Assignment

Area of Bounded Region

Basic Level

1. Area under the curve $y = x^2 - 4x$ within the x-axis and the line $x=2$, is **[SCRA 1991]**

(a) $\frac{16}{3}$ sq. units (b) $-\frac{16}{3}$ sq. units (c) $\frac{4}{7}$ sq. units (d) Cannot be calculated

2. The area bounded by the curve $y = 4x - x^2$ and the x-axis is **[MP PET 1999, 2003]**

(a) $\frac{30}{7}$ sq. units (b) $\frac{31}{7}$ sq. units (c) $\frac{32}{3}$ sq. units (d) $\frac{34}{3}$ sq. units

3. The area between the curve $y = 4 + 3x - x^2$ and x-axis is **[Rajasthan PET 2001]**

(a) $\frac{125}{6}$ (b) $\frac{125}{3}$ (c) $\frac{125}{2}$ (d) None of these

4. Area under the curve $y = \sqrt{3x+4}$ between $x = 0$ and $x = 4$, is **[Al CBSE 1979,1980]**

(a) $\frac{56}{9}$ sq. units (b) $\frac{64}{9}$ sq. units (c) 8 sq. units (d) None of these

5. The area bounded by the curve $y = x^3$, x- axis and two ordinates $x = 1$ to $x = 2$ equal to **[MP PET 1999]**

(a) $\frac{15}{2}$ sq. units (b) $\frac{15}{4}$ sq. units (c) $\frac{17}{2}$ sq. units (d) $\frac{17}{4}$ sq. units

6. If the area above the x-axis, bounded by the curves $y = 2^{kx}$ and $x = 0$ and $x = 2$ is $\frac{3}{\ln 2}$, then the value of k is **[Orissa JEE 2003]**

(a) $\frac{1}{2}$ (b) 1 (c) –1 (d) 2

7. Area bounded by curve $y = x^3$, x-axis and ordinates $x = 1$ and $x = 4$, is

(a) 64 sq. units (b) 27 sq. units (c) $\frac{127}{4}$ sq. units (d) $\frac{255}{4}$ sq. units

8. Area bounded by curve $xy = c$, x-axis between $x = 1$ and $x = 4$, is

(a) c log 3 sq. units (b) 2 log c sq. units (c) 2c log 2 sq. units (d) 2c log5 sq. units

9. The measurement of the area bounded by the coordinate axes and the curve $y = \log_e x$ is **[MP PET 1998]**

(a) 1 (b) 2 (c) 3 (d) ∞

10. The area bounded by the curve $y = \log x$, the x- axis and ordinate $x = e$ is **[MP PET 1994]**

(a) e (b) 1 (c) ∞ (d) None of these

11. Area bounded by the curve $y = \log x$, x-axis and the ordinates $x = 1$, $x = 2$ is

(a) log 4 sq. units (b) log 4+1 sq. units (c) log 4-1 sq. units (d) None of these

12. Area bounded by the curve $y = x\,e^{x^2}$, x-axis and the ordinates x=0, x=a is

(a) $\frac{e^{a^2}+1}{2}$ sq. units (b) $\frac{e^{a^2}-1}{2}$ sq. units (c) $e^{a^2}+1$ sq. units (d) $e^{a^2}-1$ sq. units

13. If area bounded by the curves $y^2 = 4ax$ and $y = mx$ is $\frac{a^2}{3}$, then the value of m is

(a) 2 (b) – 2 (c) 1/2 (d) None of these

14. The area of the region (in the square units) bounded by the curve $x^2 = 4y$, line $x = 2$ and x-axis is **[MP PET 2002]**

(a) 1 (b) $\frac{2}{3}$ (c) $\frac{4}{3}$ (d) $\frac{8}{3}$

15. Area bounded by the parabola $y = 4x^2$, y- axis and the lines $y = 1$, $y = 4$ is

(a) 3 sq. units (b) $\frac{7}{5}$ sq. units (c) $\frac{7}{3}$ sq. units (d) None of these

