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

G:\logo and QP Template\logo 3 Feb 2018 final.tif

**End Semester Examination – Nov/Dec – 2018**

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
| **Code :** | **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 . | CO1 | 10 |
| b. | Using method of variation of parameter, Solve . | CO1 | 10 |
| (OR) | | | | |
| 2. | a. | Solve | CO1 | 10 |
| b. | Solve ; | CO1 | 10 |
|  |  |  |  |  |
| 3. | a. | Change the order of integration and evaluate | CO2 | 10 |
| b. | Find the volume of the solid bounded by the plane x=0,y=0, z=0 and x+y+z=1. | CO2 | 10 |
| (OR) | | | | |  |  |  |  | d. |  |  |  |
| 4. | a. | Evaluate over the cardioid  above the initial line | CO2 | 10 |
| b. | Evaluate | CO2 | 10 |
|  |  |  |  |  |
| 5. | a. | Prove that and hence deduce the duplication formula | CO2 | 10 |
| b. | Prove that | CO2 | 10 |
| (OR) | | | | |
| 6. | a. | Prove that . | CO2 | 15 |
| b. | Evaluate . | CO2 | 5 |
|  |  |  |  |  |
| 7. | a. | Solve | CO1 | 10 |
| b. | Form a partial differential equation by eliminating arbitrary function from | CO1 | 10 |
| (OR) | | | | |
| 8. | a. | Solve . | CO1 | 10 |
| b. | Solve . | CO1 | 10 |
|  | |  |  |  |
|  | | **Compulsory**: |  |  |
| 9. | a. | The two regression lines are 8x – 10y + 66 = 0 and 40x – 18y – 214 = 0 with the variance of x is 9. Find   1. the mean values of x and y 2. the correlation coefficient between x and y. 3. find standard deviation of y. | CO3 | 10 |
| b. | Find the mean, median and mode for the following distribution.   |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | | C.I | 5-10 | 10-15 | 15-20 | 20-25 | 25-30 | 30-35 | 35-40 | 40-45 | | f | 5 | 6 | 15 | 10 | 5 | 4 | 2 | 2 | | CO3 | 10 |