Program: \_First Year (All Branches) Engineering- SEM-II

Curriculum Scheme: Rev 2019

Engineering Mathematics-II

**Question Bank**

=====================================================================

**MCQ**

|  |  |
| --- | --- |
| 1. | The value of is equal to |
| Option A: |  |
| Option B: |  |
| Option C: |  |
| Option D: |  |
|  |  |
| 2. | Length of the curve from is |
| Option A: |  |
| Option B: |  |
| Option C: |  |
| Option D: |  |
|  |  |
| 3. | Integrating factor of is |
| Option A: |  |
| Option B: |  |
| Option C: |  |
| Option D: |  |
|  |  |
| 4. | The solution of differential equation is |
| Option A: |  |
| Option B: |  |
| Option C: |  |
| Option D: |  |
|  |  |
| 5. | Particular Integral (P.I.) of differential equation is |
| Option A: |  |
| Option B: |  |
| Option C: |  |
| Option D: |  |
|  |  |
| 6. | Value of the integral is |
| Option A: |  |
| Option B: |  |
| Option C: |  |
| Option D: |  |
|  |  |
| 7. | Solution of the triple integral is |
| Option A: |  |
| Option B: |  |
| Option C: |  |
| Option D: |  |
|  |  |
| 8. | Integral is equal to |
| Option A: |  |
| Option B: |  |
| Option C: |  |
| Option D: |  |
|  |  |
| 9. | The value of is |
| Option A: |  |
| Option B: |  |
| Option C: |  |
| Option D: |  |
|  |  |
| 10. | Changing to polar co-ordinates the integral will be |
| Option A: |  |
| Option B: |  |
| Option C: |  |
| Option D: |  |
|  |  |
| 11. | The Integrating Factor of DE is given by |
| Option A: |  |
| Option B: |  |
| Option C: |  |
| Option D: |  |
|  |  |
| 12. | The DE can be reduced to linear equation given by |
| Option A: |  |
| Option B: |  |
| Option C: |  |
| Option D: |  |
|  |  |
| 13. | The solution of ,where is given by |
| Option A: |  |
| -Option B: |  |
| Option C: |  |
| Option D: |  |
|  |  |
| 14. | The Particular Integral (P I) of the equation where is given by |
| Option A: |  |
| Option B: |  |
| Option C: |  |
| Option D: |  |
|  |  |
| 15. | The Value of is given by |
| Option A: |  |
| Option B: |  |
| Option C: |  |
| Option D: |  |
|  |  |
| 16. | The length of the straight line is given by |
| Option A: | units |
| Option B: | units |
| Option C: | units |
| Option D: | units |
|  |  |
| 17. | After changing the integral into polar form, the integral can be given by |
| Option A: |  |
| Option B: |  |
| Option C: |  |
| Option D: |  |
|  |  |
| 18. | The value of is given by |
| Option A: |  |
| Option B: |  |
| Option C: |  |
| Option D: |  |
|  |  |
| 19. | The value of will be given by |
| Option A: |  |
| Option B: |  |
| Option C: |  |
| Option D: |  |
|  |  |
| 20. | The value of is given by |
| Option A: |  |
| Option B: |  |
| Option C: |  |
| Option D: |  |
|  |  |
| 21. | dx is |
| Option A: |  |
| Option B: |  |
| Option C: |  |
| Option D: |  |
|  |  |
| 22. | Find the complementary function of |
| Option A: |  |
| Option B: |  |
| Option C: |  |
| Option D: |  |
|  |  |
| 23. |  |
| Option A: | 1 |
| Option B: |  |
| Option C: |  |
| Option D: |  |
|  |  |
| 24. | The Order of the Differential Equation |
| Option A: | 1 |
| Option B: | 2 |
| Option C: | 3 |
| Option D: | 4 |
|  |  |
| 25. | is equal to |
| Option A: |  |
| Option B: |  |
| Option C: |  |
| Option D: |  |
|  |  |
| 26. | The value of |
| Option A: |  |
| Option B: |  |
| Option C: |  |
| Option D: |  |
|  |  |
| 27. | Integrating factor of |
| Option A: |  |
| Option B: |  |
| Option C: |  |
| Option D: |  |
|  |  |
| 29. | Particular Integral of DE is |
| Option A: |  |
| Option B: |  |
| Option C: |  |
| Option D: |  |
|  |  |
| 30. | The value of |
| Option A: |  |
| Option B: |  |
| Option C: |  |
| Option D: |  |
|  |  |
| 31. | The area bounded by the line |
| Option A: | 7/2 |
| Option B: | 9/2 |
| Option C: | 9/4 |
| Option D: | 11 |
|  |  |
| 32. | The solution of DE is |
| Option A: |  |
| Option B: |  |
| Option C: |  |
| Option D: |  |
|  |  |
|  |  |
| 34. | The value of |
| Option A: | -1/6 |
| Option B: | -1/12 |
| Option C: | 1/18 |
| Option D: | 1/9 |
|  |  |
| 35. | The value of integral over the positive octant of the sphere 4 is |
| Option A: |  |
| Option B: |  |
| Option C: |  |
| Option D: |  |
|  |  |
| 36. | The length of the cardioid is |
| Option A: | 16 |
| Option B: | 12 |
| Option C: | 8 |
| Option D: | 6 |
|  |  |
| 37. | is equal to |
| Option A: | 4 |
| Option B: | 6 |
| Option C: | 2 |
| Option D: | 3 |
|  |  |
| 38. | The Solution of is |
| Option A: | x. |
| Option B: | (y+1)(x |
| Option C: | y |
| Option D: |  |
|  |  |
| 39. | Changing the order of integration in double integral leads to then value of ‘c’ is |
| Option A: |  |
| Option B: |  |
| Option C: |  |
| Option D: |  |
|  |  |
|  |  |
| 41. | Solution of the differential equations is |
| Option A: |  |
| Option B: |  |
| Option C: |  |
| Option D: |  |
|  |  |
| 42. | , where D= is given by |
| Option A: | k1sin2y + k2cos2y |
| Option B: | k1sin2x + k2cos2x |
| Option C: | k1sin2x - k2cos2x |
| Option D: | k1sin2x + k2cos2x |
|  |  |
| 43. | If B(n,2) = n is positive integer then value of n is |
| Option A: | 3 |
| Option B: | 2 |
| Option C: | 1 |
| Option D: | 4 |
|  |  |
| 44. | The value of I = is |
| Option A: |  |
| Option B: |  |
| Option C: |  |
| Option D: |  |
|  |  |
| 45. | The region of integration in represents |
| Option A: | Tetrahedron |
| Option B: | Cylinder |
| Option C: | Plane |
| Option D: | Sphere |
|  |  |
|  |  |
| 47. | If the differential equations ydx + x(1-3x2y2) dy = 0 is non-exact then the integrating factor is |
| Option A: |  |
| Option B: |  |
| Option C: |  |
| Option D: |  |
|  |  |
| 48. | The value of the particular integral is |
| Option A: |  |
| Option B: |  |
| Option C: |  |
| Option D: |  |
|  |  |
| 49. | Value of |
| Option A: |  |
| Option B: |  |
| Option C: |  |
| Option D: |  |
|  |  |
| 50. | On changing the order of integration for ,  where a= |
| Option A: |  |
| Option B: |  |
| Option C: |  |
| Option D: |  |
|  |  |
| 51. | Evaluate: |
| Option A: |  |
| Option B: |  |
| Option C: |  |
| Option D: |  |
|  |  |
|  |  |
| 53. | The degree and order of the differential equation 3x are respectively |
| Option A: | 4,1 |
| Option B: | 4,2 |
| Option C: | 2,4 |
| Option D: | 1,4 |
|  |  |
| 54. | The value of the particular integral is |
| Option A: |  |
| Option B: |  |
| Option C: |  |
| Option D: |  |
|  |  |
| 55. | Evaluate: |
| Option A: |  |
| Option B: |  |
| Option C: |  |
| Option D: |  |
|  |  |
| 56. | Changing to polar co-ordinates the value of integral is |
| Option A: |  |
| Option B: |  |
| Option C: |  |
| Option D: |  |
|  |  |
| 57. | Evaluate:yzdxdydz throughout the volume bounded by x=0,y=0,z=0,x+y+z=1 |
| Option A: |  |
| Option B: |  |
| Option C: |  |
| Option D: |  |
|  |  |
|  |  |
| 59. | The particular integral |
| Option A: |  |
| Option B: |  |
| Option C: |  |
| Option D: |  |
|  |  |
| 60. | Evaluate: |
| Option A: | 2log2 |
| Option B: | 2log2 |
| Option C: | log2 |
| Option D: | 2log2 |

