n \log x$	D.	nx^{n-1}
24.	$y = \log(\cos x)$ then $\frac{dy}{dx}$ =_____			
	A.	$\cot x$	B.	$-\cot x$
	C.	$-\tan x$	D.	$\tan x$
૨૪.	$y = \log(\cos x)$ હોય તો $\frac{dy}{dx}$ =_____			
	A.	$\cot x$	B.	$-\cot x$
	C.	$-\tan x$	D.	$\tan x$
25.	If $f(x) = tanx$ then $f'(x) =$ _____			
	A.	$secx$	B.	sec^2x
	C.	$\cot x$	D.	$secx\ tanx$
૨૫.	જો $f(x) = tanx$ હોય તો $f'(x) =$ _____			
	A.	$secx$	B.	sec^2x
	C.	$\cot x$	D.	$secx\ tanx$
26.	$f(x) = e^{2x}$ then $f'(0) =$ _____			
	A.	1	B.	0
	C.	2	D.	e^2
૨૬.	$f(x) = e^{2x}$ હોય તો $f'(0) =$ _____			
	A.	1	B.	0
	C.	2	D.	e^2
27.	If $y = x^2 + 2x - 1$ *then* $\frac{d^2y}{dx^2}$ =_____			
	A.	2	B.	0
	C.	1	D.	2x
૨૭.	જો $y = x^2 + 2x - 1$ હોય તો $\frac{d^2y}{dx^2}$ =_____			

	A.	2	B.	0
	C.	1	D.	2x
28.	$\frac{d}{dx}(5^x) =$ _____			
	A.	$5^x \log_5 e$	B.	$5^x \log_e 5$
	C.	$5^x \log_e x$	D.	$\log_e 5$
૨૮.	$\frac{d}{dx}(5^x) =$ _____			
	A.	$5^x \log_5 e$	B.	$5^x \log_e 5$
	C.	$5^x \log_e x$	D.	$\log_e 5$
29.	If $y = \log(x+b)$ then $\frac{dy}{dx}$ =_____			
	A.	$\frac{1}{x+b}$	B.	$\frac{x}{x+b}$
	C.	$\frac{b}{x+b}$	D.	*none of these*
૨૯.	જો $y = \log(x+b)$ હોય તો $\frac{dy}{dx}$ =_____			
	A.	$\frac{1}{x+b}$	B.	$\frac{x}{x+b}$
	C.	$\frac{b}{x+b}$	D.	આ પૈકી કોઇ પણ નહીં
30.	If $xy = 1$ then $\frac{dy}{dx}$ =_____			
	A.	$-y/x$	B.	$-1/x^2$
	C.	x/y	D.	$-1/x$
૩૦.	જો $xy = 1$ હોય તો $\frac{dy}{dx}$ =_____			
	A.	$-y/x$	B.	$-1/x^2$
	C.	x/y	D.	$-1/x$
31.	If $x = cos\,\theta, y = sin\,\theta$ then $\frac{dy}{dx}$ =_____			
	A.	$-\tan\theta$	B.	$\tan\theta$
	C.	$\cot\theta$	D.	$-\cot\theta$
૩૧.	જો $x = cos\,\theta, y = sin\,\theta$ હોય તો $\frac{dy}{dx}$ =_____			
	A.	$-\tan\theta$	B.	$\tan\theta$
	C.	$\cot\theta$	D.	$-\cot\theta$
32.	$y = 1 - sin^2 x$ then $\frac{dy}{dx}$ =_____			
	A.	$\cos^2 x$	B.	$\sin 2x$
	C.	$2\sin x$	D.	$-\sin 2x$
૩૨.	$y = 1 - sin^2 x$ then $\frac{dy}{dx}$ =_____			
	A.	$\cos^2 x$	B.	$\sin 2x$
	C.	$2\sin x$	D.	$-\sin 2x$
33.	If *Equation of motion* of a particle *is* $S(t) = 2t^3 + 3t^2 - 12t + 5$ *then velocity at* $t = 1$ sec is _____			
	A.	6	B.	0
	C.	2	D.	4
૩૩.	એક કણની ગતિ નું સમીકરણ $S(t) = 2t^3 + 3t^2 - 12t + 5$ હોય તો $t = 1$ સેકંડ માટે વેગ = _____			
	A.	6	B.	0
	C.	2	D.	4
	For function $f(x)$, if_____then $f(x)$ has minimum at $x = 3$.			