16. Area bounded by parabola $y^2 = x$ and straight line $2y = x$ is **[MP PET 1996]**

(a) $\frac{4}{3}$ (b) 1 (c) $\frac{2}{3}$ (d) $\frac{1}{3}$

17. Area enclosed by the parabola $ay = 3(a^2 - x^2)$ and x-axis is

(a) $4a^2$ sq. units (b) $12a^2$ sq. units (c) $4a^3$ sq. units (d) None of these

18. The area enclosed by the curve $y = \sin x$, $y = 0$, $x = 0$ and $x = \frac{\pi}{2}$ is **[MP PET 1995]**

(a) π (b) 2π (c) 1 (d) 2

19. Area bounded by the curve $y = \sin x$ between $x = 0$ and $x = 2\pi$ is

(a) 2 sq. units (b) 4 sq. units (c) 8 sq. units (d) None of these

20. Area bounded by the curve $y = k \sin x$ between $x = \pi$ and $x = 2\pi$, is

(a) 2κ sq. units (b) 0 (c) $\frac{\kappa^2}{2}$ sq. units (d) κ sq. units

21. The area of the region bounded by the x-axis and the curves defined by $y = \tan x \left(-\frac{\pi}{3} \le x \le \frac{\pi}{3}\right)$ is **[Kurukshetra CEE 1998]**

(a) $\log \sqrt{2}$ (b) $-\log \sqrt{2}$ (c) $2 \log 2$ (d) 0

22. The area between the curve $y = \sin^2 x$, x-axis and the ordinates x=0 and $x = \frac{\pi}{2}$ is **[Rajasthan PET 1996]**

(a) $\frac{\pi}{2}$ (b) $\frac{\pi}{4}$ (c) $\frac{\pi}{8}$ (d) π

23. Area of the region bounded by the curve $y = \tan x$, tangent drawn to the curve at $x = \frac{\pi}{4}$ and the x-axis is **[DCE 2002]**

(a) $\frac{1}{4}$ (b) $\log \sqrt{2} - \frac{1}{4}$ (c) $\log \sqrt{2} + \frac{1}{4}$ (d) None of the above

24. The ratio of the areas bounded by the curves $y = \cos x$ and $y = \cos 2x$ between $x = 0$, $x = \frac{\pi}{3}$ and x- axis, is **[MP PET 1997]**

(a) $\sqrt{2} : 1$ (b) 1:1 (c) 1:2 (d) 2:1

25. The area bounded by the curve $y = \sec x$, the x-axis and the lines x=0 and $x = \frac{\pi}{4}$ is **[Tamilnadu PCEE 2002]**

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

26. The area bounded by $y = [x]$ and the two ordinates x=1 and x=1.7 is

(a) $\frac{17}{10}$ (b) 1 (c) $\frac{17}{5}$ (d) $\frac{7}{10}$

27. The value of k for which the area of the figure bounded by the curve $y = 8x^2 - x^5$, the straight line x = 1 and x = k and the x-axis is equal to $\frac{16}{3}$

(a) 2 (b) $\sqrt[3]{8 - \sqrt{17}}$ (c) 3 (d) – 1

28. The area of the region bounded by the curves $y = |x-2|$, $x=1$, $x=3$ and the x-axis is **[AIEEE 2004]**

(a) 4 (b) 2 (c) 3 (d) 1

29. The area of the region bounded by $y = |x-1|$ and $y=1$ is **[IIT Screening 1994]**

(a) 2 (b) 1 (c) 1/2 (d) None of these

30. Area bounded by lines $y = 2+x$, $y = 2-x$ and $x=2$ is **[MP PET1996]**

(a) 3 (b) 4 (c) 8 (d) 16

31. Area enclosed between the curve $y^2(2a-x) = x^3$ and line $x = 2a$ above x-axis is **[MP PET 2001]**

(a) πa^2 (b) $\frac{3\pi a^2}{2}$ (c) $2\pi a^2$ (d) $3\pi a^2$

32. Area bounded by the curve $xy - 3x - 2y - 10 = 0$, x-axis and the lines $x=3$, $x=4$ is **[AI CBSE 1991]**

(a) $16\log 2 - 3$ (b) $16\log 2 - 13$ (c) $16\log 2 + 3$ (d) None of these

33. The area of the triangle formed by the tangent to the hyperbola $xy = a^2$ and coordinate axes is **[Rajasthan PET 2000]**

