(DMSIT 01)

M.Sc. DEGREE EXAMINATION, DECEMBER 2019.

First Year

Information Technology

BASICS OF IT

Time : Three hours Maximum : 70 marks

SECTION A — (3 × 15 = 45 marks)

Answer any THREE questions.

1. Explain about five representative business models of the digital age and three types of business pressures.

2. Discuss various classification of memory devices.

3. Explain about evaluation of programming languages.

4. Explain the features of LAN, WAN and MAN.

5. Write about evaluation of internet and operation of internet.

SECTION B — (5 × 4 = 20 marks)

Answer any FIVE questions.

6. What are the components of computer based information system?

7. Write about Porter's five forces Model.

8. List down various input technologies.

9. Explain about ring and Mesh topologies.

10. State various logical data models.

11. What is file system? What are the advantages and disadvantages of it.

12. Write about various data transmission devices.

13. Write short notes internet and intranet

SECTION C — (5 × 1 = 5 marks)

Answer ALL questions.

14. What is meant by business pressure?

15. What are system software?

16. What is joystick and track ball?

17. What is WWW?

18. What is data warehouse?

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(DMSIT 02)

M.Sc. DEGREE EXAMINATION,
DECEMBER 2019.
First Year
Information Technology

COMPUTER NETWORKS

Time : Three hours Maximum : 70 marks

SECTION — A

Answer any THREE questions.

(3 × 15 = 45)

1. What is multiplexing? Explain different categories of multiplexing.

2. Explain about centralized and distributed access techniques in detail.

3. Discuss about circuit switching and packet switching in detail

4. Discuss various routing protocols.

5. Explain the network threats and encryption/decryption in detail.

SECTION — B

Answer any FIVE questions from the following

(5 × 4 = 20)

6. State and explain different network components.
7. Briefly explain different encoding and decoding techniques.
8. Write about ring, mesh and bus network topologies with diagrams.
9. Write about CSMA/CD mechanism.
10. Explain about transparent bridges.
11. What is meant by hierarchal naming? Explain.
12. Explain about multi cast routing process in brief.
13. Describe different issues in IP security.

SECTION — C

Answer ALL questions

($5 \times 1 = 5$)

14. Define parity check.
15. What is Ethernet?
16. Define static and dynamic routing.
17. What is ALOHA?
18. What is Addressing?

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(DMSIT 03)

M.Sc. DEGREE EXAMINATION,
DECEMBER 2019.
First Year
Information Technology

COMPUTER ORGANIZATION

Time : Three hours Maximum : 70 marks

SECTION — A ($3 \times 15 = 45$)

Answer any THREE questions from the following

1. Explain about structural and functional view of digital computer.

2. Explain PCI configuration of desktop system and server system.

3. Discuss how multiplication is done for floating point numbers with flow chart.

4. Explain about instruction cycle state diagram with interrupts and without interrupts.

5. How to organize the Central Processor Unit? Explain in detail.

SECTION — B

Answer any FIVE questions from the following
($5 \times 4 = 20$)

6. Describe the evaluation of intel x86 architecture.

7. What are the applications of embedded systems?

8. Explain the different timing diagrams associated with buses.

9. What are the physical characteristics of magnetic disks?

10. What is a meant by fixed point representation? Explain.

11. How addition and subtraction is done for decimal numbers?

12. Explain about instruction fetch, execute and I/O function.

SECTION — C

Answer ALL questions

($5 \times 1 = 5$)

13. What is meant by Define clock speed?

14. What is use cache memory?

15. What working principle of DVD?

16. What is an interrupt?

17. What is sign magnitude representation of integer?

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(DMSIT 04)

M.Sc. DEGREE EXAMINATION,
DECEMBER 2019.
First Year
Information Technology

DATA STRUCTURES WITH C

Time : Three hours Maximum : 70 marks

SECTION A — (3 × 15 = 45 marks)
Answer any THREE questions

1. Write about algorithm development steps and also control structures with flow diagrams.

2. Explain about string pattern algorithm with example and also give any four string handling functions.

3. What is circular linked list? Implement different operations of circular linked lists.

4. (a) Discuss about AVL tree rotations with suitable examples.

