Fundamentals Of Management

L T P
3 1 0

Internal: 30 Marks
External: 70 Marks
Credit: 3.5
DURATION OF EXAM: 3 HRS

Unit-I
Meaning of social change, nature of social change, theories of social change. The direction of social change, the causes of social change. Factors of social change – the technological factors, the cultural factors, effects of technology on major social institutions, social need of status system, social relations in industry.

Unit –II

Unit-III

Unit-IV

Text Books:-

NOTE: Eight questions are to be set in total covering entire course selecting two questions from each unit. Each question will be of equal marks. Students will be required to attempt five questions in all, selecting at least one question from each unit.
ET-206-E Communication Systems

L T P Internal : 30 Marks
3 1 0 External : 70 Marks
Credit : 3.5
DURATION OF EXAM : 3 HRS

UNIT 1
INTRODUCTION TO COMMUNICATION SYSTEMS:
The essentials of a Communication system, modes and media’s of Communication, Classification of signals and systems, Fourier Analysis of signals.

UNIT 2
AMPLITUDE MODULATION:
Amplitude modulation, Generation of AM waves, Demodulation of AM waves, DSBSC, Generation of DSBSC waves, Coherent detection of DSBSC waves, single side band modulation, generation of SSB waves, demodulation of SSB waves, vestigial sideband modulation (VSB).
ANGLE MODULATION:
Basic definitions: Phase modulation (PM) & frequency modulation (FM), narrow band frequency modulation, wideband frequency modulation, generation of FM waves, Demodulation of FM waves.

UNIT 3
PULSE ANALOG MODULATION:
Sampling theory, time division (TDM) and frequency division (FDM) multiplexing, pulse amplitude modulation (PAM), pulse time modulation.
PULSE DIGITAL MODULATION:
Elements of pulse code modulation, noise in PCM systems, Measure of information, channel capacity, channel capacity of a PCM system, differential pulse code modulation (DPCM). Delta modulation (DM)

UNIT 4
DIGITAL MODULATION TECHNIQUES:
ASK, FSK, BPSK, QPSK, M-ary PSK.
INTRODUCTION TO NOISE:
External noise, Internal noise, S/N ratio, noise figure.

TEXT BOOKS:
2. Communication systems: Singh & Sapre; TMH.

REFERENCE BOOKS:
1. Electronic Communication systems : Kennedy; TMH.
2. Communication Electronics : Frenzel; TMH.
3. Communication system : Taub & Schilling; TMH.

NOTE: Eight questions are to be set in total covering entire course selecting two questions each unit. Each question will be of equal marks Students will be required to attempt five questions in all, selecting at least one question from each unit.
ET-302-E  Power System Analysis & Protection

L  T  P
3 1 0

Internal : 30 Marks
External : 70 Marks
Credit : 3.5
DURATION OF EXAM : 3 HRS

UNIT I

Introduction: Per unit quantities characteristics & representation of components of a power system, synchronous machines, transformers, lines cables & loads. Single line diagram, impedance diagram, line reactance diagrams.

Protective Relaying: Scheme of protection of generators, transformers, transmission lines & busbars, carrier current protection, functional characteristics of relays, operating principle of electromagnetic and static relays, over current, directional over current, differential relay, impedance relay.

UNIT II

Neutral grounding: Need for neutral grounding, various types of neutral grounding.


UNIT III

Fault Analysis:- Symmetrical faults: calculation of fault currents, use of current limiting reactors. Unsymmetrical faults: Types of transformation in power system analysis, symmetrical components transformation, sequence impedance of power system elements, Sequence network of power system analysis of unsymmetrical short faults sequence components filters, Network analysis & it’s application to interconnected system.

UNIT IV

Transients in Power Systems: Transient electric phenomenon, lighting & switching surges, travelling waves, reflection & refraction of waves with different line termination, Protection against dangerous pressure rises.


References:
1. Elements of power system analysis by W.D. Stevenson.
3. The transmission & Distribution of electric energy by H.Cotton.
5. A course in Electrical Power by Soni, Gupta & Bhatnagar.
6. Power System Analysis & Stability by S.S. Vadhera

NOTE: The question paper shall have eight questions in all organized into four sections, each section having two questions from each of the four units. The candidate shall have to attempt five questions in all, selecting at least one question from each un
UNIT 1

UNIT 2

UNIT 3

UNIT 4
8051 APPLICATIONS: Interfacing Keyboards Programs for small keyboards and matrix keyboards. Interfacing multiplexed displays, numeric displays and LCD displays. Measuring frequency and pulse width. Interfacing ADCs & DACs. Hardware circuits for handling multiple interrupts. 8051 Serial data communication modes- Mode 0, Mode 1, Mode 2 and Mode 3.