(a) a^2 (b) $2a^2$ (c) $3a^2$ (d) $4a^2$

34. If a curve $y = a\sqrt{x} + bx$ passes through the point (1, 2) and the area bounded by the curve, line $x=4$ and x-axis is 8 square units, then **[MP PET 2002]**

(a) $a=3, b=-1$ (b) $a=3, b=1$ (c) $a=-3, b=1$ (d) $a=-3, b=-1$

35. The area bounded by the curve $y = f(x)$, x-axis and ordinates $x = 1$ and $x = b$ is $(b-1)\sin(3b+4)$ then $f(x)$ is **[Rajasthan PET 2000]**

(a) $3(x-1)\cos(3x+4) + \sin(3x+4)$ (b) $(b-1)\sin(3x+4) + 3\cos(3x+4)$

(c) $(b-1)\cos(3x+4) + 3\sin(3x+4)$ (d) None of these

36. The area enclosed by the parabola $y^2 = 4ax$ and the straight line $y = 2ax$, is **[MP PET 1993]**

(a) $\frac{a^2}{3}$ sq. units (b) $\frac{1}{3a^2}$ sq. units (c) $\frac{1}{3a}$ sq. units (d) $\frac{2}{3a}$ sq. units

37. The area bounded by the curve $x = at^2, y = 2at$ and the x-axis in $1 \le t \le 3$ is. **[Pb. CET 1998]**

(a) $26a^2$ (b) $8a^2$ (c) $\frac{26a^2}{3}$ (d) $\frac{104\,a^2}{3}$

38. If A_n be the area bounded by the curve $y = (\tan x)^n$ and the lines x=0, y=0 and $x = \frac{\pi}{4}$, then for n>2 **[IIT 1996, Him. UCET 2002]**

(a) $A_n + A_{n-2} = \frac{1}{n-1}$ (b) $A_n + A_{n-2} < \frac{1}{n-1}$ (c) $A_n - A_{n-2} = \frac{1}{n-1}$ (d) None of these

39. The area between the curve $y = 2x^4 - x^2$, the axis and the ordinates of two minima of the curve is

(a) $\frac{7}{120}$ (b) $\frac{9}{120}$ (c) $\frac{11}{120}$ (d) None of these

40. The slope of the tangent to a curve $y = f(x)$ at $(x, f(x))$ is $2x+1$. If the curve passes through the point (1, 2), then the area of the region bounded be the curve, the x-axis and the line x=1 is **[IIT 1995]**

(a) $\frac{5}{6}$ (b) $\frac{6}{5}$ (c) 6 (d) $\frac{1}{6}$

Symmetrical Area

Basic Level

41. The area bounded by the x-axis and the curve $y = \sin x$ and $x = 0$, $x = \pi$ is **[Kerala (Engg.)2002]**

(a) 1 (b) 2 (c) 3 (d) 4

42. The area of the curve $xy^2 = a^2(a-x)$ bounded by y-axis is **[Rajasthan PET 1996]**

(a) πa^2 (b) $2\pi a^2$ (c) $3\pi a^2$ (d) $4\pi a^2$

43. The area bounded by the parabola $y^2 = 4ax$, its axis and two ordinates $x = 4$, $x = 9$ is

(a) $4a^2$ (b) $4a^2.4$ (c) $4a^2(9-4)$ (d) $\frac{152\sqrt{a}}{3}$

44. Area bounded by the parabola $y^2 = 2x$ and the ordinates $x = 1$, $x = 4$ is

(a) $\frac{4\sqrt{2}}{3}$ sq. units (b) $\frac{28\sqrt{2}}{3}$ sq. units (c) $\frac{56}{3}$ sq. units (d) None of these

