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UNIT-5
MULTIPLE CALCULUS(INTEGRATION)

Multiple Choice questions

1	$\int_{-1}^{1} \int_{-2}^{2} \int_{-3}^{3} dx\,dy\,dz =$ _____
	a)24 b) 36 c) 48 d) 54
2.	The area enclosed by the parabolas $x^2 = y$ and $y^2 = x$ is _____
	a) 1/3 b) ¼ c) ½ d) 1/5
3.	$\int_{0}^{2} \int_{0}^{x} (x + y)\,dx\,dy =$ _____
	a) 1 b) 2 c) 3 d) 4
4.	The volume of the tetrahedron bounded by $x = 0, y = 0, z = 0$ and $x + y + z = 1$ is_____
	a) ½ b) 1/3 c) ¼ d) 1/6
5	By changing the order of integration, the integral $\int_{0}^{1} \int_{1}^{e^x} dy\,dx$ becomes_____
	a) $\int_{0}^{1} \int_{1}^{e^y} dx\,dy$ b) $\int_{1}^{e} \int_{\log y}^{1} dx\,dy$ c) $\int_{e}^{1} \int_{1}^{\log y} dx\,dy$ d) none
6	$\int_{0}^{2} \int_{0}^{x^2} x(x^2 + y^2)\,dx\,dy =$ _____
	a) $\frac{32}{3}$ (b) $\frac{64}{3}$ (c) $\frac{84}{3}$ (d) 1
7	$\int_{0}^{\pi} \int_{0}^{a\cos\theta} r\sin\theta\,dr\,d\theta =$ _____
	a) $\frac{a^2}{2}$ (b) $\frac{a^2}{3}$ (c) $\frac{a^3}{3}$ (d) $\frac{a^3}{4}$
8	$\int_{0}^{1} dx \int_{0}^{x} e^{y/x}\,dy =$ _____
	a)e-1 (b) $\frac{3(e-1)}{2}$ (c) $\frac{e-1}{3}$ (d) e
9	$\iint_{R} dx\,dy$ represents_____
	a)Area b) Volume c) length d) magnitude

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10	$$\int_0^1 \int_0^1 \int_0^1 e^{x+y+z}\,dx\,dy\,dz = \underline{\hspace{2cm}}$$
	a) $(e-1)^2$ (b) e-1 (c) $(e-1)^3$ (d) e+1
11	$\int_0^1 \int_1^2 xy\ dy\ dx = \ldots\ldots\ldots$
	a) 1/3 b) 3/4 c) ½ d) 1/5
12	The volume of the tetrahedraon bounded by the coordinate planes and the plane x+y+z=1 is ………………
	a) 1/3 b) 3/4 c) ½ d) 1/6
13	$\int_1^0 \int_0^1 (x+y)\,dx\,dy = \underline{\hspace{2cm}}$
	a) 1/3 b) 3/4 c) 1 d) 1/5
14	$\int_0^2 \int_0^x (x+y)\ dy\ dx = \underline{\hspace{2cm}}$
	a) 4 b) 3/4 c) ½ d) 1/5
15	$\int_{-1}^2 \int_{x^2}^{x+2} dy\ dx = \underline{\hspace{2cm}}$ [9/2]
	a) 9/2 b) 3/4 c) ½ d) 1/5
	Fill in the blanks
1.	$\iint_R f(x,y)\,dx\,dy$ represents \underline{\hspace{3cm}}
2	$\int_0^1 \int_1^2 xy\,dy\,dx$ \underline{\hspace{2cm}}
3	$\int_0^a \int_0^{\sqrt{ay}} x\,y\,d\,x\,d\,y = \underline{\hspace{3cm}}$
4	$\int_1^0 \int_0^1 (x+y)\,dx\,dy = \underline{\hspace{3cm}}$
5	$\int_0^1 \int_0^x e^{x+y}\ dy\,dx = \underline{\hspace{3cm}}$
6	$\int_0^1 \int_x^{\sqrt{x}} x\,y\,d\,x\,d\,y = \underline{\hspace{3cm}}$
7	$\int_0^1 \int_0^2 \int_1^2 x^2\,y\,z\,d\,x\,d\,y\,d\,z = \underline{\hspace{2cm}}$
8	The integral $\int_0^1 \int_x^{\sqrt{x}} f(x,y)\,d\,x\,d\,y$ after changing the order of integration is \underline{\hspace{3cm}}
9	To convert the variables (x, y) into polar coordinates, x= \underline{\hspace{1.5cm}} and y= \underline{\hspace{1.5cm}}
10	To convert the variables (x, y)in an integral, into polar coordinates dxdy=

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	_____
11	equivalent integral with the order of integration reversed for $\int_{-a}^{a} \int_{0}^{\sqrt{a^2-y^2}} x\,dy\,dx = $_____
12	The volume of the tetrahedron bounded by the surfaces x=0,y=0, z=0 and $\frac{x}{a} + \frac{y}{b} + \frac{z}{c} = 1$
13	Write the spherical polar coordinates_____
14	Write the cylindrical polar coordinates_____
15	Surface integration ------------------