|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Reg.No : |  |  |  |  |  |  |  |  |  |  |  |

**D.K.M. COLLEGE FOR WOMEN (AUTONOMOUS), VELLORE-1**

**SEMESTER EXAMINATIONS**

**NOVEMBER - 2018 15CMA3B**

**ELECTIVE I : LAPLACE AND FOURIER TRANSFORMS**

**Time : 3 Hours Max. Marks : 75**

**Section – A (10 x 2 = 20)**

**Answer ALL the questions.**

1. *State condition for existence Laplace Transform.*
2. *Find L [2e-t + e2t ].*
3. *State initial and final value theorem.*
4. *Define periodic function.*
5. *Write formula for (i) (ii)*
6. *Solve .*
7. *State Fourier integral theorem.*
8. *State Fourier cosine transform.*
9. *State convolution theorem for Fourier transforms.*
10. *State Parseval’s Identity.*

**Section – B ( 5 x 5 = 25 )**

**Answer any Five of the following questions.**

1. *Find the Laplace transform of sin5t sin3t.*
2. *Find the Laplace transform of*
3. *Find the Laplace transform of where .*
4. *Find .*
5. *Solve by using Laplace transform given that y(0)= -2 ,*
6. *Evaluate .*
7. *Obtain Fourier sine Transform of .*
8. *Prove that .*

**Section – C ( 3 x 10 = 30 )**

**Answer ALL the questions.**

1. *(a)* *Find the Laplace transform of (i) (ii).*

*(Or)*

*(b) Find the Laplace transform of where .*

1. *(a) Solve by using Laplace transform given that y(0)=0 ,.*

*(Or)*

*(b) Obtain Fourier cosine Transform of*

1. *(a) Obtain Fourier Transform of deduce that .*

*(Or)*

*(b) Show that Fourier Transform of by finding Fourier transform of , a > 0.*

\* \* \* \* \* \*