34.	A.	$f'(3) = 0, f"(3) > 0$	B.	$f'(3) = 0, f"(3) < 0$
	C.	$f'(3) < 0, f"(3) > 0$	D.	$f'(3) < 0, f"(3) < 0$
૩૪.	વિધેય $f(x)$ માટે જો _____ હોય તો $f(x)$,$x = 3$ આગળ મહત્તમ થાય.			
	A.	$f'(3) = 0, f"(3) > 0$	B.	$f'(3) = 0, f"(3) < 0$
	C.	$f'(3) < 0, f"(3) > 0$	D.	$f'(3) < 0, f"(3) < 0$
35.	$If\ x - y = 1\ then\ \frac{dy}{dx} =$ _____			
	A.	0	B.	$6 - x$
	C.	-1	D.	1
૩૫.	જો $x - y = 1$ હોય તો $\frac{dy}{dx} =$ _____			
	A.	0	B.	$6 - x$
	C.	-1	D.	1
36.	$\frac{d}{dx}(x^x) =$ _____			
	A.	$x - logx$	B.	$x + logx$
	C.	$x^x(1 + logx)$	D.	$x \cdot x^{x-1}$
૩૬.	$\frac{d}{dx}(x^x) =$ _____			
	A.	$x - logx$	B.	$x + logx$
	C.	$x^x(1 + logx)$	D.	$x \cdot x^{x-1}$
37.	$\frac{d}{dx}(xe^x - 2) =$ _____			
	A.	$e^x(x - 1)$	B.	$e^x(x + 1)$
	C.	$e^x - 2$	D.	$e^x - 1$
૩૭.	$\frac{d}{dx}(xe^x - 2) =$ _____			
	A.	$e^x(x - 1)$	B.	$e^x(x + 1)$
	C.	$e^x - 2$	D.	$e^x - 1$
38.	$\frac{d}{dx}(sec^2x - tan^2x) =$ _____			
	A.	1	B.	0
	C.	-1	D.	none of these
૩૮.	$\frac{d}{dx}(sec^2x - tan^2x) =$ _____			
	A.	1	B.	0
	C.	-1	D.	આ પૈકી એક પણ નહીં
39.	If $y = \log(\sin\frac{\pi}{2})$ then $\frac{dy}{dx} =$ _____			
	A.	$\cot\frac{\pi}{2}$	B.	$-\cot\frac{\pi}{2}$
	C.	$\tan\frac{\pi}{2}$	D.	none of these
૩૯.	જો $y = \log(\sin\frac{\pi}{2})$ હોય તો $\frac{dy}{dx} =$ _____			
	A.	$\cot\frac{\pi}{2}$	B.	$-\cot\frac{\pi}{2}$
	C.	$\tan\frac{\pi}{2}$	D.	આ પૈકી એક પણ નહીં
40.	$\frac{d}{dx}(e^{logx}) =$ _____			
	A.	$\frac{1}{x^2}$	B.	$-\frac{1}{x^2}$

	C.	1	D.	x
४०.	$\frac{d}{dx}(e^{logx}) =$ _____			
	A.	$\frac{1}{x^2}$	B.	$-\frac{1}{x^2}$
	C.	1	D.	x
41.	$\int 8x^7\ dx =$_____+c			
	A.	x^8	B.	$\frac{x^7}{7}$
	C.	x^6	D.	$\frac{x^8}{8}$
४१.	$\int 8x^7\ dx =$_____+c			
	A.	x^8	B.	$\frac{x^7}{7}$
	C.	x^6	D.	$\frac{x^8}{8}$
42.	$\int_{-2}^{2} x^3\ dx$=_____+c			
	A.	16	B.	32
	C.	0	D.	8
४२.	$\int_{-2}^{2} x^3\ dx$=_____+c			
	A.	16	B.	32
	C.	0	D.	8
43.	$\int(1 + cot^2 x)\ dx =$_____ + c			
	A.	$-\cot x$	B.	$\cot x$
	C.	$x + \text{cosec}\, x$	D.	$1 - co\sec x$
४३.	$\int(1 + cot^2 x)\ dx =$_____ + c			
	A.	$-\cot x$	B.	$\cot x$
	C.	$x + \text{cosec}\, x$	D.	$1 - co\sec x$
44.	$\int_0^2(2x - 2)\ dx =$ _____ $+ c$			
