

Answers

Unit I

- | | | | | |
|----------------|---|---------|---------|---------|
| 1. (a) | 2. (a) | 3. (b) | 4. (a) | 5. (a) |
| 6. (a) | 7. (a) | 8. (a) | 9. (c) | 10. (d) |
| 11. (a) | 12. (a) | 13. (a) | 14. (a) | 15. (a) |
| 16. (a) | 17. (a) | 18. (a) | 19. (a) | 20. (a) |
| 21. (a) | 22. (a) | 23. (a) | 24. (b) | 25. (c) |
| 26. (i) $3y^2$ | (ii) $\log(ax+b)$ (iii) $(-1)^n n! a^n (ax+b)^{-n-1}$ | | | |

(iv) $\frac{1}{2} [e^x - (5)^{n/2} e^x \cos(2x + n \tan^{-1} 2)]$ (v) $-y$ (vi) 0 (vii) $\frac{x^2 + 2x - y^2}{(x+y)^2 + (x^2+y^2)^2}$

(viii) homogeneous (ix) $\frac{\partial u}{\partial x} \frac{dx}{dt} + \frac{\partial u}{\partial y} \frac{dy}{dt} = (x)(n-1)u_x$

Unit II

- | | | | | | | |
|--------|-------------|------------|-------------|-----------|----------|--------|
| 1. (a) | 2. (a) | 3. (a) | 4. (a) | 5. (a) | 6. (a) | 7. (a) |
| 8. (a) | 9. (i) True | (ii) True | (iii) True | (iv) True | (v) True | |
| | (vi) True | (vii) True | (viii) True | (ix) True | (x) True | |

Unit III

- | | | | | | | |
|----------|----------|---------|---------|---------|---------|---------|
| Q-1. (a) | Q-2. (b) | 3. (c) | 4. (b) | 5. (a) | 6. (c) | 7. (b) |
| 8. (d) | 9. (d) | 10. (b) | 11. (a) | 12. (b) | 13. (b) | 14. (b) |
| 15. (a) | 16. (a) | 17. (a) | 18. (b) | 19. (b) | 20. (a) | |