** D.Y. PATIL COLLEGE OF ENGINEERING & TECHNOLOGY**

**Set-: I**

**Q. Paper Code:**

**22FY102201**

**KASABA BAWADA KOLHAPUR-416006**

**(An Autonomous Institute)**

**F. Y. B. Tech.**

**END SEMESTER EXAMINATION, August. – 2022**

Course Name: Engineering Mathematics-II, Course Code: 201GEL102

Seat No:

**Day and Date: Thursday, 04.08.2022**

**Time: 11.00 am to 1.00 pm Max. Marks- 50**

***Instructions:***

1. *Question No. 1 is compulsory.*
2. *Figure to the right indicate full marks.*
3. *Use of Non-Programmable Calculator is allowed*

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| **BT** | **CO’s** | **Q. No.** |  | **Marks** |
|  |  | **Q.1** | **All questions are compulsory** | **20** |
| L3 | 102.1 | a | Solve | 6 |
| L3 | 102.1 | b | In a circuit of resistance R, self inductance L, the current i is given by  where E, p are constant. Calculate the current i at any time t. | 7 |
| L3 | 102.2 | c | Calculate the approximate value of y by Runge-Kutta method. Given that with | 7 |
|  | | | | |
|  |  | **Q.2** | **Attempt any Two from the following** | **10** |
| L3 | 102.3 | a | Evaluate | 5 |
| L3 | 102.3 | b | Evaluate | 5 |
| L3 | 102.3 | c | Apply DUIS to prove that | 5 |
|  | | | | |
|  |  | **Q.3** | **Attempt any Two from the following** | **10** |
| L3 | 102.2 | a | Calculate first three derivatives of the function tabulated below at the point | 5 |
| L3 | 102.2 | b | A rod is rotating in a plane. The following table gives angle  ( in radians) through which the rod has turned for various time t seconds    Calculate angular velocity and angular acceleration at | 5 |
| L3 | 102.2 | c | Using Lagrange’s interpolation formula, compute f (3) for the following data | 5 |
|  | | | | |
|  |  | **Q.4** | **Attempt any Two from the following** | **10** |
| L3 | 102.4 | a | Evaluate | 5 |
| L3 | 102.4 | b | Calculate the area between and the chord AB joining the points . | 5 |
| L3 | 102.4 | c | Change the order of integration and evaluate | 5 |

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