

**Assignment for
Even Semester of
PGDCA/M.Sc. Computer Science
(Through Distance Education)**



**For session 2016-2017
Directorate of Distance Education
Guru Jambheshwar University of
Science & Technology, Hissar**

GURU JAMBHESHWAR UNIVERSITY OF SCIENCE & TECHNOLOGY, HISAR

DIRECTORATE OF DISTANCE EDUCATION

Programme: PGDCA/ MSC(CS)/ MCA

Course: Data Structure & Algorithms

Sem.: 2nd

Code: MS-06

Total Marks=15

Important Instructions

- (i) Attempt all questions from the assignment given below.**
- (ii) All questions are to be attempted in legible handwriting on plane white A-4 size paper is to be submitted to the Directorate of Distance Education for evaluation either in person or through Speed Post.**

ASSIGNMENT-I

(3+2)

1. (a) How are two dimensional arrays represented in memory? Explain with examples.
(b) What are deque? Explain its types. **(5)**
2. Write an algorithm/function to delete a node from a singly linked list whose information part has value 'x' **(5)**
3. Assume we have sorted array of elements in descending order. Can binary search algorithm still be implemented on it? If yes, write the modified algorithm. If not, justify. **(5)**

**Prepared By: Jyoti
Assistant Professor
GJUST, Hisar**

**GURU JAMBHESHWAR UNIVERSITY OF SCIENCE & TECHNOLOGY, HISAR
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ASSIGNMENT-II

(3+2)

1. (a) Translate the following infix expression into its equivalent postfix notation and also evaluate it:

$$15 + (2 * 9 - (6 / 3 \uparrow 3) * 1) * 2$$

- (b) Find the number of comparisons to sort the following array X of letters using quick sort:

X = A B C D E

What conclusion can one make out of above sorting regarding its complexity analysis?

(3+2)

2. (a) Show the result of inserting 3, 1, 4, 6, 9, 2, 5, 7 into an initially empty binary search tree. Show the result of deleting the root from the above tree.

- (b) Define graph? How is it represented in memory?

(5)

3. What is Hashing? Discuss and explain in details

**Prepared By: Jyoti
Assistant Professor
GJUST, Hisar**

Programme: PDGDCA
Course: Computer Organization and Architecture

SEM: 2nd
Code: MS-07
Max Marks: 3*5=15

ASSIGNMENT (PART-I)

1. Differentiate between computer architecture and computer organization?
2. What do you mean by interrupts? Explain how interrupts are handled when they occur while an instruction is being executed?
3. Write a short note on following:
 - a) ALU
 - b) Arithmetic
 - c) Logical
 - d) Shift
4. Differentiate between Synchronous and Asynchronous Data Transfer? Explain the concept of programmed, interrupt and DMA methods of data transfer techniques?
5. What do you understand by fetch cycle, instruction cycle and machine cycle?

ASSIGNMENT (PART-II)

Max Marks: 3*5=15

1. Explain main memory and cache memory? Explain the concept of stack organization?
2. How many memory chips of 128*8 are needed to provide memory capacity of 4096*16?
3. Explain the concept of DMA? Write a short note about DMA transfer? Also Explain block diagram of DMA controller?
4. Write short note on:
 - a) Interrupt Cycle
 - b) Interrupt acknowledgment
5. Explain different addressing modes with the help of example?

Prepared By: Narender
Assistant Professor
GJUST, Hisar

**GURU JAMBHESHWAR UNIVERSITY OF SCIENCE & TECHNOLOGY, HISAR
DIRECTORATE OF DISTANCE EDUCATION**

Programme: PGDCA/MCA

Course: Operating System

Semester: 2nd

Code: MS-08

Total Marks=15

Important Instructions

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ASSIGNMENT-I

- Q1. What do you mean by Process Scheduler? Shown below is the workload for 5 jobs arriving at time zero in the order given below:**

<i>Jobs</i>	<i>Routine</i>
1	10
2	29
3	3
4	7
5	12

Now considering FCFS, SJF and Round-Robin RR [quantum= 10] algorithms for this set of jobs and find out which algorithm would give the minimum average time and turn-around time. **7**

- Q2. What is segmentation? Discuss its advantages and disadvantages. **4****
- Q3. Explain various Disk scheduling algorithms. **4****

By: Abhishek Kajal
Asst. Professor
Deptt. of CSE
GJUS&T, Hisar

**GURU JAMBHESHWAR UNIVERSITY OF SCIENCE & TECHNOLOGY, HISAR
DIRECTORATE OF DISTANCE EDUCATION**

Programme: PGDCA/MCA

Course: Operating System

Semester: 2nd

Code: MS-08

Total Marks=15

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ASSIGNMENT-II

- Q1. Describe the concept of memory management with and without swapping of pages. Also briefly discuss the concept of Demand Paging. **5**
- Q2. How is Deadlock characterized? Explain the term detection, recovery and prevention in context of deadlock. Explain one method for deadlock avoidance. **5**
- Q3. What is Mutual Exclusion? **2**
- Q4. What is an Operating System? Differentiate between Multitasking and Multiprogramming. **3**

By: Abhishek Kajal

Asst. Professor

Deptt. of CSE

GJUS&T, Hisar

Programme: PDGDCA
Course: Business Data Processing

SEM: 2nd
Code: MS-09
Max Marks: 3*5=15

ASSIGNMENT (PART-I)

1. Explain Data processing with any example?
2. How records and files are managed explain with example?
3. Explain business files and its types?
4. Explain the terms:
 - a) File generation
 - b) Back up
5. Explain different file recovery procedures?