	A.	1	B.	0
	C.	2	D.	-1
४४.	$\int_0^2(2x - 2)\ dx =$ _____ $+ c$			
	A.	1	B.	0
	C.	2	D.	-1
45.	$\int \frac{sinx}{cosx}\ dx =$_____+c			
	A.	$tanx$	B.	$\log\|x\|$
	C.	$sec^2 x$	D.	$\log\|secx\|$
४५.	$\int \frac{sinx}{cosx}\ dx =$_____+c			
	A.	$tanx$	B.	$\log\|x\|$
	C.	$sec^2 x$	D.	$\log\|secx\|$
46.	$\int\ a^x \log_e a\ dx =$_____+ c			
	A.	$\frac{a^x}{\log_e a}$	B.	a^x
	C.	$\log_e a$	D.	none of these

૪૬.	$\int a^x \log_e a \ dx$ =_____+ c			
	A.	$\frac{a^x}{\log_e a}$	B.	a^x
	C.	$\log_e a$	D.	આ પૈકી એક પણ નહીં
47.	$\int \frac{1}{\sqrt{1-x^2}} dx$=_____+ c			
	A.	$\sin^{-1} x$	B.	$\cos^{-1} x$
	C.	$\tan^{-1} x$	D.	$\cot^{-1} x$
૪૭.	$\int \frac{1}{\sqrt{1-x^2}} dx$=_____+ c			
	A.	$\sin^{-1} x$	B.	$\cos^{-1} x$
	C.	$\tan^{-1} x$	D.	$\cot^{-1} x$
48.	$\int \frac{\log x}{x} dx$=_____+ c			
	A.	$2(\log x)^2$	B.	$(\log x)^2$
	C.	$\log(x^2)$	D.	$\frac{1}{2}(\log x)^2$
૪૮.	$\int \frac{\log x}{x} dx$=_____+ c			
	A.	$2(\log x)^2$	B.	$(\log x)^2$
	C.	$\log(x^2)$	D.	$\frac{1}{2}(\log x)^2$
49.	$\int_2^5 x^2 \ dx$=_____+ c			
	A.	39	B.	117
	C.	133	D.	125
૪૯.	$\int_2^5 x^2 \ dx$=_____+ c			
	A.	39	B.	117
	C.	133	D.	125
50.	$\int_0^1 \frac{1}{1+x^2} dx$=_____+ c			
	A.	π	B.	$\pi/2$
	C.	$\pi/4$	D.	$\pi/8$
૫૦.	$\int_0^1 \frac{1}{1+x^2} dx$=_____+ c			
	A.	π	B.	$\pi/2$
	C.	$\pi/4$	D.	$\pi/8$
51.	$\int \cos x \ dx$ =_____+c			
	A.	$\sin x$	B.	$-\sin x$
	C.	$\cos x$	D.	$-\cos x$
૫૧.	$\int \cos x \ dx$ =_____+c			
	A.	$\sin x$	B.	$-\sin x$
	C.	$\cos x$	D.	$-\cos x$
52.	$\int a\cos(ax+b)\,dx =$ _____ $+ c$			
	A.	$\sin(ax+b)$	B.	$\frac{\sin(ax+b)}{a}$
	C.	$\frac{\sin(ax+b)}{b}$	D.	$\frac{\sin(ax-b)}{b}$

૫૨.	$\int a\cos(ax+b)\,dx = \_\_\_\_\_ + c$			
	A.	$\sin(ax+b)$	B.	$\frac{\sin(ax+b)}{a}$
	C.	$\frac{\sin(ax+b)}{b}$	D.	$\frac{\sin(ax-b)}{b}$
53.	$\int_0^1 (e^x+1)\,dx$=_____+ c			
	A.	e^{-1}	B.	$e-1$
	C.	$1-e$	D.	e
૫૩.	$\int_0^1 (e^x+1)\,dx$=_____+ c			
	A.	e^{-1}	B.	$e-1$
	C.	$1-e$	D.	e
54.	Area of the region covered by the curve $x^2+y^2=16$ is _____			
	A.	2π	B.	16π
	C.	4π	D.	4
૫૪.	વક્ર $x^2+y^2=16$ થી ઘેરાતા પ્રદેશનું ક્ષેત્રફળ_____ છે.			
