Answer Ex–I SINGLE CORRECT (OBJECTIVE QUESTIONS)

1. C **2.** D **3.** C **4.** C **5.** D **6.** C **7.** B
8. B **9.** A **10.** A **11.** A **12.** B **13.** A **14.** B
15. C **16.** C **17.** B **18.** B **19.** D **20.** A

Answer Ex–II MULTIPLE CORRECT (OBJECTIVE QUESTIONS)

1. A,B **2.** B **3.** C **4.** A,C **5.** B **6.** C **7.** D
8. A,C **9.** A,D **10.** B **11.** D **12.** A

Answer Ex–III SUBJECTIVE QUESTIONS

1. 5/6 sq. units **2.** $c = -\pi/6$ or $\pi/3$ **3.** $x_0 = 2, A(x_0) = 8$ **4.** $\frac{(e^2-5)}{4e}$ sq.units

5. $\pi - \tan^{-1}\frac{2\sqrt{2}}{3\pi}; \pi - \tan^{-1}\frac{4\sqrt{2}}{3\pi}$ **6.** $\frac{11}{8}$ sq. units **7.** $\frac{\pi}{2}; \frac{\pi-1}{\pi+1}$ **8.** a = 9

9. $\frac{3\pi+2}{\pi-2}$ **10.** $\frac{128}{15}$ sq. units **11. (i)** m = 1, **(ii)** $m = \infty$; $A_{min} = 4/3$

12. e **13.** 2 sq. units **14.** $a = 3^{1/4}$ **15.** a = – 3/4 **16.** $\sqrt{3}$

17. $\frac{1}{3} + \ell n\left(\frac{\sqrt{3}}{2}\right)$ sq. units **18.** $1 - 3e^{-2}$ **19.** C = –1 or $(8 - \sqrt{17})^{1/3}$

20. $\frac{5}{4}(5\pi+14)$ sq. units **21.** $\frac{1}{2}(1-e^{-1/2})$

Answer Ex–IV ADVANCED SUBJECTIVE QUESTIONS

1. $f(x) = x^2 + 1$; $y = \pm 2x$; A = $\frac{2}{3}$ sq. units **2.** $y = \frac{2x}{3}$ **3.** $\sqrt{2}+1$

4. $b = \frac{1}{8}$, $A_{minimum} = 4\sqrt{3}$ sq. units

5. $f(x) = x \sin x$, a = 1 ; $A_1 = 1 - \sin 1$; $A_2 = \pi - 1 - \sin 1$; $A_3 = (3\pi - 2)$ sq. units

6. $\frac{1}{2}$ **7.** $a = 8$ or $\frac{2}{5}(6-\sqrt{21})$ **8.** $2 - (\pi/2)$ sq. units **9.** $\frac{(\pi-1)}{2}$

10. 104 **12.** $a = \frac{2}{3}$ **13.** $\alpha = \frac{\pi}{3}$, ratio = 2 : $\sqrt{3}$ **14.** $4a^2$

15. a = $\frac{1}{2}$ gives minima, $A\left(\frac{1}{2}\right) = \frac{3\sqrt{3}-\pi}{12}$; $a = 0$ gives local maxima A(0) = 1 – $\frac{\pi}{4}$;

a = 1 gives maximum value, A(1) = $\frac{\pi}{4}$ **16.** $\left(\frac{16}{9}\right)x^2$ **17.** $e^{\pi/3}\log 2$ sq. units

Answer Ex–V JEE PROBLEMS

1. B,D **2.** $\left(\pi - \frac{\pi-2}{2\sqrt{2}}\right)$ sq. units **3.** 9 sq. units **4.** B **5.** $\left(\frac{20}{3} - 4\sqrt{2}\right)$ sq. units

6. B **7. (a)** D ; **(b)** $\frac{1}{3}$ sq. units ; **(c)** $\frac{125}{3}$ sq. units **8. (i)** A, **(ii)** D, **(iii)** A

9. (a) B, **(b) (i)** B, **(ii)** A, **(iii)** D **10.** B,C,D