45. Area bounded by the parabola $y^2 = 4ax$ and its latus rectum is **[Rajasthan PET 1997, 2000, 2002]**

(a) $\frac{2}{3}a^2$ sq. units (b) $\frac{4}{3}a^2$ sq. units (c) $\frac{8}{3}a^2$ sq. units (d) $\frac{3}{8}a^2$ sq. units

46. The area between the curve $y^2 = 4ax$, x-axis and the ordinates $x = 0$ and $x = a$ is **[Rajasthan PET 1996]**

(a) $\frac{4}{3}a^2$ (b) $\frac{8}{3}a^2$ (c) $\frac{2}{3}a^2$ (d) $\frac{5}{2}a^2$

47. Area of the ellipse $\frac{x^2}{a^2}+\frac{y^2}{b^2}=1$ is **[Karnataka CET 1993]**

(a) $\pi\, ab$ sq. units (b) $\frac{1}{2}\pi\, ab$ sq. units (c) $\frac{1}{4}\pi\, ab$ sq. units (d) None of these

48. The area of the smaller segment cut off from the circle $x^2 + y^2 = 9$ by $x = 1$ is **[Rajasthan PET 2002]**

(a) $\frac{1}{2}(9\sec^{-1}3 - \sqrt{8})$ (b) $9\sec^{-1}(3) - \sqrt{8}$ (c) $\sqrt{8} - 9\sec^{-1}3$ (d) None of these

49. The area of the upper half of the circle whose equation is $(x-1)^2 + y^2 = 1$ is given by **[Kurukshetra CEE 1995]**

(a) $\int_0^2 \sqrt{2x - x^2}\,dx$ (b) $\int_0^1 \sqrt{2x - x^2}\,dx$ (c) $\int_1^2 \sqrt{2x - x^2}\,dx$ (d) $\frac{\pi}{4}$

Advance Level

50. The area bounded by the curves $y = \ln x, y = \ln|x|$, $y = |\ln x|$ and $y = |\ln|x||$ is **[AIEEE 2002]**

(a) 4 sq. units (b) 6 sq. units (c) 10 sq. units (d) None of these

51. Ratio of the area cut off a parabola by any double ordinate is that of the corresponding rectangle contained by that double ordinate and its distance from the vertex is

(a) $\frac{1}{2}$ (b) $\frac{1}{3}$ (c) $\frac{2}{3}$ (d) 1

52. The area bounded by the curves $x = a\cos^3 t$, $y = a\sin^3 t$ is

(a) $\frac{3\pi a^2}{8}$ (b) $\frac{3\pi a^2}{16}$ (c) $\frac{3\pi a^2}{32}$ (d) $3\pi a^2$

Area between Two curves

Basic Level

53. The area bounded by the curves $y = \sqrt{x}$, $2y + 3 = x$ and x-axis in the 1st quadrant is **[IIT 2003]**

(a) 9 (b) $\frac{27}{4}$ (c) 36 (d) 18

54. The area of region $\{(x, y) : x^2 + y^2 \le 1 \le x + y\}$ is **[Kerala (Engg.) 2002]**

(a) $\frac{\pi^2}{5}$ (b) $\frac{\pi^2}{2}$ (c) $\frac{\pi^2}{3}$ (d) $\frac{\pi}{4} - \frac{1}{2}$

55. The area bounded by the curve $y = x$, x-axis and ordinates $x = -1$ to $x = 2$ is **[Rajasthan PET 2001]**

(a) 0 (b) 1/2 (c) 3/2 (d) 5/2

56. The area bounded by the curves $y = |x| - 1$ and $y = -|x| + 1$ is **[IIT Screening 2002]**

(a) 1 (b) 2 (c) $2\sqrt{2}$ (d) 4

57. The area bounded by the straight lines $x = 0, x = 2$ and the curves $y = 2^x, y = 2x - x^2$ is **[AMU 2001]**

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

58. The area of figure bounded by $y = e^x, y = e^{-x}$ and the straight line $x = 1$ is **[Karnataka CET 1999]**

(a) $e + \frac{1}{e}$ (b) $e - \frac{1}{e}$ (c) $e + \frac{1}{e} - 2$ (d) $e + \frac{1}{e} + 2$