**Descriptive Questions**

|  |  |
| --- | --- |
|  | Using Beta function, Prove that |
|  | Change the order of integration in the integral |
|  | Using the method of variation of parameters, solve |
|  | Solve . |
|  | Solve the Differential Equation |
|  | Evaluate the integral |
|  | Evaluate the integral |
|  | Solve the Differential Equation |
|  | Change to polar coordinates and Evaluate . |
|  | Assuming the validity of differentiation under the integral sign, Prove that |
|  | Solve the Differential Equation |
|  | Solve the Differential Equation . |
|  | Prove that . =. |
|  | Solve the Differential Equation |
|  | Evaluate over the positive quadrant of the circle . |
|  | Find the entire length of cardioid |
|  | Solve |
|  | Show that the area between the parabolas . |
|  | Solve the DE |
|  | Using Method of variation of parameters solve |
|  | Change the order of integration |
|  | Prove that |
|  | Prove that , over the tetrahedron bounded by |
|  | Prove that |
|  | Solve the DE |
|  | Prove that . |
|  | Solve the DE |
|  | Evaluate the integral over the region bounded by the curves |
|  | Show that the length of the cardioid lies outside the circle is |
|  | Evaluate the integral over throughout the volume of the sphere |
|  | Solve the DE |
|  | Solve the DE |
|  | Express into polar form and evaluate the integral |
|  | Evaluate the integral over the region bounded by |
|  | Prove that |
|  | Show that the length of the parabola which lies inside the circle is . |
|  |  |
|  | Find total length of |
|  | Solve |
|  | Change the order of integration for the integral |
|  | Evaluate over the solid of the paraboloid cut off  by the plane z = 4 |
|  | Solve |
|  | Evaluate |
|  | .Solve |
|  | Change it to polar and Evaluate |
|  | Evaluate throughout the area bounded by and |
|  |  |
|  | using method of variation of parameters |
|  | Find the length of the cardioid r= a(1-cosθ) lying outside the circle r = acosθ. |
|  | Change the order of integration and evaluate |
|  | Evaluate: throughout the volume of the sphere |
|  |  |
|  | Solve : |
|  | Prove that , assuming the validity of differentiation under the integral sign. |
|  | Evaluate : over one loop of the lemniscate = |
|  | Change to polar co-ordinates and evaluate |