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

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**End Semester Examination – Nov/Dec – 2018**

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| --- | --- | --- | --- |
| **Code :** | **17MA2004** | **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 the Laplace Transform of the full wave rectifier  having period . | CO1 | 15 |
| b. | Evaluate . | CO1 | 5 |
| (OR) | | | | |
| 2. | a. | Find the Laplace Transform of the function with periodicity ,where. | CO1 | 15 |
| b. | Find | CO1 | 5 |
| 3. | a. | Find . | CO1 | 10 |
| b. | Evaluate . | CO1 | 10 |
|  |  | (OR) |  |  |
| 4. | a. | Find. | CO1 | 10 |
| b. | Find . | CO1 | 10 |
| 5. | a. | Find  using partial fraction. | CO1 | 10 |
| b. | Apply convolution theorem to evaluate | CO2 | 10 |
| (OR) | | | | |
| 6. | a. | Find | CO1 | 10 |
| b. | Using Laplace Transforms solve given . | CO4 | 10 |
| 7. | a. | Obtain the Fourier series for  as a Fourier Series in the interval . | CO3 | 15 |
| b. | Expand  as a Half range sine series in | CO6 | 5 |
| (OR) | | | | |
| 8. |  | Obtain the first three coefficients in the Fourier cosines for y,where y is given in the Following table.   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | X(degrees) | 0 | 60 | 120 | 180 | 240 | 300 | | Y | 4 | 8 | 15 | 7 | 6 | 2 | | CO3 | 20 |
|  | | **Compulsory**: |  |  |
| 9. | a. | Find the Fourier transform of . Hence evaluate | CO5 | 10 |
| b. | Using Parseval’s Identity evaluate. | CO6 | 10 |