HUM-202-E   **FUNDAMENTALS OF MANAGEMENT**

L	T	P
3	1	-

Class Work   : 50 Marks
Theory   : 100 Marks
Total   : 150 Marks
Duration of Exam. : 3 Hrs.

UNIT-I

Meaning of management, Definitions of Management, Characteristics of management, Management Vs. Administration. Management-Art, Science and   Profession.   Importance of Management.   Development of Management thoughts.
Principles of Management. The Management Functions, Inter-relationship of Managerial functions.

UNIT-II

Nature and Significance of staffing, Personnel management, Functions   of personnel management, Manpower planning, Process of manpower planning, Recruitment,   Selection; Promotion - Seniority Vs. Merit. Training - objectives and types of training.

UNIT-III

Production Management : Definition, Objectives, Functions and Scope, Production Planning and Control; its significance, stages in production planning and control. Brief introduction to the concepts of material management, inventory control; its importance and various methods.

UNIT-IV

Marketing   Management - Definition of marketing,   Marketing concept, objectives & Functions of marketing.
Marketing Research - Meaning; Definition; objectives; Importance; Limitations; Process. Advertising - meaning of advertising, objectives, functions, criticism.

UNIT-V

Introduction of Financial Management, Objectives of Financial Management, Functions and Importance of Financial Management. Brief Introduction to the concept of capital structure and various sources of finance.

BOOKS RECOMMENDED :

TEXT BOOKS :

1.   Principles and Practice of Management - R.S. Gupta, B.D.Sharma, N.S. Bhalla. (Kalyani Publishers)
2.   Organisation and Management - R.D. Aggarwal (Tata Mc Graw Hill)

REFERENCE BOOKS :

1.   Principles & Practices of Management – L.M. Prasad (Sultan Chand & Sons)
2.   Management – Harold, Koontz and Cyrilo Donell (Mc.Graw Hill).
3.   Marketing Management – S.A. Sherlikar (Himalaya Publishing House, Bombay).
4.   Financial Management - I.M. Pandey (Vikas Publishing House, New Delhi)
5.   Management - James A.F. Stoner & R.Edward Freeman, PHI.

NOTE: Eight questions are to be set atleast one question from each unit and the students will have to attempt five questions in all.

MATH-202-E   **NUMERICAL METHODS**
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   **(COMMON FOR EE,EL,CHE,EI,IC & ELECTIVE FOR CSE,IT IN 8ᵗʰ
                      SEM.)**

L T P   Sessional   : 50 Marks
3 1 –   Exam.   : 100 Marks
                                Total   : 150 Marks
                                Duration of exam. : 3 Hours

Part-A

<u>Interpolation and curve fitting</u> : Interpolation problem,
Lagrangian polynomials,   Divided   differences,
Interpolating with a cubic spline, Bezier curves and B-
spline curves, Least square approximations.

<u>Non-Linear Equations</u> : Bisection   method,   Linear
Interpolation methods, Newton's method, Muller's method,
fixed-point method.

<u>Simultaneous Linear Equations</u> : Elimination method, Gauss
and Gauss-Jordan method,   Jacobi's method, Gauss-Seidal
method, Relaxation method.

<u>Numerical Differentiation and Integration</u> : Derivatives
from   differences tables, Higher order derivatives,
Extrapolation   techniques,   Newton-cotes   integration
formula, Trapezoidal rule, Simpson's rules, Boole's rule
and Weddle's rule, Romberg's Integration.

Part-B

<u>Numerical Solution of Ordinary Differential Equations</u> :
Taylor   series   method,   Euler and   modified   Euler
method, Runge-Kutta   methods, Milne's method, Adams-
Moulton   method, Power method for Eigen values by
iteration.

<u>Numerial Solution of Partial Differential Equations</u> :
Finite   difference   approximations of   partial
derivatives, solution of Laplace equation (Standard 5-
point formula only), one-dimensional heat equation
(Schmidt   method, Crank-Nicolson method, Dufort and
Frankel method) and wave equation.

TEXT BOOKS :
1.   Applied Numerical Analysis : Curtis F. Gerald and
Patrick
     G. Wheatley-Pearson, Education Ltd.
2.   Numerical Method : E. Balagurusamy T.M.H.

REFERENCE BOOKS :
1.   Numerical Methods for Scientific and Engg.
Computations :
     M.K. Jain, S.R.K. Iyenger and R.K. Jain-Wiley Eastern
Ltd.

2.   Introductory Methods of Numerical Analysis S.S. Sastry,
    P.H.I.
3.   Numerical Methods in Engg. & Science : B.S. Grewal.

Note: Examiner will set eight questions, taking four from
      Part-A and four from Part-B. Students will be
      required to attempt five questions taking atleast
      two from each part.

