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. Sampling theorm and Nyquist rate.

UNIT 7:

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

UNIT 8:

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

TEXT BOOK

1. **Simon Haykin,** "Signals and Systems", John Wiley India Pvt. Ltd., 2nd Edn, 2008.
2. **Michael Roberts,** "Fundamentals of Signals & Systems", 2nd ed, Tata McGraw-Hill, 2010

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", Pearson/Sanguine Technical Publishers, 2004

FUNDAMENTALS OF HDL
(Common to EC/TC/IT/BM/ML)

Sub Code	:	**10EC45**	**IA Marks**	:	**25**
Hrs/ Week	:	**04**	**Exam Hours**	:	**03**
Total Hrs.	:	**52**	**Exam Marks**	:	**100**

UNIT 1:

D.V.

H.O.D.
Dept. Of Electronics & Communication
Alva's Institute of Engg. & Technology
Mijar, MOODBIDRI - 574 225

Introduction: Why HDL? , A Brief History of HDL, Structure of HDL Module, Operators, Data types, Types of Descriptions, simulation and synthesis, Brief comparison of VHDL and Verilog

UNIT 2:
Data –Flow Descriptions: Highlights of Data-Flow Descriptions, Structure of Data-Flow Description, Data Type – Vectors.

UNIT 3:
Behavioral Descriptions: Behavioral Description highlights, structure of HDL behavioral Description, The VHDL variable –Assignment Statement, sequential statements.

UNIT 4:
Structural Descriptions: Highlights of structural Description, Organization of the structural Descriptions, Binding, state Machines, Generate, Generic, and Parameter statements.

UNIT 5: Procedures, Tasks, and Functions: Highlights of Procedures, tasks, and Functions, Procedures and tasks, Functions.
Advanced HDL Descriptions: File Processing, Examples of File Processing

UNIT 6:
Mixed –Type Descriptions: Why Mixed-Type Description? VHDL User-Defined Types, VHDL Packages, Mixed-Type Description examples

UNIT 7:
Mixed –Language Descriptions: Highlights of Mixed-Language Description, How to invoke One language from the Other, Mixed-language Description Examples, Limitations of Mixed-Language Description.
UNIT 8:
Synthesis Basics: Highlights of Synthesis, Synthesis information from Entity and Module, Mapping Process and Always in the Hardware Domain.

TEXT BOOKS:

D.V.

H.O.D.
Dept. Of Electronics & Communication
Alva's Institute
Mijar, Moodbidri

1. **HDL Programming (VHDL and Verilog)**- Nazeih M.Botros- John Weily India Pvt. Ltd. 2008.

REFERENCE BOOKS:

1. **Fundamentals of HDL** – Cyril P.R. Pearson/Sanguin 2010.
2. **VHDL** -Douglas perry-Tata McGraw-Hill
3. **A Verilog HDL Primer**- J.Bhaskar – BS Publications
4. **Circuit Design with VHDL**-Volnei A.Pedroni-PHI

LINEAR IC's & APPLICATIONS
(Common to EC/TC/IT/BM/ML)

Sub Code	:	**10EC46**	**IA Marks**	:	**25**
Hrs/ Week	:	**04**	**Exam Hours**	:	**03**
Total Hrs.	:	**52**	**Exam Marks**	:	**100**

UNIT 1:

Operational Amplifier Fundamentals: Basic Op-Amp circuit, Op-Amp parameters – Input and output voltage, CMRR and PSRR, offset voltages and currents, Input and output impedances, Slew rate and Frequency limitations; Op-Amps as DC Amplifiers- Biasing Op-Amps, Direct coupled -Voltage Followers, Non-inverting Amplifiers, Inverting amplifiers, Summing amplifiers, Difference amplifier.

UNIT 2:

Op-Amps as AC Amplifiers: Capacitor coupled Voltage Follower, High input impedance - Capacitor coupled Voltage Follower, Capacitor coupled Non-inverting Amplifiers, High input impedance - Capacitor coupled Non-inverting Amplifiers, Capacitor coupled Inverting amplifiers, setting the upper cut-off frequency, Capacitor coupled Difference amplifier, Use of a single polarity power supply.

UNIT 3:

Op-Amps frequency response and compensation: Circuit stability, Frequency and phase response, Frequency compensating methods, Band width, Slew rate effects, Z_{in} Mod compensation, and circuit stability precautions.

UNIT 4:

D.V.T

H.O.D.
Dept. Of Electronics & Communication
Alva's Institute of Engg. & Technology
Mijar, MOODBIDRI - 574 225