Sub Code

:

06EC44

IA Marks

:

25

Hrs/ Week

:

04

Exam Hours

:

03

Total Hrs.

:

52

□

Exam Marks

:

100

PART – A

UNIT 1:

Introduction: Definitions of a signal and a system, classification of signals, basic Operations on signals, elementary signals, Systems viewed as Interconnections of operations, properties of systems.

7 Hours

UNIT 2:

Time-domain representations for LTI systems – 1: Convolution, impulse response representation, Convolution Sum and Convolution Integral.

6 Hours

UNIT 3:

Time-domain representations for LTI systems – 2: properties of impulse response representation, Differential and difference equation Representations, Block diagram representations.

7 Hours

UNIT 4:

Fourier representation for signals – 1: Introduction, Discrete time and continuous time Fourier series (derivation of series excluded) and their properties .

6 Hours

PART – B

UNIT 5:

Fourier representation for signals – 2: Discrete and continuous Fourier transforms(derivations of transforms are excluded) and their properties.

6 Hours

UNIT 6:

Applications of Fourier representations: Introduction, Frequency response of LTI systems, Fourier transform representation of periodic signals, Fourier transform representation of discrete time signals

7 Hours

UNIT 7:

Z-Transforms – 1: Introduction, Z – transform, properties of ROC, properties of Z – transforms, inversion of Z – transforms.

07 Hours

UNIT 8:

Z-transforms – 2: Transform analysis of LTI Systems, unilateral Z- Transform and its application to solve difference equations.

06 Hours

TEXT BOOK

Simon Haykin and Barry Van Veen "Signals and Systems", John Wiley & Sons, 2001.Reprint 2002

REFERENCE BOOKS:

1. **Alan V Oppenheim, Alan S, Willsky and A Hamid Nawab,** "Signals and Systems" Pearson Education Asia / PHI, 2nd edition, 1997. Indian Reprint 2002

2. **H. P Hsu, R. Ranjan**, "Signals and Systems", Scham's outlines, TMH, 2006

3. **B. P. Lathi**, "Linear Systems and Signals", Oxford University Press, 2005

4. **Ganesh Rao and Satish Tunga**, "Signals and Systems", Sanguine Technical Publishers, 2004

Question Paper Pattern: Student should answer FIVE full questions out of 8 questions to be set each carrying 20 marks, **selecting at least TWO questions from each part**

Coverage in the Text:

UNIT 1: 1.1, 1.2, 1.4 to 1.8

UNIT 2: 2.1, 2.2

UNIT 3: 2.3**,** 2.4, 2.5

UNIT 4: 3.1, 3.2, 3.3, 3.6

UNIT 5: 3.4, 3.5, 3.6

UNIT 6: 4.1, 4.2, 4.3, 4.5, 4.6.

UNIT 7: 7.1, 7.2, 7.3, 7.4, 7.5

UNIT 8: 7.6 (Excluding 'relating the transfer function and the State-Variable description, determining the frequency response from poles and zeros) and 7.8