EE-202-E   **ANALOG ELECTRONICS**

L	T	P		CLASS WORK	:	50
3	1	0		EXAM	:	100
				TOTAL	:	150
				DURATION OF EXAM	:	3 HRS

UNIT 1 SEMICONDUCTOR DIODE :
P-N junction and its V-I Characteristics, P-N junction as a rectifier, Switching characteristics of Diode.

UNIT 2 DIODE CIRCUITS :
Diode as a circuit element, the load-line concept, half-wave and full wave rectifiers, clipping circuits, clamping circuits, filter circuits, peak to peak detector and voltage multiplier circuits.

UNIT 3 TRANSISTOR AT LOW FREQUENCIES:
Bipolar junction transistor : operation, characteristics, Ebers-moll model of transistor, hybrid model, h-parameters (CE, CB, CC configurations), analysis of a transistor amplifier circuits using h-parameters, emitter follower, Miller's Theorem , frequency response of R-C coupled amplifier.

UNIT 4 TRANSISTOR BIASING :
Operating point, bias stability, collector to base bias, self-bias, emitter bias, bias compensation, thermistor & sensistor compensation.

UNIT 5 TRANSISTOR AT HIGH FREQUENCIES:
 Hybrid P model, CE short circuit current gain, frequency response,   alpha, cutoff frequency, gain bandwidth   product, emitter follower at high frequencies.

UNIT 6 FIELD EFFECT TRANSISTORS :
Junction field effect transistor, pinch off voltage, volt-ampere characteristics, small signal model, MOSFET Enhancement & Depletion mode, V-MOSFET.Common source amplifier, source follower, biasing of FET, applications of FET as a voltage variable resistor (V V R).

UNIT 7 REGULATED POWER SUPPLIES :
Series and shunt voltage regulators, power supply parameters, three terminal IC regulators, SMPS.

TEXT BOOK :
1 .Integrated Electronics: Millman & Halkias ; McGrawHill
2. Electronic circuit analysis and design (Second edition): D.A.Neamen; TMH

REFERENCE BOOKS:
1. Electronics Principles: Malvino ; McGrawHill
2. Electronics Circuits: Donald L. Schilling & Charles Belove ; McGrawHill
3. Electronics Devices & Circuits: Boylestad & Nashelsky ; Pearson.

NOTE: Eight questions are to be set in all by the examiner taking at least one question from each unit. Students will be required to attempt five questions in all.

EE-204-E   **DIGITAL ELECTRONICS**

L	T	P			
3	1	0			

CLASS WORK   :   50
EXAM   :   100
TOTAL   :   150
DURATION OF EXAM   :   3 HRS

UNIT 1 FUNDAMENTALS OF DIGITAL TECHNIQUES :
Digital signal, logic gates: AND, OR, NOT, NAND, NOR, EX-OR, EX-NOR, Boolean algebra. Review of Number systems. Binary codes: BCD, Excess-3, Gray,   EBCDIC, ASCII, Error detection and correction codes.

UNIT 2   COMBINATIONAL DESIGN USING GATES:
Design using gates, Karnaugh map and Quine Mcluskey methods of simplification.

UNIT 3   COMBINATIONAL DESIGN USING MSI DEVICES
Multiplexers and Demultiplexers and their use as logic elements, Decoders, Adders / Subtractors, BCD arithmetic circuits, Encoders, Decoders / Drivers for   display   devices.

UNIT 4   SEQUENTIAL CIRCUITS:
Flip Flops : S-R, J-K, T, D, master-slave, edge triggered, shift registers, sequence generators, Counters, Asynchronous and Synchronous Ring counters and Johnson Counter, Design of Synchronous and Asynchronous sequential circuits.

UNIT 5   DIGITAL LOGIC FAMILIES:
Switching mode operation of p-n junction, bipolar and MOS. devices. Bipolar logic families:RTL, DTL, DCTL, HTL, TTL, ECL, MOS, and CMOS logic families. Tristate logic, Interfacing of CMOS and TTL families.

UNIT 6   A/D AND D/A CONVERTERS:
Sample and hold circuit, weighted resistor and R -2 R ladder D/A Converters, specifications for D/A converters. A/D converters : Quantization, parallel -comparator, successive approximation, counting type, dual-slope ADC, specifications of ADCs.

UNIT 7   PROGRAMMABLE LOGIC DEVICES:
ROM, PLA, PAL, FPGA and CPLDs.

TEXT BOOK :
1. Modern Digital Electronics(Edition III) : R. P. Jain; TMH

REFERENCE BOOKS :
1. Digital Integrated Electronics : Taub & Schilling; MGH
2. Digital Principles and Applications : Malvino & Leach; McGraw Hill.
3. Digital Design : Morris Mano; PHI.

NOTE : Eight questions are to be set in all by the examiner taking at least one question from each unit. Students will be required to attempt five questions in all.

EE-206-E   **COMMUNICATION SYSTEMS**
(EE,EL,EI)

L T P   CLASS WORK   :   50
3 1 0