DMSIT01

ASSIGNMENT 1

M.Sc. (IT) DEGREE EXAMINATION, MAY/JUNE- 2025

First Year

BASICS OF IT

MAXIMUM MARKS :30

ANSWER ALL QUESTIONS

Q1) What are the capabilities expected of information system? Explain.

Q2) State and explain about working of different input and output technologies.

Q3) Explain about different system software and application software's.

Q4) Discuss about network processing strategies in detail.

Q5) Explain evaluation of internet and also describe various internet services.

Q6) Describe business pressure in today's information age.

Q7) How does the intranet - based system support the human resources management function at Hershey?

Q8) Explain the working principle of RAM and ROM.

Q9) Describe about file accessing methods.

Q10) Explain about ring and tree network topologies.

DMSIT01

ASSIGNMENT 2

M.Sc. (IT) DEGREE EXAMINATION, MAY/JUNE- 2025

First Year

BASICS OF IT

MAXIMUM MARKS :30

ANSWER ALL QUESTIONS

Q1) Write about structured and procedure oriented programming.

Q2) Write about client/server and peer - to - peer computing.

Q3) Describe various internet challenges.

Q4) What is Arithmetic Logic Unit?

Q5) Define relational schema.

Q6) Define operating systems.

Q7) What is router?

Q8) What is extranet?

Q9) Write about the IT support at different organizational levels.

(DMSIT02)

ASSIGNMENT-1

M.Sc. DEGREE EXAMINATION, MAY/JUNE -2025

First Year

Information Technology

COMPUTER NETWORKS
MAXIMUM MARKS :30
ANSWER ALL QUESTIONS

1. Explain about frequency division, wave division and time division multiplexing in detail.

2. Explain functions of Media Access Control sub layer and also differentiate pure ALOHA and slotted ALOHA.

3. Explain about packet switching and circuit switching.

4. Explain Distance Vector routing and shortest path routing algorithms with example.

5. Explain about web security and email security.

6. Explain frequency division multiplexing with neat sketch.

7. What are the factors entered into selection of network topologies?

8. Briefly explain about sliding window protocol.

9. What is name resolution? Explain in brief.

(DMSIT02)

ASSIGNMENT-2

M.Sc. DEGREE EXAMINATION, MAY/JUNE -2025

First Year

Information Technology

COMPUTER NETWORKS
MAXIMUM MARKS :30
ANSWER ALL QUESTIONS

1. What is bridge? Write short notes on bridges.

2. Write about IPv4 and subnets.

3. Write short notes on multicast routing.

4. Describe different network threats.

5. Define circuit mode access.

6. What is congestion control?

7. What is switch?

8. Define hierarchical routing.

9. Define firewall.

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(DMSIT03)

ASSIGNMENT-1

M.Sc. DEGREE EXAMINATION, MAY/JUNE -2025

First Year

Information Technology

COMPUTER ORGANISATION
MAXIMUM MARKS :30
ANSWER ALL QUESTIONS

1. Explain about Structure of the lAS Computer.
2. Explain about bus inter connection scheme and multiple bus hierarchies.
3. Explain about the Disk Performance Parameters.
4. Explain Booth Multiplication algorithm with suitable example.
5. With suitable example explain about Microprocessor Register Organizations
6. Explain about the Top–Level Structure of Computer.
7. Explain about the Amdahl's Law.
8. Explain about the working optical disk.
9. Describe division algorithm for floating point.

ASSIGNMENT-2

M.Sc. DEGREE EXAMINATION, MAY/JUNE -2025

First Year

Information Technology

COMPUTER ORGANISATION
MAXIMUM MARKS :30
ANSWER ALL QUESTIONS

1. How is redundancy achieved in a RAID system?

2. Explain about Magnetic Tape.

3. Draw and explain basic computer instruction formats

4. List down processor modes of ARM processor.

5. What is a stored program computer?

6. Define the terms seek time, rotational delay, access time and transfer time.

7. What is a program status word?

8. What is asynchronous serial transfer?

9. Explain about instruction prefetch.

(DMSIT04)

ASSIGNMENT-1

M.Sc. DEGREE EXAMINATION, MAY/JUNE -2025

First Year

Information Technology

DATA STRUCTURE WITH C
MAXIMUM MARKS :30
ANSWER ALL QUESTIONS

1. What is an algorithm? Explain various components of algorithm? Write an algorithm to largest elements of given set of elements.

2. What is an array? Write different types of arrays and their memory representation? Write a program to addition of two matrices.

3. Write an algorithm for the following in single linked list.

   (a) Delete a node with specified value from the list.

   (b) Reverse the links of the list i.e. the first node becomes last node.

