Reg.No. \_\_\_\_\_\_\_\_\_\_\_\_\_



**End Semester Examination – Nov / Dec – 2019**

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|  |  |  |  |
| **Code :** | **13MA202 / 14MA1002** | **Duration :** | **3hrs** |
| **Sub. Name :** | **CALCULUS AND STATISTICS** | **Max. Marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | | **Marks** | |
| 1. | a. | Solve (D2 - 4D + 3) y = e 2x  + sin4x + x2. | CO1 | | 10 | |
| b. | Solve y″ + y = tan x by the method of variation of parameters. | CO1 | | 10 | |
| **(OR)** | | | | | | |
| 2. | a. | Solve | CO1 | | 10 | |
| b. | Solve . | CO1 | | 10 | |
|  | | | | | | |
| 3. | a. | Change the order of integration and then evluate | CO1 | | 10 | |
| b. | Evaluate | CO1 | | 10 | |
| **(OR)** | | | | | | |
| 4. | a. | Find the area of ellipse. | CO1 | | 10 | |
| b. | Find the volume of the tetrahedron bounded by the planes x= 0, y = 0, z= 0 and x + y +z = 1. | CO1 | | 10 | |
|  | | | | | | |
| 5. | a. | Prove that | CO1 | | 10 | |
| b. | Show that | CO1 | | 10 | |
| **(OR)** | | | | | | |
| 6. | a. | Evaluate and hence find the value of | CO1 | | 10 | |
| b. | Prove that | CO1 | | 10 | |
|  | | | | | | |
| 7. | a. | Solve z= px+qy + | CO1 | | 10 | |
| b. | Form a PDE by eliminating the arbitrary functions ‘f ’ and ‘g’ in z = f(2x+y) +g(3x-y). | CO1 | | 10 | |
| **(OR)** | | | | | | |
| 8. | a. | Solve (y – z) p + ( z –x) q = (x-y) | CO1 | | 10 | |
| b. | Solve () z = sin(2x+3y) + | CO1 | | 10 | |
|  | | **Compulsory:** | |  | |  | |
| 9. | a. | Calculate mean, median and mode for the following data:   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | Weight (in gm) | 0-10 | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 | | No. of article | 14 | 17 | 22 | 26 | 23 | 18 | | | CO1 | | 10 | |
| b. | Obtain the correlation coefficient for the following heights (in inches) of fathers (X) and their sons (Y):   |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | X | 55 | 56 | 58 | 59 | 60 | 60 | 62 | 58 | 64 | | Y | 35 | 36 | 38 | 39 | 44 | 43 | 45 | 50 | 53 | | | CO1 | | 10 | |