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



**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

**End Semester Examination – April/May– 2017**

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| --- | --- | --- | --- |
| **Sub. 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. | Solve ; . | CO1 | | 10 |
| (OR) | | | | | |
| 2. | a. | Solve | CO1 | | 10 |
| b. | Using method of variation of parameter, 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 & x+y+z=a | CO2 | | 10 |
| (OR) | | | | | |
| 4. | a. | Evaluate  over the area inclined between the circles and . | CO2 | | 10 |
|  | b. | Evaluate | CO2 | | 10 |
| 5. | a. | State and prove the relation between Beta and Gamma function. | CO2 | | 15 |
|  | b. | Prove that . | CO2 | | 5 |
| (OR) | | | | | |
| 6. | a. | Evaluate  and hence find the value of | | CO2 | 10 |
|  | b. | Prove that  X  = π | | CO2 | 10 |
| 7. | a. | Solve | | CO1 | 10 |
|  | b. | Solve | | CO1 | 10 |
| (OR) | | | | | |
| 8. | a. | Form the partial differential equation by eliminating the arbitrary function from | | CO1 | 10 |
|  | b. | Sovle | | CO1 | 10 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | | **Compulsory:** |  |  |
| 9. | a. | Compute the coefficients of correlation between X and Y using the following data.     |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | | X | 65 | 66 | 67 | 67 | 68 | 69 | 70 | 72 | | Y | 67 | 68 | 65 | 68 | 72 | 72 | 69 | 71 | | CO3 | 10 |
|  | b. | Find the mean, median and mode for the following distribution.   |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | | X | 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 |

ALL THE BEST