4. (a) With the help of diagrams construct a Binary Search Tree (BST) with the following keys: 85, 22, 42, 63, 38, 57, 74, 6, 49, 71. Also delete 42 from the constructed BST.

   (b) Write a subroutine to search an element in a Binary Search Tree.

5. Write and explain the trace of selection sort on following data:

   42, 23, 74, 11, 65, 58, 94, 36, 99, 87

6. Write an algorithm to find largest of list of elements.

7. Explain about Big O notation and Theta notation θ of an algorithm.

8. Give any four string handling functions with syntax.

9. Evaluate the following postfix expression using stack:

   5 6 2 + * 1 2 4 /- +

ASSIGNMENT-2

M.Sc. DEGREE EXAMINATION, MAY/JUNE -2025

First Year

Information Technology

DATA STRUCTURE WITH C
MAXIMUM MARKS :30
ANSWER ALL QUESTIONS

10. Explain about the rotations in AVL tree.

11. Explain Threaded binary trees with suitable examples.

12. Construct a binary search tree for the following and perform in – order and post– order traversals
5 9 4 8 2 1 3 7 6

13. Write a subroutine to binary search

14. What is pointer?

15. Define recursion.

16. Define circular queue

17. Define in - order and post – order of tree.

18. Define space complexity

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(DMSIT05)

ASSIGNMENT-1

M.Sc. DEGREE EXAMINATION, MAY/JUNE -2025

First Year

Information Technology

OPERATING SYSTEMS
MAXIMUM MARKS :30
ANSWER ALL QUESTIONS

1. (a) What is a process? Explain about various attributes of process control Block.
   (b) Explain various process states with neat sketch.
2. Solve the following problem by using following scheduling algorithms

Process	Burst Time	Priority
P1	10	3
P2	1	1
P3	2	3
P4	1	4
P5	5	2

   (a) FCFS
   (b) SJF
   (c) Round Robin

3. (a) What is a page fault? Explain the steps involved in handling a page fault with a neat sketch.

   (b) Consider the following page reference string: 1, 2, 3, 4, 2, 1, 5, 6, 2, 1, 2, 3, 7, 6, 3, 2, 1, 2, 3, 6. How many page faults would occur for the optimal page replacement algorithm? Assuming three frames and all frames are initially empty.

4. Explain three major methods of allocating disk space.

5. Discuss various issues in organization of devices by the operating systems.

6. What structure of operating system?

7. Explain the Round Robin scheduling algorithm with a suitable example.

8. Describe various process attributes.

9. What is demand paging and what is its use?

ASSIGNMENT-2

M.Sc. DEGREE EXAMINATION, MAY/JUNE -2025

First Year

Information Technology

OPERATING SYSTEMS
MAXIMUM MARKS :30
ANSWER ALL QUESTIONS

1. State and describe causes of deadlocks.

2. What is virtual memory? Discuss the benefits of virtual memory technique.

3. Write about the kernel I/O subsystem.

4. State different categories of threats.

5. What is the use of fork and exec system calls?

6. Define throughput.

7. Define Semaphore.

8. Define page fault.

9. Define segmentation.

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DMSIT06

ASSIGNMENT 1

M.Sc. DEGREE EXAMINATION, MAY/JUNE- 2025.

(First Year)

INFORMATION TECHNOLOGY

DBMS (Database Management System)

MAXIMUM MARKS :30

ANSWER ALL QUESTIONS

Q1) What are the components of information system? Discuss classifications of information system.

Q2) Illustrate different types of data models with suitable example.

Q3) What are the various steps to consider to database design? Explain.

Q4) What is Integrated Database Management Systems? Describe its DDL and DML commands.

Q5) Discuss different security mechanisms and database recovery.

Q6) Write about indexed sequential file organization.

Q7) Explain one–to–one and many–to–one association between files with example.

Q8) Write about ring and inverted list data structures.

Q9) Describe Entity – Relationship data model with example.

Q10) State and explain about different types of pointers.

DMSIT06

ASSIGNMENT 2

M.Sc. DEGREE EXAMINATION, MAY/JUNE- 2025.

(First Year)

INFORMATION TECHNOLOGY

DBMS (Database Management System)

MAXIMUM MARKS :30

ANSWER ALL QUESTIONS

Q1) What are the guidelines for mapping conceptual data model into relational data model?

Q2) Write about PC – FOCUS database description.

Q3) State relational algebra and relational calculus commands with syntax.

Q4) Define Decision Support System.

Q5) What is significance of meta data?

Q6) Define normalization.

Q7) What is conceptual data model?

Q8) Define concurrency?