Code No.: ETMA 201	**L**	**T**	**C**
Paper: Applied Mathematics – III	**3**	**1**	**4**

INSTRUCTIONS TO PAPER SETTERS: **MAXIMUM MARKS: 75**

1. Question No. 1 should be compulsory and cover the entire syllabus. This question should have objective or short answer type questions. It should be of 25 marks.
2. Apart from question no. 1, rest of the paper shall consist of four units as per the syllabus. Every unit should have two questions. However, student may be asked to attempt only 1 question from each unit. Each question should be of 12.5 marks.

UNIT – I

Laplace Transformation: Laplace Transformation, Inverse Laplace transformation Convolution Theorem, application to linear differential equations with constant coefficients, Unit step function, impulse functions / periodic functions. **[No. of Hrs.: 11]**

UNIT – II

Fourier Series: Fourier Series, Euler's formulae, even and odd functions, having arbitrary periods, half range expansion, Harmonic Analysis.

Fourier Transforms: Fourier transform, Sine and Cosine transforms, Application to differential equations. **[No. of Hrs.: 11]**

UNIT – III

Special Functions: Beta and Gamma functions, Bessels functions of first kind, Recurrence relations, modified Bessel functions of first kind, Ber and Be functions, Legendre Polynomial, Rodrigue's formula, orthogonal expansion of function. **[No. of Hrs.: 11]**

UNIT – IV

Partial Differential Equation: Formation of first and second order linear equations, Laplace, Wave and heat conduction equation, initial and boundary value problems. **[No. of Hrs.: 11]**

TEXT BOOKS:

1. E. Kresyig, "Advanced Engineering Mathematics", 5th Edition, John Wiley & Sons, 1999.

REFERENCE BOOKS:

1. B.S. Grewal, "Elementary Engineering Mathematics", 34th Ed., 1998.
2. H.K. Dass, "Advanced Engineering Mathematics", S. Chand & Company, 9th Revised Edition, 2001.
3. Shanti Narayan, "Integral Calculus", S. Chand & Company, 1999
4. Shanti Narayan, "Differential Caluculs", S.Chand & Company, 1998