	A.	2π	B.	16π
	C.	4π	D.	4
55.	$\int \frac{1}{a^2+x^2}\,dx = \_\_\_\_\_ + c$			
	A.	$\frac{1}{a}\cos^{-1}\left(\frac{x}{a}\right)$	B.	$\tan^{-1}\left(\frac{x}{a}\right)$
	C.	$\frac{1}{a}\tan^{-1}\left(\frac{x}{a}\right)$	D.	$\frac{1}{a}\sin^{-1}\left(\frac{x}{a}\right)$
૫૫.	$\int \frac{1}{a^2+x^2}\,dx = \_\_\_\_\_ + c$			
	A.	$\frac{1}{a}\cos^{-1}\left(\frac{x}{a}\right)$	B.	$\tan^{-1}\left(\frac{x}{a}\right)$
	C.	$\frac{1}{a}\tan^{-1}\left(\frac{x}{a}\right)$	D.	$\frac{1}{a}\sin^{-1}\left(\frac{x}{a}\right)$
56.	$\int_{-1}^{1}(x^4+1)dx = \_\_\_\_\_$			
	A.	$\frac{12}{5}$	B.	$\frac{5}{12}$
	C.	0	D.	none of these
૫૬.	$\int_{-1}^{1}(x^4+1)dx = \_\_\_\_\_$			
	A.	$\frac{12}{5}$	B.	$\frac{5}{12}$
	C.	0	D.	આ પૈકી એક પણ નહીં
57.	The degree of the differential equation $\left(\frac{d^3y}{dx^3}\right)^2+\left(\frac{d^2y}{dx^2}\right)^4+y=0$ is _____			
	A.	1	B.	2
	C.	3	D.	4
૫૭.	વિકલ સમીકરણ $\left(\frac{d^3y}{dx^3}\right)^2+\left(\frac{d^2y}{dx^2}\right)^4+y=0$ નું પરિમાણ _____ છે.			

	A.	1	B.	2
	C.	3	D.	4
58.	The order of the differential equation $\frac{d^2y}{dx^2} + \sin\left(\frac{dy}{dx}\right) + 3y = 0$ is _____			
	A.	2	B.	1
	C.	0	D.	undefined
૫૮.	વિકલ સમીકરણ $\frac{d^2y}{dx^2} + \sin\left(\frac{dy}{dx}\right) + 3y = 0$ ની કક્ષા _____ છે			
	A.	2	B.	1
	C.	0	D.	અવ્યાખ્યાયીત
59.	The Order of the differential equation $\left(\frac{d^2y}{dx^2}\right)^6 + 2\left(\frac{dy}{dx}\right)^5 + 7y = 0$ is			
	A.	1	B.	2
	C.	6	D.	3
૫૯.	વિકલ સમીકરણ $\left(\frac{d^2y}{dx^2}\right)^6 + 2\left(\frac{dy}{dx}\right)^5 + 7y = 0$ ની કક્ષા _____ છે.			
	A.	1	B.	2
	C.	6	D.	3
60.	The degree of the differential equation $\left(\frac{d^2y}{dx^2}\right)^3 + 3\left(\frac{dy}{dx}\right)^2 + y = 0$ is _____			
	A.	2	B.	1
	C.	0	D.	3
૬૦.	વિકલ સમીકરણ $\left(\frac{d^2y}{dx^2}\right)^3 + 3\left(\frac{dy}{dx}\right)^2 + y = 0$ નું પરિમાણ _____ છે.			
	A.	2	B.	1
	C.	0	D.	3
61.	The solution of differential equation $\frac{dy}{dx} = e^{x-y}$ is _____			
	A.	$e^x - e^{-y} = c$	B.	$e^x - e^y = c$
	C.	$e^{-x} - e^y = c$	D.	$e^{-x} - e^{-y} = c$
૬૧.	વિકલ સમીકરણ $\frac{dy}{dx} = e^{x-y}$ નો ઉકેલ _____ છે			
	A.	$e^x - e^{-y} = c$	B.	$e^x - e^y = c$
	C.	$e^{-x} - e^y = c$	D.	$e^{-x} - e^{-y} = c$
62.	_____ is a homogeneous function.			
