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



**End Semester Examination – Nov / Dec – 2019**

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|  |  |  |  |
| **Code :** | **14MA2004** | **Duration :** | **3hrs** |
| **Sub. Name :** | **LAPLACE TRANSFORMS, FOURIER SERIES AND TRANSFORMS** | **Max. Marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Q. No. | Sub Div. | Questions | Course  Outcome | Marks |
| 1. | a. | Find *L( .* | CO1 | 10 |
| b. | Find *L()*. | CO1 | 10 |
| **(OR)** | | | | |  | | | |  | (OR) |
| 2. | a. | Find by using laplace transform. | CO1 | 10 |
| b. | Find the Laplace transform of the triangular wave function of period 2a given by | CO1 | 10 |
|  |  |  |  |  |
| 3. | a. | Find . | CO1 | 10 |
| b. | Solve given ,  using Laplace transform. | CO1 | 10 |
| **(OR)** | | | | |  |  | CO1 |
| 4. | a. | Find | CO1 | 10 |
| b. | Find | CO1 | 10 |
|  |  |  |  |  |
| 5. |  | Find the Fourier Transform of  Also evaluate . | CO1 | 20 |
| **(OR)** | | | | |  |  | CO3 |
| 6. | a. | Evaluate and  for n>0. | CO1 | 10 |
| b. | Find the Fourier sine transform of | CO1 | 10 |
|  |  |  |  |  |
| 7. | a. | Find  for the function in . | CO3 | 10 |
| b. | Express when in a Fourier series of periodicity . | CO3 | 10 |
| **(OR)** | | | | |  | | | |  | (OR) |
| 8. | a. | Expand when  in a Fourier series of periodicity . | CO2 | 5 |
| b. | Find the Fourier series of the function in . | CO2 | 15 |
|  | | **Compulsory:** |  |  |
| 9. | a. | Find the half range Fourier cosine series for the function . | CO2 | 5 |
| b. | Compute the first three harmonics of the Fourier series for f(x) from the following data.  x 0  f(x) 1.0 1.4 1.9 1.7 1.5 1.2 1.0 | CO2 | 15 |