

NORTH MAHARASHTRA UNIVERSITY, JALGAON.

REVISED SYLLABUS  
FOR  
Diploma in Computer Management  
One Year Post- Graduate  
(WITH EFFECT FROM JUNE, 1997)

1. Computer Concepts and Data Processing
2. MIS and System Analysis
3. DOS, LOTUS, and FOXPRO
4. 'C' Programming
5. P.P.M.
6. Project Report and Viva Voce
7. Practicals DOS, LOTUS, FOXPRO, C, WINDOWS (Internal)
8. Eligibility of the candidate : (1) Any graduate of the recognised university or, (2) Any person having passed any diploma of Government Recognised Board with 3 years work experience.

PAPER I : COMPUTER CONCEPTS AND DATA PROCESSING

---

1. Computer, its components and functions : Generation of computers and Historical Growth; Hardware and Software, Mini-Computer, Micro Computers and main-frame Systems.
2. Binary, Octal, BCD, EBCDIC, ASCII, Representation of numeric data (binary, packed decimal, decimal, real)
3. Computer Instructions and Addressing System, Machine Assembly and Higher Level Language, Non procedural Programming Languages.
4. Operating System Memory and I/O Management
5. Files hierarchy of data, sequential, Relative, Direct, Indexed Organization.  
Data processing concepts : Master & transaction file, sorting, interactive - on line processing concepts.
6. Inter program communication ✓  
Machine to Machine communication concepts.  
Networking LAN, WAN concepts  
Distributed data processing concepts.
7. Batch and on-line processing, time sharing, multiprogramming, end user computing.
8. Applications of Computers
  - Business & industry - Applications
  - CAD/CAM
  - Computer Graphics
  - Office Automation
  - Process Control
  - Scientific Applications
  - (Awareness of use)

PAPPER M I.S. II  
-----

- organisational structure and functions.
- Systems approach to organisation
- Dynamics to Decision - Making
- Control / Control by exception / Feedback control
- Law of requisite variety
- Systems approach to MIS design
- Factoring / Boundaries / Coupling
- Decision support systems
- DSS concepts
- Simple models
- Dialogue Manager
- Executive Information Systems
- Information requirement
- Method of access
- Presentation
- Workflow Management
- Concepts
- Task definition
- Client & Server
- Design

SYSTEM ANALYSIS  
-----

1. Systems concept. Integrated systems, sub-systems, modules.
2. Role of systems analysis and others in systems development.
3. Structured Systems analysis
  - \* System Project Selection
  - \* Feasibility Study
  - \* Definition Phase -  
Requirement analysis input, output and processing.
  - \* Implementation Phase -  
Procedure requirements, File Conversion, testing : parallel  
proceduring and documentation.
  - \* Evaluation Phase/Systems audit.
4. Data capture techniques.
5. Input/Output forms designing.
6. Codes designing.
7. Charting techniques :
  - \* Visual trace of contents.
  - \* Data flow diagrams.
  - \* Entity - Relationship diagrams.
  - \* Grid charts etc.
  - \* System flow charts, system run charts.
  - \* Procedure charts.

1. Decision tables.
2. Validation of data and controls to achieve quality of data and processing.
3. Reliability of system, Conversion of systems : Programs and data.
4. Introduction to Computer Aided Software Engineering :
  - \* Data Dictionaries
  - \* Prototyping
5. Programming for data processing : common types of programs Entry, Validation, Updation, Report etc. Master and Transaction files, Modification.
6. Data Analysis, Normalization. Concept of hierarchical, Network, Relational Data bases Concepts of relation built into Data bases against into programs.
7. Batch and on-line processing time sharing, real time multi programming, distributed processing.

#### APPENDIX 3. DOS, LOTUS AND FOXPRO

1. DOS.

-----

Introduction, DIR, File Create, Delete,

1.2.2.

-----

#### 1. Introduction :

Getting started with Lotus worksheet entering simple text and manipulate with simple worksheet commands. File save, Retrieve, options.

#### 2. Worksheet commands :

Insert, Delete, Global, Range, Status, File, Window, copy, Move

#### 3. Worksheet functions and utilities :

Mathematical functions, Statistical functions.

#### 4. Data Commands :

Distribution, File, Matrix, Parse, Query, Regression, Sort, Tables.

#### 5. Print commands :

File, Printer and detail options.

#### 6. Setup commands :

Types, Names, View, Options, Print, Utility.