	A.	$f(x, y) = x + xy$	B.	$f(x, y) = x + xy$
	C.	$f(x, y) = x^3 + xy$	D.	$f(x, y) = x^2 + y^2$
૬૨.	_____ એ એક સમપરીમાણીય વિધેય છે.			
	A.	$f(x, y) = x + xy$	B.	$f(x, y) = x + xy$
	C.	$f(x, y) = x^3 + xy$	D.	$f(x, y) = x^2 + y^2$
63.	*Solution of differential equation* $x\,dy - y\,dx = 0$ *is* _____			
	A.	$x - y = c$	B.	$x + y = c$
	C.	$yx = c$	D.	$y = cx$
૬૩.	વિકલ સમીકરણ $x\,dy - y\,dx = 0$ નો ઉકેલ _____ છે.			
	A.	$x - y = c$	B.	$x + y = c$
	C.	$yx = c$	D.	$y = cx$
64.	*Solution of differential equation* $\tan y\ sec^2 x\,dx + \tan x\ sec^2 y\,dy = 0$ *is* _____			
	A.	$\tan x = c \tan y$	B.	$\tan x \tan y = c$

	C.	$\tan x + \tan y = c$	D.	$\tan x - \tan y = c$
૬૪.	વિકલ સમીકરણ $\tan y \ sec^2 x \, dx + \tan x \ sec^2 y \, dy = 0$ નો ઉકેલ _____ છે.			
	A.	$\tan x = c \tan y$	B.	$\tan x \tan y = c$
	C.	$\tan x + \tan y = c$	D.	$\tan x - \tan y = c$
65.	The degree of the homogeneous function $f(x,y) = \frac{x^3 - y^3}{x+y}$ is _____			
	A.	1	B.	3
	C.	2	D.	4
૬૫.	સમપરીમાણીય વિધેય $f(x,y) = \frac{x^3 - y^3}{x+y}$ નું પરિમાણ _____ છે.			
	A.	1	B.	3
	C.	2	D.	4
66.	The solution of a differential equation $\frac{dy}{dx} - y = 0$ *is* _____			
	A.	$y = e^x$	B.	$y = x$
	C.	$y \cdot e^x = 0$	D.	$y + e^x = 0$
૬૬.	વિકલ સમીકરણ $\frac{dy}{dx} - y = 0$ નો _____ એ એક ઉકેલ છે			
	A.	$y = e^x$	B.	$y = x$
	C.	$y \cdot e^x = 0$	D.	$y + e^x = 0$
67.	For linear differential equation $\frac{dy}{dx} + Py = Q$, I.F.=_____			
	A.	$e^{\int Qdx}$	B.	$e^{\int -Qdx}$
	C.	$e^{\int -Pdx}$	D.	$e^{\int Pdx}$
૬૭.	વિકલ સમીકરણ $\frac{dy}{dx} + Py = Q$ માટે I.F.=_____			
	A.	$e^{\int Qdx}$	B.	$e^{\int -Qdx}$
	C.	$e^{\int -Pdx}$	D.	$e^{\int Pdx}$
68.	The number of arbitrary constants in the general solution of differential equation of second order is _____			
	A.	0	B.	2
	C.	4	D.	1
૬૮.	દ્વિતીય કક્ષાના વિકલ સમીકરણના સામાન્ય ઉકેલમાં સ્વૈર અચળાંકો ની સંખ્યા_____ હોય.			
	A.	0	B.	2
	C.	4	D.	1
69.	An integrating factor of the differential equation $\frac{dy}{dx} + \frac{y}{x} = 1$ is _____			
	A.	1	B.	x
	C.	e^x	D.	$\log x$
૬૯.	વિકલ સમીકરણ $\frac{dy}{dx} + \frac{y}{x} = 1$ નો સંકલકારક અવયવ _____ છે.			
	A.	1	B.	x
	C.	e^x	D.	$\log x$
70.	An integrating factor of the differential equation $\frac{dy}{dx} + y = e^x$ is _____			
	A.	e^x	B.	e^{x^2}
	C.	$2x$	D.	x^2
૭૦.	વિકલ સમીકરણ $\frac{dy}{dx} + y = e^x$ નો સંકલકારક અવયવ _____ છે.			
	A.	e^x	B.	e^{x^2}
	C.	$2x$	D.	x^2

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