59. The area bounded by the curves $y = \log_e x$ and $y = (\log_e x)^2$ is **[Rajasthan PET 2000]**

(a) $3 - e$ (b) $e - 3$ (c) $\frac{1}{2}(3 - e)$ (d) $\frac{1}{2}(e - 3)$

60. The area bounded by the curves $y^2 - x = 0$ and $y - x^2 = 0$ is **[MP PET 1997]**

(a) $\frac{7}{3}$ (b) $\frac{1}{3}$ (c) $\frac{5}{3}$ (d) 1

61. The area enclosed by the parabolas $y = x^2 - 1$ and $y = 1 - x^2$ is **[AMU 1999]**

(a) $\frac{1}{3}$ (b) $\frac{2}{3}$ (c) $\frac{4}{3}$ (d) $\frac{8}{3}$

62. The area bounded by curve $y^2 = x$, line $y = 4$ and y-axis is **[Roorkee 1995; Rajasthan PET 2003]**

(a) $\frac{16}{3}$ (b) $\frac{64}{3}$ (c) $7\sqrt{2}$ (d) None of these

63. Area included between the two curves $y^2 = 4ax$ and $x^2 = 4ay$, is **[SCRA 1986; Roorkee 1984; Rajasthan PET 1999; Kerala (Engg.)2002]**

(a) $\frac{32}{3}a^2$ sq. units (b) $\frac{16}{3}$ sq. units (c) $\frac{32}{3}$ sq. units (d) $\frac{16}{3}a^2$ sq. units

64. Area bounded by the curve $x^2 = 4y$ and the straight line $x = 4y - 2$, is **[SCRA 1986; IIT 1981]**

(a) $\frac{8}{9}$ sq. units (b) $\frac{9}{8}$ sq. units (c) $\frac{4}{3}$ sq. units (d) None of these

65. What is the area bounded by the curves $x^2 + y^2 = 9$ and $y^2 = 8x$ **[DCE 1999]**

(a) 0 (b) $\frac{2\sqrt{2}}{3} + \frac{9\pi}{2} - 9\sin^{-1}\left(\frac{1}{3}\right)$ (c) 16π (d) None of these

66. The area bounded by the circle $x^2 + y^2 = 4$, line $x = \sqrt{3}y$ and x- axis lying in the first quadrant, is **[Rajasthan PET 1997, Kurukshetra CEE 1998]**

(a) $\frac{\pi}{2}$ (b) $\frac{\pi}{4}$ (c) $\frac{\pi}{3}$ (d) π

67. The area in the first quadrant between $x^2 + y^2 = \pi^2$ and $y = \sin x$ is **[MP PET 1997]**

(a) $\frac{(\pi^3 - 8)}{4}$ (b) $\frac{\pi^3}{3}$ (c) $\frac{(\pi^3 - 16)}{4}$ (d) $\frac{(\pi^3 - 8)}{2}$

68. For $0 \le x \le \pi$, the area bounded by $y = x$ and $y = x + \sin x$, is **[Roorkee Quqalifying 1998]**

(a) 2 (b) 4 (c) 2π (d) 4π

69. Area bounded by $y = x \sin x$ and x-axis between $x = 0$ and $x = 2\pi$, is **[Roorkee 1981; Rajasthan PET 1995]**

(a) 0 (b) 2π sq. units (c) π sq. units (d) 4π sq. units

70. The area bounded by curves $y = \cos x$ and $y = \sin x$ and ordinates $x = 0$ and $x = \frac{\pi}{4}$ is **[Karnataka CET 2002]**

(a) $\sqrt{2}$ (b) $\sqrt{2} + 1$ (c) $\sqrt{2} - 1$ (d) $\sqrt{2}(\sqrt{2} - 1)$

