**Regulations:**

**A15**



**H.T No**

**Sreenidhi Institute of Science and Technology**

(An Autonomous Institution)

**Code No: 5H214 Date: 21-Jan-2020 (FN)**

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

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

**Time: 3 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.*

**Part - A Max.Marks:25**

**Answer all QUESTIONS.**

|  |  |  |
| --- | --- | --- |
| 1. | If  , then find the integrating factor. | [3M] |
| 2. | Solve. | [3M] |
| 3. | Form the partial differential equation by eliminating the arbitrary function from the relation | [3M] |
| 4. | Find the Fourier coefficient  in the Fourier series expansion of . | [3M] |
| 5. | Find the Laplace Transform. | [3M] |
| 6. | Find . | [2M] |
| 7. | Solve | [2M] |
| 8. | Solve | [2M] |
| 9. | If  then find | [2M] |
| 10. | Solve . | [2M] |

**Part – B Max.Marks:50**

**ANSWER ANY FIVE QUESTIONS. EACH QUESTION CARRIES 10 MARKS.**

|  |  |  |  |
| --- | --- | --- | --- |
| 11. | a) | Solve | [5M] |
|  | b) | Solve | [5M] |
|  |  |  |  |
| 12. |  | Solve. | [10M] |
|  |  |  |  |
| 13. | a) | Solve | [5M] |
|  | b) | Solve | [5M] |
|  |  |  |  |
| 14. |  | Find the Fourier series to represent the function | [10M] |
|  |  |  |  |
| 15. | a) | Find the Laplace transform of | [5M] |
|  | b) | Find the Laplace Transform of the rectified semi-wave function defined by | [5M] |
|  |  |  |  |
| 16. |  | Solve  such that  by Laplace transform method. | [10M] |
|  |  |  |  |
| 17. |  | Apply the method of variation of parameters to solve . | [10M] |
|  |  |  |  |
| 18. |  | Find the Laplace transform of the functions  i)  ii)  iii)  and  is periodic with period | [10M] |

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