**H.T No**

**Regulations:**

**A15**



**Sreenidhi Institute of Science and Technology**

(An Autonomous Institution)

**Code No: 5H316 Date: 08-Oct-2020 (FN)**

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

**Mathematics for Biotechnology - III (BT)**

**Time: 2 Hours Max.Marks:75**

***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 15 MARKS.**

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| 1. | a) | Reduce the matrix by reducing it to normal form | [8M] |
|  | b) | Find the value of such that the system of equations has non trivial solutions. | [7M] |
|  |  |  |  |
| 2. | a) | Find Eigen values and Eigen vectors of the matrix | [8M] |
|  | b) | If , find using Cayley- Hamilton theorem. | [7M] |
|  |  |  |  |
| 3. | a) | Using Lagrange’s interpolation formula, find the function which takes the values | [8M] |
|  | b) | Evaluate | [7M] |
|  |  |  |  |
| 4. | a) | Find root of by Regula Falsi method which between 1 and 2 | [8M] |
|  | b) | Evaluate , by applying Newton Rapson formula to 3 decimals. | [7M] |
|  |  |  |  |
| 5. | a) | Fit a an exponential curve for the data | [8M] |
|  | b) | Evaluate , using Trapezoidal rule with . | [7M] |
|  |  |  |  |
| 6. | a) | Find where with , using Euler method with | [8M] |
|  | b) | Evaluate , using Simpson’s 1/3 rule with | [7M] |
|  |  |  |  |
| 7. | a) | Using Cayley-Hamilton theorem find the value of  where | [8M] |
|  | b) | Obtain the function whose first difference is | [7M] |
|  |  |  |  |
| 8. | a) | Using Runge- Kutta method, find with with | [8M] |
|  | b) | Find the root of the equation by using bisection method which lie  between 2 and 4 upto six iterations | [7M] |

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