71. The area formed by triangular shaped region bounded by the curves $y = \sin x, y = \cos x$ and $x = 0$ is **[MP PET 2000]**

(a) $\sqrt{2} - 1$ (b) 1 (c) $\sqrt{2}$ (d) $1 + \sqrt{2}$

72. Area between the curve $y = \cos x$ and x-axis when $0 \le x \le 2\pi$, is **[MP PET 1997]**

(a) 2 (b) 4 (c) 3 (d) 0

73. AOB is the positive quadrant of the ellipse $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$ where $OA = a$, $OB = b$. Then area between the arc AB and chord AB of the ellipse is

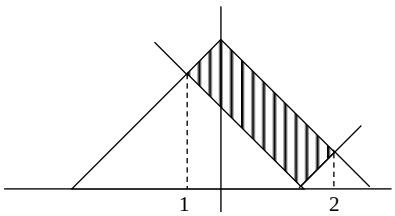
(a) πab (b) $(\pi - 2)ab$ (c) $\frac{ab(\pi - 2)}{4}$ (d) $\frac{ab(\pi + 2)}{4}$

Advance Level

74. For which of the following values of m, the area of the region bounded by the curve $y = x - x^2$ and the line $y = mx$ equals $\frac{9}{2}$ **[IIT 1999]**

(a) -4 (b) -2 (c) 2 (d) 4

75. The area of the figure bounded by the curves $y = |x - 1|$ and $y = 3 - |x|$, is **[AIEEE 2003; Orissa JEE 2003]**



(a) 2 sq. units (b) 3 sq. units (c) 4 sq. units (d) 1 sq. units

76. If the ordinate $x = a$ divides the area bounded by the curve $y = \left(1 + \frac{8}{x^2}\right)$, x-axis and the ordinates $x = 2$, $x = 4$ into two equal parts, then $a =$ **[IIT 1983]**

(a) 8 (b) $2\sqrt{2}$ (c) 2 (d) $\sqrt{2}$

77. The area of the region lying inside $x^2 + (y-1)^2 = 1$ and out side $c^2x^2 + y^2 = c^2$, where $c = (\sqrt{2} - 1)$ is **[Roorkee 1999]**

(a) $(4 - \sqrt{2})\frac{\pi}{4} + \frac{1}{\sqrt{2}}$ (b) $(4 + \sqrt{2})\frac{\pi}{4} - \frac{1}{\sqrt{2}}$ (c) $(4 + \sqrt{2})\frac{\pi}{4} + \frac{1}{\sqrt{2}}$ (d) None of these

78. The area enclosed between the curves $y = \log_e(x + e)$, $x = \log_e(x + e)$, $x = \log_e\left(\frac{1}{y}\right)$ and the x-axis, is **[Roorkee 1990; Pb. CET 2002]**

(a) 2 (b) 1 (c) 4 (d) None of these

79. The area of the region formed by $x^2 + y^2 - 6x - 4y + 12 \le 0$, $y \le x$ and $x \le \frac{5}{2}$ is **[Roorkee 1996; PUCET 2002]**

(a) $\frac{\pi}{6} - \frac{\sqrt{3} + 1}{8}$ (b) $\frac{\pi}{6} + \frac{\sqrt{3} - 1}{8}$ (c) $\frac{\pi}{6} - \frac{\sqrt{3} - 1}{8}$ (d) None of these

80. If the area bounded by the curves $y = x - bx^2$ and $y = \frac{1}{b}x^2$, where $b>0$ is maximum, then $b =$ **[IIT 1997]**

(a) 0 (b) 1 (c) 2 (d) None of these

81. Let $f(x) =$ Maximum $[x^2, (1-x^2), 2x(1-x)]$ where $0 \le x \le 1$. The area of the region bounded by the curves $y = f(x)$, x-axis, $x = 0$ and $x = 1$ is **[IIT 1997; IIIT Hydrabad 2002]**

