

B Sc computer sc. 2011-12

I Semester Paper-1 (101)

DIGITAL COMPUTER FUNDAMENTALS and PROGRAMMING IN 'C'

Unit - I

Number system and Information codes : Binary, Octal & Hexadecimal number systems. Conversion from one system to another. Computer arithmetic : Various operations – addition, subtraction, Computer Codes – ASCII, BCD, and Gray codes. 1's & 2's complements, Boolean algebra and gate network – Fundamental Concept of Boolean algebra, logical addition and logical multiplication, AND gates, OR gates, NOT gate, EX-OR gates, evaluation of logical expressions, De-Morgan's theorem, the principle of duality, Interconnection gates, Truth Table, NAND gates and NOR gates,

Unit - II

Logical design of Flip-Flops, RS Flip Flop, Clocks, J-K flip flop, Master slave flip-flop. The memory element – Primary Storage – Memory Registers, RAM, SRAM, DRAM, ROM, PROM, EPROM, EEPROM, Cache memory, Secondary storage devices- Magnetic tape, Floppy Disk, Hard Disk, CD-ROM, Half-adder and Full adder, Decoders, and Registers

Unit - III

An overview of Programming. History of 'C', Importance of 'C', Program Concept, Problem identification, problem Analysis, program coding, Debugging, Logic representation tools: Flowchart, 'C' Tokens, Character set, Keywords, identifiers, Data types, constant, variables, Rules for variable declaration. Operators, Basic structure of 'C' program.

Unit-IV

Input/Output statements, printf(), scanf(), formatted input and output, Decision Making Statements- if, if-else, nesting if-else, else if ladder, switch statement, goto statement, Looping: what is looping, while statement, do-while statement, for statement.

Unit-V

Arrays, Single dimensional, Multi dimensional array, Functions, Category of functions, Recursion, String functions, character functions, Mathematical functions, Structure, Unions & Pointers.

Books Recommended :

- 1- Computer Fundamentals- B.Ram
- 2- Computer Fundamentals- P.K. Sinha
- 3- Programming in 'C'- E. Balagurusamy
- 4- Programming in 'C'- Gottfried.
- 5- Programming in 'C'- Arun Pandey and Nitin K. Naik (Kamal Prakashan)
- 6- The 'C' Programming Language- B.W. Kernigham & D. M. Ritchie.

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20.7.2011

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B.S.C. computer sc. 4th 2011-12

II Semester Paper 1- (201)

INTRODUCTION TO IT and DBMS with Foxpro

Unit 1:

What is IT, History of Computer System Generations of Computer, Range of Application-Scientific, Commercial, Educational, Industrial, Programming languages: Machine, Assembly, Higher level languages, Fourth Generation languages, Assembler, Compiler, Interpreter Hardware: Input, Output devices, Types of Software- System Software, Application Software.

Unit 2: Introduction to data communication Introduction to Digital to Analog Communication, Parallel and serial communication, Synchronous and Asynchronous Communication Simplex, Half Duplex and Full Duplex Communication, Commercial channels Wired Transmission, Optical Fiber Transmission, Microwave Transmission Satellite Transmission. Single user and Multi user system, Client server system, Distributed Processing System. Network LAN, WAN, Internet concept. WWW.Browsers, Electronic Mail.

Unit 3:

Data Base Basics: What is DBMS, Facilities of DBMS, , advantages & disadvantage of a DBMS, Schema, Sub-Schema DBA, DBM, Data Independence, Data modeling for a database, Database languages- DDL, DML, the three level architecture for a DBMS. Classification of DBMS Users. Structure of a DBMS. Entity, Attributes, Types of attributes, Mapping Constraints, Data Base Models: Introduction to Entity relationship model, the relational data model the Network data model the Hierarchical model,

Unit 4:

File Organization-Introduction, serial files, sequential files; Index sequential files, Direct files Normalization & SQL Introduction, Functional dependency, Anomalies in a database, Properties of Normalization, 1 NF, 2NF, 3NF. Categories of SQL. commands, Data definition. Data manipulation statements, views etc. Recovery, security, Introduction to RDBMS, FoxPro: Introduction to FoxPro, viewing and editing data, Modify structure, Memo fields & file utilities, sorting and Indexing database files, memory variables, date & time function ..

Unit 5

Mathematical commands & function, Printing reports and labels, Programming with FoxPro, Error conditions & program debugging aids, multiple database files, the @ commands, windows menus & Popups, advanced features of foxpro.

Books Recommended :

- 1- Information Technology TODAY " by S. JAISWAL. Galgotia Publication.
- 2- Computer Today - by Suresh Ku Basandra
- 3- Basics of Information Technology- Nitin K. Naik (Kamal Prakashan)
- 4- An Introduction to database system -Bipin C. Desai, Galgotia
- 5- Database System Concept- Korth
- 6- Foxpro 2.5 made simple for DOS windows -R.K. Taxali, BPB Publication, New Delhi.

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20-7-2011

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20-7-11