#### 7. Macros.

#### 8. Introduction to CAD.

: FOXPRO

---

A. USING FOXPRO 2.5 UNDER DOS (USAGE LEVEL)

1. What is a database ?
2. Simple and Relational Databases
3. Limitations of DBase III Plus
4. Advantages of using FOXPRO
5. Introduction to FOXPRO menu structure
6. Introduction to FOXPRO dialog boxes.
7. Using FOXPRO Command Window
8. Creating a database structure.
  - (a) Defining structures of a database file
  - (b) Entering field names.
  - (c) Saving database file.
  - (d) Copying and modifying structures of database files.
9. Adding Editing and Viewing Data
  - (a) Appending data
  - (b) Changing or Editing data
  - (c) Resizing or Changing the order of fields
  - (d) Partitioning the Window
  - (e) deleting a record
  - (f) Moving the record pointer.
10. Understanding Indexes and Expressions
  - (a) Types of Indexes (Single, Compound, Structural compound, Compact)
  - (b) Overview of Index Dialog Box
  - (c) Indexing commands
  - (d) Understanding Expressions
  - (e) Selecting and Controlling Index Files.
11. Generating Reports
  - (a) Designing the report form.
  - (b) Page Layout
  - (c) Page Preview
  - (d) Layout Tools
  - (e) Title/summary
  - (f) Data Grouping
  - (g) Variables.

PAPER IV : 'C' PROGRAMMING

---

1. C Fundamentals :  
C Character Set, Identifiers and Keywords, under ANSI C. Data Types Constants int., float, double, char. Qualifiers : long, short, unsigned and signed, Escape sequences (like \n, \b etc). Arithmetic Expressions and different Operators. Preprocessor directives (like #include, #define), Symbolic constants, Comments, sizeof, cast (2)
2. Loop Control Structure :  
The for statement, Nested for Loop : for loop variants, the while statement, Increment/decrement operators, Use of break and continue, the do-while loop. (6)

3. Decision and Case Control Structure : (6)  
 If statement, if-else construct, use of logical operators and Compound Relational tests, Nested if statements. The else if construct, the relational operators, the conditional expression (ternary) operator. The switch Statement with or without break.
4. Arrays:  
 Declaration, Referring individual elements, Entering data into an array, reading data from an array. Array initialisation, Bounds checking, Passing array elements to a function, Passing Array to a function. (6)
5. Storage Classes:  
 Automatic, Register, Static (local and global), External, Scope.
6. Functions :  
 Arguments and local variables, Returning Function Results, Default Return type and the type void, Passing values between functions. Declaration of function type, Recursion. Functions with variable arguments. (6)
7. Character Strings :  
 what are strings, standard library string functions, strlen ( ), strcat ( ), strcpy ( ), strcmp ( ). (2)
8. Pointers : Introduction to Pointers, Pointers and Structures, Pointers and Functions, Pointers, and Arrays, Operation on pointers, Pointers to functions. Two Dimension Arrays and Pointer. (6)
9. structures : (4)  
 Declaring Structure, Initializing structures, structure variables, accessing structure elements, Arrays of Structures. Functions and Structures. Structures within structures, Structures containing arrays. Predefined structures such as FILE.
10. Input/Output in C :  
 Console I/O functions, printf ( ), scanf ( ), getch ( ), getchar ( ), putchar ( ), gets ( ), puts ( ).  
 Disk I/O Functions. High level file I/O or standard functions fopen ( ), fputs ( ), fclose ( ), fgetc ( ), fputc ( ), fread ( ), fwrite ( ), fseek ( ), feof ( ), fflush ( ). Use of above file handling functions for standard devices like stdin, stdout, stderr and stderr. (6)
11. Dynamic Memory Allocation and memory functions :  
 memcpy ( ), memset ( ), calloc ( ), malloc ( ), free ( ), realloc ( ). (4)
12. Other features and Miscellaneous functions :  
 enumerated data types, typedef, atof ( ), atoi ( ), atol ( ), toupper ( ), tolower ( ), isalnum ( ), isalpha ( ), isdigit ( ), exit ( ). Use of command line arguments. (3)
13. C Preprocessor :  
 Macro expansion, Macros with arguments, File inclusion. (1)

#### 14. Single-user Btrieve :

Concept of Btrieve record manager, Usage of btrieve. exe, butil. exe, turcbtry. c, Butil description file, status code and messages, Btrieve function call BTRV and its usage, Btrieve record operations in C language for open, close, insert, update, delete, get equal, get next, get previous get greater get greater or equal, get less than, get less than or equal, get first, get last. (6)

#### V. PRINCIPLES AND PRACTICE OF MANAGEMENT

---

1. Following topics should be include in additions to those prescribed earlier.

Introduction : Rôle and importance of Management in modern Society.

- Management as a social system.
- Approaches to management
- Development of management thought

Process of Management : Planning-Organising-Staffing-Directing.

2. The above suggested topic should appear as Part I of the Paper Principles of management. The remaining portion should appear as