(a) $\frac{17}{27}$ (b) $\frac{14}{27}$ (c) $\frac{19}{27}$ (d) None of these

82. The area of the closed figure bounded by $x = -1$ and $x = 2$ and $y = \begin{cases} -x^2 + 2, & x \le 1 \\ 2x - 1, & x > 1 \end{cases}$ and the abscissa axis is

(a) $\frac{16}{3}$ sq. units (b) $\frac{10}{3}$ sq. units (c) $\frac{13}{3}$ sq. units (d) $\frac{7}{3}$ sq. units

Basic Level

83. The volume of the solid formed by rotating the area enclosed between the curve $y = x^2$ and the line $y = 1$ about $y = 1$ is (in cubic units)

(a) $\frac{9\pi}{5}$ (b) $\frac{7\pi}{3}$ (c) $\frac{8\pi}{3}$ (d) None of these

84. The volume of the solid obtained by rotating the ellipse $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$ about the axis of x is **[MNR 1995]**

(a) $\pi a^2 b$ (b) $\pi - b^2$ (c) $\frac{4}{3}\pi a^2 b$ (d) $\frac{4}{3}\pi ab^2$

85. The part of the parabola between the parabola $y^2 = 4ax$ and the line $x = c$ is revolved about x-axis. The volume of the resulting solid is

(a) $2\pi ac^2$ (b) πac^2 (c) $\frac{\pi c^2}{4}$ (d) $4\pi ac^2$

86. The volume of the solid generated by revolving about the y- axis the figure bounded by the parabola $y = x^2$ and $x = y^2$ is **[UPSEAT 2002]**

(a) $\frac{21}{5}\pi$ (b) $\frac{24}{5}\pi$ (c) $\frac{5}{24}\pi$ (d) None of these

87. The volume of the frustum of a cone of height 6 *cm.*, and radii are 5 *cms* and 8 *cms* is

(a) 258 *cc* (b) 250 *cc* (c) 268 *cc* (d) 275 *cc*

88. The part of the circle $x^2 + y^2 = 4$ between $x = 1$ and $x = 2$ is revolved about x-axis. The curved surface of the resulting solid is

(a) 2π (b) 4π (c) 6π (d) 8π

Advance Level

89. The volume of a solid obtained by revolving about y-axis enclosed between the ellipse $x^2 + 9y^2 = 9$ and the straight line $x + 3y = 3$ in the first quadrant is **[MNR 1994]**

(a) 3π (b) 4π (c) 6π (d) 9π

90. The volume of the frustum of a right circular cone. The radii of whose ends are respectively 10 *cms* and 16 *cms* and thickness is 4 *cms, is*

(a) $1232\ \pi$ (b) $332\ \pi$ (c) $1032\ \pi$ (d) $1132\ \pi$

91. The line segment joining the points (1, m) and (2, 2m) is revolved round the y-axis to form a frustum of a cone of the volume of the frustum is 14π then the value of m is equal to

(a) 2 (b) 4 (c) 6 (d) 8

92. A frustum of sphere is made by cutting two parallel planes of any sphere. If radius of sphere is 5 *cm* and distance between the plane is 1*cm,* then what will be the curved surface of frustum when the distance of first plane from the centre of sphere is 2 *cm* **[UPSEAT 1999]**

(a) $5\pi cm^2$ (b) $10\pi cm^2$ (c) $15\pi cm^2$ (d) $40\pi cm^2$

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Answer Sheet

Assignment (Basic and Advance Level)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
a	c	a	d	b	b	d	c	d	b	c	b	a	b	c	a	a	c	b	a
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
c	b	d	d	a	d	b	d	b	b	b	c	b	a	a	c	d	a	a	a
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
b	a	d	b	c	b	a	b	a	a	c	a	a	d	d	b	d	c	a	b
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
d	b	d	b	b	c	a	a	d	c	a	b	c	b	c	b	a	a	c	b
81	82	83	84	85	86	87	88	89	90	91	92								
a	a	d	d	a	d	a	b	a	c	c	b								