ASSIGNMENT (PART-II)

Max Marks: 3*5=15

1. What do you mean by reserved words in COBOL? Give examples?
2. Explain EXIT statement with example?
3. Explain LABEL clause and LINAGE clause?
4. Explain following statements with examples :
 - a) MOVE
 - b) MULTIPLY
5. Give example of GO TO and IF statements?

By: Rajiv
Asst. Professor
Deptt. of HSB
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**GURU JAMBHESHWAR UNIVERSITY OF SCIENCE & TECHNOLOGY, HISAR
DIRECTORATE OF DISTANCE EDUCATION**

Programme: PGDCA/MCA/MSC (CS)

Course: Computer Networks

Sem.:1st

Code: MS-16

Total Marks=15

Important Instructions

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ASSIGNMENT-I

- | | | |
|-----|--|---|
| Q1. | Draw OSI reference model and explain the function of different layers. | 6 |
| Q2. | Write short note on X.25 protocols? | 3 |
| Q3. | Explain the term TDMA and what are the characteristics of TDMA? | 6 |

**Prepared By: Manoj
Assistant Professor
Deptt.of CSE
GJUS&T, Hisar**

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Programme: PGDCA/MCA/MSC (CS)

Course: Computer Networks

Sem.:1st

Code: MS-16

Total Marks=15

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ASSIGNMENT-II

- | | | |
|-----|--|---|
| Q1. | What is the difference between half-duplex and full-duplex transmission modes? | 3 |
| Q2. | Define carrier signal and explain its role in analog transmission. | 4 |
| Q3. | What is Routing? | 3 |
| Q4. | Draw TCP/IP reference model and explain the function of different layers. | 5 |

**Prepared By: Manoj
Assistant Professor
Deptt.of CSE
GJUS&T, Hisar**

Programme: M.Sc. (Computer Science)
Course: C++ (OOPS)

SEM: 4th
Code: MS-17
Max Marks: 3*5=15

ASSIGNMENT (PART-I)

1. Differentiate the concept between object oriented approach and procedural oriented approach in programming?
2. Write down a program to explain the concept of classes and object? How do objects interact with each other and with the external interfaces? Describe with the help of a diagram.
3. Is it necessary to pass argument in a friend function? Justify your answer with example?
4. What is Dynamism? Describe dynamic binding for object-oriented design with the help of an example.
5. Write a program to overload the + operator to concatenate two strings.

ASSIGNMENT (PART-II)

Max Marks: 3*5=15

1. Write short note on:
 - a) Fstream objects
 - b) Size of operator
 - c) Bitwise operators
2. What are templates? Create a function template for a stack.
3. Why abstract classes needed? Explain with the help of example?
4. What are Macros and why are they needed? Design a macro to find the cube of a variable.
5. What is Inheritance? What are the different visibility modes observed while deriving a class from a base class?

Prepared By: Vinod Goyal
Assistant Professor
Deptt.of DDE
GJUS&T, Hisar

Programme: M.Sc. (Computer Science)
Course: Internet and Web Programming

SEM: 4th
Code: MS-18
Max Marks: 3*5=15

ASSIGNMENT (PART-I)

1. Explain the advantages of Blogging. What is web-browser ?
2. Explain the features of Java-enabled web-browsers. ?
3. What is hypertext ? Explain any two applications of hypertext?
4. Write the procedure for publishing a website? Explain the basic components of personal web pages?
5. What is a Form ? Explain any four field types in a Form.?

ASSIGNMENT (PART-II)

Max Marks: 3*5=15

1. Write short notes on the following :
 - a) Document Object Model
 - b) Authoring Tools
 - c) IP Address
2. Difference between Client side script and server side script?
3. What is the meaning of home page of a website? Explain any two features of a home page?
4. Explain virtual machine in JAVA? Give examples of JAVA Tokens?
5. Java is object oriented language? Explain this statement with its features?

Prepared By: Narender
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**GURU JAMBHESHWAR UNIVERSITY OF SCIENCE & TECHNOLOGY, HISAR
DIRECTORATE OF DISTANCE EDUCATION**

**Programme: MSc
Methods Sem.: 4th**

**Course: Computer Based Optimization
Code: MS-19
Total Marks=15**

Important Instructions

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ASSIGNMENT-I

- Q 1. Discuss the ways to identifying the following situations while
- (a) Solving L.P"P.
 - (b) Infeasible Problem
 - (c) Unbounded Problem
 - (d) Multiple Optima
 - (e) Redundant constraints
 - (f) Degenerate Problem. 4
- Q 2. Write a note on Software for linear programming. 3
- Q 3. Discuss Network problems and shortest path in network. 4
- Q 4. Taxis are waiting in a queue for passengers to come. Passengers for those taxis arrive according to a Poisson process with an average of 60 passengers per hour. A taxi departs as soon as two passengers have been collected or 3 minutes have expired since the first passenger has got in the taxi. Suppose you get in the taxi as first passenger. What is your average waiting time for the departure? 4

**Prepared By: Sunil Verma
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**Programme: MSc
Methods Sem.: 4th**

**Course: Computer Based Optimization
Code: MS-19 Total Marks=15**

Important Instructions

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ASSIGNMENT (PART-II)

Max Marks: 5*3=15

1. Illustrate graphically the unbounded problem of linear programming problem?
2. Write down various phases in solving an OR problem.
3. Explain Minimum matrix method for finding an initial basic feasible solution for a transportation problem?

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