

Answer Ex-I**SINGLE CORRECT (OBJECTIVE QUESTIONS)**

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|-------|-------|-------|-------|-------|-------|-------|
| 1. B | 2. A | 3. B | 4. D | 5. C | 6. B | 7. A |
| 8. A | 9. A | 10. B | 11. B | 12. D | 13. B | 14. D |
| 15. B | 16. B | 17. B | 18. B | 19. A | 20. B | 21. A |
| 22. B | 23. B | 24. B | 25. B | 26. B | 27. B | 28. A |
| 29. B | 30. A | | | | | |

Answer Ex-II**MULTIPLE CORRECT (OBJECTIVE QUESTIONS)**

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|--------|-------|--------|--------|--------|--------|---------|
| 1. AC | 2. AB | 3. AD | 4. ABD | 5. AB | 6. AC | 7. ABC |
| 8. AB | 9. AC | 10. AC | 11. AD | 12. AB | 13. BC | 14. ACD |
| 15. AC | | | | | | |

Answer Ex-III**SUBJECTIVE QUESTIONS**

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|--------------------------------------|----------------------------------|---|
| 1. $(0, 0) ; (3, 27)$ | 2. $2x + y = 2$ | 3. Tangent : $x + y = 6$, Normal $x - y = 0$ |
| 4. $y = x$ | 5. (a) $y - 2x - 3 = 0$ | (b) $2x + y - 7 = 0$ |
| 8. $(4, 11) \text{ \& } (-4, -31/3)$ | 9. $(0, 0), (1, 2), (-1, -2)$ | 10. $(9/4, 3/8)$ |
| 11. $\frac{\pi}{3}$ | 12. $3\sqrt{2} - 1$ | 13. $(-6, 3)$ |
| 15. (i) -2 cm/min | (ii) $2 \text{ cm}^2/\text{min}$ | 16. zero |
| 17. -1 | 18. -1500 ft/sec | 19. $\pm \frac{c}{\sqrt{2}}$ |
| 20. $p \in (0, 1/e)$ | 21. 8 | 22. $a \in \left(-\frac{13}{4}, 3\right)$ |
| 23. $\frac{8b}{27}$ | | |

Answer Ex-IV**ADVANCED SUBJECTIVE QUESTIONS**

1. (0, 1)
2. $x = 1$ when $t = 1$, $m \rightarrow \infty$; $5x - 4y = 1$ if $t \neq 1$, $m = 1/3$
3. T : $x - 2y = 0$; N : $2x + y = 0$
4. $x + 2y = \pi/2$ & $x + 2y = -3\pi/2$
10. $\frac{m\sqrt{m}}{\sqrt{2}}$
11. (a) $n = -2$
12. $\pm \frac{1}{2\sqrt{2}}$
13. (i) 6 km/h (ii) 2 km/hr
14. $1 + 36\pi$ cu. cm/sec
15. $1/48 \pi$ cm/s
16. 0.05 cm/sec
17. $\frac{66}{7}$
18. $\frac{1}{4}$ cm/sec.
19. (a) $-\frac{1}{24\pi}$ m/min., (b) $-\frac{5}{288\pi}$ m/min.
20. (a) $r = (1 + t)^{1/4}$, (b) $t = 80$

Answer Ex-V**JEE PROBLEMS**

1. $\sqrt{2}x + y - 2\sqrt{2} = 0$ or $\sqrt{2}x - y - 2\sqrt{2} = 0$
2. D
3. D
4. D
5. A