Suggested Books:

2. Intel’s manual on “Embedded Microcontrollers”

NOTE:
The question paper shall have eight questions in all organized into four sections, each section having two questions from each of the four units. The candidate shall have to attempt five questions in all, selecting at least one question from each unit.
ET-312-E Advanced Programming

L T P  Internal : 30 Marks
3 1 0  External : 70 Marks
Credit : 3.5
DURATION OF EXAM : 3 HRS

UNIT I
Review: Review of C language, standard library, basics of C environment, pre-processors directives, illustrative simple C programs, header files.
Review of elementary data structures - arrays, stacks, queues, link list with respect to storage representation and access methods.

UNIT II:
Searching methods: Sequential, binary, Indexes searches.
Sorting: internal and external sorting, Methods: bubble, insertion, selection, merge, heap, radix and quick sort. Comparison with respect to their efficiency.

UNIT III
Introduction to C++ : C++ environment: objects, classes & their associations, object modeling techniques, namespaces, basics of OOP concepts: Data encapsulation, abstraction, inheritance, reusability, polymorphism (compile time & run time). Illustrative C++ programs on the above topics.

UNIT IV
Topics in C++ : Access Specifiers: public, private & protected, Constructor: Constructor with default arguments, parameterized constructors, copy constructors, destructors, function overloading, operator overloading, friend functions & classes, types of inheritance, virtual functions. Illustrative C++ programs on the above topics.

Reference:
3. Herbert Schildt, “C++ Complete reference”, TMH.
5. Schaum Series in C programming, TMGH.

NOTE: The question paper shall have eight questions in all organized into four sections, each section having two questions from each of the four units. The candidate shall have to attempt five questions in all, selecting at least one question from each unit.
**LIST OF EXPERIMENTS:**


2. Study of Frequency Modulation and determination of Modulation index.

3. Study of Phase Modulation.


5. Study of Pulse Width Modulation.


7. Study of Pulse Code Modulation.

8. Study of Frequency Shift Keying.

9. Study of ASK and QASK.

10. Study of PSK and QPSK.

11. Project related to the scope of the course.

**NOTE:** At least ten experiments are to be performed, at least seven experiments should be performed from above list. Remaining three experiments may either be performed from the above list or designed & set by the concerned institution as per the scope of the syllabus.
1) WAP to implement stack.
2) WAP to implement queues.
3) Write a program to perform following operations on linked list. a) Insertion of a node b) Deletion of node.
4) WAP to sort a list using following a) Insertion sort b) Quick sort c) Bubble sort.
5) WAP to implement searching techniques.
6) WAP to find addition & multiplication of two matrices using classes.
7) WAP that shows the use of copy constructor & destructor.
8) Implement a program using compile time polymorphism (function & operator overloading).
9) Create two classes DM and DB which store the value of distances. DM stores distances in metres and centimeters and DB in feet and inches. Write a program that can read values for the class objects and add one object of DM with another object of DB. Use a friend function to carry out the addition operation. The object that stores the results maybe a DM object or DB object, depending on the units in which the results are required. The display should be in the format of feet and inches or metres and centimetres depending on the object on display.
10) WAP which shows the use of inheritance(multiple & multilevel).
11) WAP to find roots of quadratic equation using run-time polymorphism.

**NOTE** At least 7 experiments are to be performed from the above list, other than this, two more experiments are to be performed depending upon the scope.
ET-316-E Microcontroller and Applications Lab

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<td>DURATION OF EXAM : 3 HRS</td>
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Part – A

1. Copy a byte from TCON to register R2 using at least four different methods.
2. Store the number 8 DH in RAM Locations 30H to 34H.
3. Add the unsigned numbers found in internal RAM locations 25H, 26H and 27H together and put the result in RAM locations 31H (MSB) and 30H (LSB).
4. Write a program to subtract 2 –data bytes indicated by strings. i.e. Subtract a string of 8-bit data indicated by R1 from a string of data indicated by Ro. The number of data is indicated by R2.
5. The number A6H is placed some where in external RAM between locations 0100H and 0200H. Find the address of that location and put that address in R6 (LSB) and R5 (MSB). Find the address of the first two internal RAM locations between 0H and 60H, which contain consecutive numbers. If so, set the carry flag to 1, else clear the flag.
6. W. A. P to find minimum value of date in memory block 9000 to 90FF and store the result in 9100H.
7. W. A. P to arrange the given ten numbers in ascending order.
8. W. A. P to generate BCD up counter and send each count to port A.
9. Multiply the unsigned number in register R3 by the unsigned number on port 2 and put the result in external RAM locations 10H (MSB) & 11H (LSB).

Part - B

1. An assembly language program to find the smaller of two numbers.
2. An assembly language program to find smallest number in an array of ten numbers.
3. An assembly language program to find whether the given number is even or odd.
4. An assembly language program to perform 16-bit division.
5. An assembly language program to input five numbers, calculate their sum & display the result.
6. An assembly language program to display your name on seven segment display.
7. An assembly language program to interface a/d & d/a converters.

NOTE: At least 7 experiments are to be performed from the above list, other than this, two more experiments are to be performed depending upon the scope.