

**UNIVERSITY CENTRE FOR DISTANCE LEARNING (CDLU) SIRSA**

**PGDCA/MCA-1<sup>st</sup>/MSc-1<sup>st</sup>**

**Problem Solving Through C**

**Assignment -1**

**Attempt any five questions. All questions carry equal marks.**

**Max Marks: 15**

1. Discuss problem solving techniques.
2. What is structured programming? Explain.
3. Write an algorithm for bubble sort technique.
4. Explain the standard library string functions.
5. Explain the various operators used in C.
6. What are control statements? Explain with examples.
7. What is a function? Discuss the parameter passing mechanisms.
8. State the differences between structure and union.
9. Explain the data types supported by C.
10. Write a program for Quick sort.

**Assignment -2**

**Attempt any five questions. All questions carry equal marks.**

**Max Marks: 15**

- Q1. Discuss advantages of top down and bottom up programming with example
- Q2. Differentiate: i) gets () and puts ()                      ii) getch() and getche ()
- Q3. What is recursive function? Explain.
- Q4. Discuss the operator hierarchy and their associativity.
- Q5. Describe the use of Goto, Continue and Break statements.
- Q6. Write a program for binary search.
- Q7. Differentiate between Linear search and Binary search.
- Q8. State the difference between pointer to arrays and array to pointers with example.
- Q9. Explain the type of errors in C language.
- Q10. Discuss the formatted and unformatted I/O statements.

**PGDCA/MCA-1st/Msc-1st**

**Database Systems**

**Assignment-1**

**Attempt any five questions. All questions carry equal marks.**

**Max Marks: 15**

1. What are advantages and disadvantages of DBMS?
2. Explain the various data model.
3. Discuss: i) role and structural constraints ii) data independence
4. Explain: i) integrity constraints ii) relational algebra operations
5. Which recovery techniques are used in centralized DBMS?
6. State the various database security issues.
7. Differentiate relational algebra from relational calculus.
8. Explain Timestamp Ordering.
9. Compare 3NF with BCNF with the help of example.
- 10 Explain the various techniques used for concurrency control.

**ASSIGNMENT-2**

**Attempt any five questions. All questions carry equal marks.**

**Max Marks: 15**

1. Explain the role of various database users.
2. Explain the architecture of DBMS with its components.
3. What are the various data base languages and interfaces?
4. What is normalization and what is need of normalization?
5. i) view in SQL ii) indexes in SQL
6. Explain network and hierarchical data model.
7. Explain: i) types of FDs ii) Armstrong's axioms
8. Explain recovery process in database management.
9. What are security issues for database?
10. Explain the various types of locks used in DBMS.

**PGDCA/MCA-1<sup>st</sup>/MSc-1<sup>st</sup>**  
**COMPUTER ORGANISATION**

**Assignment – 1**

**Attempt any five questions. All questions carry equal marks.**

**Max Marks: 15**

1. a) Hexadecimal conversion of  $(430.25)_8$  gives.....  
b) Booth multiplication
2. Explain the universal gates.
3. What is a self-Complimenting code? Explain with example.
4. Discuss the working of encoders and decoders.
5. SOP form of the expression  $(P+Q'+R')$   $(P+Q+R)$   $(P+Q+R')$  is.....
6. What are the differences between synchronous and asynchronous counters?
7. Explain instruction cycle with the help of flow chart.
8. What is the difference between hardwired and micro program control?
9. What are the different types of addressing modes available?
10. Write short notes on: (a) Interrupt cycle (b) IOP

**Assignment – 2**

**Attempt any five questions. All questions carry equal marks.**

**Max Marks: 15**

1. a) Convert  $(101010)_2$  to gray code  
b) Error detection and correction
2. Explain the fixed and floating point representation of numbers.
3. What is combinational circuit? Explain full adder.
4. State the differences between static and dynamic memory.
5. How the information transfer takes place between CPU/Memory and I/O devices?
6. Explain the working of JK Flip-Flop.
7. Design 32:1 MUX using 16:1 MUX.
8. Explain the micro program sequencer.
9. What is an instruction format? Explain.
10. Write short notes on: - (a) Encoders (b) Shift Registers

**PGDCA/MCA-1<sup>st</sup>/MSc-1<sup>st</sup>**

**System Analysis and Design**

**Assignment-I**

**Attempt any five questions. All questions carry equal marks.**

**Max Marks: 15**

1. What is a System? Discuss various elements and types of system.
2. Which automatic tools are used for system development?
3. Explain various approaches for information gathering.
4. What is Feasibility study? Discuss various types of feasibilities.
5. What is Process Modeling? How can DFDs be used as a system analysis tool?
6. What do you mean by system design? Discuss the designing of forms and reports.
7. What do you mean by testing? Discuss various testing plans.
8. What do you mean by maintenance of a system? Explain the different types of maintenance.

**Assignment-II**

**Attempt any five questions. All questions carry equal marks.**

**Max Marks: 15**

1. What is Software Development Life Cycle? Discuss its various phases.
2. Explain Data Flow diagrams and Data dictionary with example.
3. (a). Discuss the role of system analyst.  
(b). What do you mean by modeling? Discuss the conceptual data modeling.
4. Discuss implementation of a system in detail.
5. Discuss the following:  
(a). Interface and dialogues design.  
(b). Output file design.
6. What do you mean by requirement determination and specification? Discuss in detail.
7. Discuss the following:  
(a). Cost of maintenance.  
(b). Data Dictionary and Structured English.
8. Discuss the concept of MIS and DSS? How they are related and how do they differ?

# **PGDCA/MCA-1<sup>st</sup>/MSc-1<sup>st</sup>**

## **COMPUTER FUNDAMENTAL**

### **Assignment-1**

**Attempt any five questions. All questions carry equal marks.**

**Max Marks: 15**

- Q1. Discuss components of computer using the block diagram.
- Q2. Illustrate the differences between compiler and interpreter.
- Q3. What do you mean by logic gates? Define AND, OR and NOT gates.
- Q4. Implement half adder and full adder using NAND gate.
- Q5. Which flip flop avoids race around condition? Explain.
- Q6. Explain the memory hierarchy of computer.
- Q7. Discuss I/O techniques and their characteristics in detail.
- Q8. What is an opcode? Explain the instruction format.
- Q9. What do you mean by an addressing mode? Explain the types.
- Q10. What do you mean by register? Describe different types of registers used in computer.

### **Assignment-2**

**Attempt any five questions. All questions carry equal marks.**

**Max Marks: 15**

- Q1. How can we represent fixed and floating point numbers in the computer system?
- Q2. How many types of interrupts are there in the computer system? Explain.
- Q3. Discuss the universal gates.
- Q4. Describe half subtractor and full subtractor using the NAND gate.
- Q5. Explain the working of 'D' and 'T' flip flops.
- Q6. Explain the concept of high speed memory with various organization schemes.
- Q7. Define the following: (i) LCD (ii) video cards (iii) CD-ROM
- Q8. Discuss Instruction set and instruction format.
- Q9. Explain the DMA.
- Q10. Explain different types of addressing modes.