**H.T No**

**Regulations:**

**A18**



**Sreenidhi Institute of Science and Technology**

(An Autonomous Institution)

**Code No: 7HC06 Date: 05-Oct-2020 (FN)**

**B.Tech I-Year I-Semester External Examination, October - 2020 (Supplementary)**

**ENGINEERING MATHEMATICS - I (CIVIL, EEE, ME and ECE)**

**Time: 2 Hours Max.Marks:70**

***Note: a****) No additional answer sheets will be provided.*

*b) All sub-parts of a question must be answered at one place only, otherwise it will not be valued.*

*c) Missing data can be assumed suitably.*

**ANSWER ANY FIVE QUESTIONS. EACH QUESTION CARRIES 14 MARKS.**

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| --- | --- | --- | --- |
| 1. | a) | Verify Rolle’s theorem for the function in the interval | [7M] |
|  | b) | Verify Cauchy’s mean value theorem for  In [1,2] | [7M] |
|  |  |  |  |
| 2. | a) | Show that evaluate of is | [7M] |
|  | b) | Find the value of | [7M] |
|  |  |  |  |
| 3. | a) | Test for convergence of the series | [7M] |
|  | b) | Obtain the Fourier series for in the interval | [7M] |
|  |  |  |  |
| 4. | a) | Find the maximum and minimum distances of the point (3,4,12) from the sphere | [7M] |
|  | b) | If is a constant vector and then prove that | [7M] |
|  |  |  |  |
| 5. | a) | Solve the system of equations  by Gauss elimination method. | [7M] |
|  | b) | Prove that the matrix is orthogonal | [7M] |
|  |  |  |  |
| 6. | a) | Find the Eigen values and corresponding Eigen vectors of the  matrix | [7M] |
|  | b) | If the matrix A have Eigen values 1,2,-1 then find the trace of the matrix | [7M] |
|  |  |  |  |
| 7. | a) | Find the Fourier series expansion of | [7M] |
|  | b) | Evaluate over the region R bounded by | [7M] |
|  |  |  |  |
| 8. | a) | Prove that | [7M] |
|  | b) | If then show that | [7M] |

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