   (b) Write a subroutine to delete a node from AVL tree.

5. Describe insertion sort algorithm and trace the steps of insertion sort for sorting the list- 12,19,33,26, 29, 35, 22, 37. Find the total number of comparisons made.

SECTION B — (5 × 4 = 20 marks)
Answer any FIVE questions

6. Explain about Abstract data model.

7. Write an algorithm to find maximum element of list of elements.

8. What is record? Give the representation of record in memory.

9. Write a program for performing Stack operations.

10. Draw the BST for the given list of elements 46, 21, 56, 89, 9, 12.

11. Write an algorithm for creating a heap.

12. Write an algorithm to insert a node into a threaded binary tree.

13. Briefly explain about hashing.

SECTION C — (5 × 1 = 5)
Answer ALL questions

14. Define Omega (Ω) notation of algorithm.

15. Define De-queue.

16. Give the applications of linked list.

17. Define rehashing?

18. Define B - tree.

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(DMSIT 05)

M.Sc. DEGREE EXAMINATION,
DECEMBER 2019.
First Year
OPERATING SYSTEMS

Time : Three hours Maximum : 70 marks

SECTION A – (3 × 15 = 45 marks)

Answer any THREE questions.

1. Explain evolution of operating systems and also mention operating system tasks.

2. Suppose that the following processes arrive for execution at the time indicated:

Process	Arrival Time	Burst Time
P1	0	8
P2	1	4
P3	2	9
P4	3	5

What is the average waiting and turnaround time for these processes with:

(a) FCFS scheduling algorithm

(b) Preemptive SJF algorithm

(c) Non — Preemptive SJF algorithm

3. Explain about the file system architecture and functions of file systems.

4. Explain the difference between External fragmentation and Internal fragmentation. How to solve the fragmentation problem using paging?

5. Discuss different issue in hardware I/O organization.

SECTION B – (5 × 4 = 20 marks)

Answer any FIVE questions.

6. Describe essential properties of Real Time and distributed operating Systems

7. With a neat sketch, explain the process state diagram.

8. What are the semaphores? How do they implement mutual exclusion?

9. What resources are used when a thread is created? How do they differ from those used when a process is created?

10. What are the necessary conditions for deadlock?

11. Explain about contiguous memory allocation.

12. What is directory? What are the operations that can be performed on a directory?

13. Write about different program threats.

SECTION C —(5 × 1 = 5 marks)

Answer ALL questions.

14. Define critical section.

15. What is demand paging?

16. Define virtual memory.

17. Define overlays.

18. What is meant by authentication?

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(DMSIT 06)

M.Sc. DEGREE EXAMINATION,
DECEMBER 2019.
First Year
Information Technology

DATABASE MANAGEMENT SYSTEMS

Time : Three hours Maximum : 70 marks

SECTION — A

Answer any THREE question

(3 × 15 = 45)

1. (a) Explain the conventional file processing system and give its drawbacks.

   (b) Write about sequential file organization and indexed sequential file organization.

2. Explain the following interconnected data structures:

   (a) Sorted list data structure

   (b) Ring data structure

   (c) Tree data structure

   (d) Ring Data structure

3. Illustrate database diagrams with suitable example.

4. Explain PC — FOCUS database description and data manipulation commands with syntax

5. Explain the usage of the following SQL commands with syntax:

   (a) Where clauses

   (b) Relational algebra operations

   (c) Select

   (d) Update

   (e) Insert record in to the table

SECTION — B

Answer any FIVE question

(5 × 4 = 20)

6. State and describe different location methods

7. What is field? Write about different associations among the fields.

8. What are the components of database management systems?

9. Write the features of hierarchical data model.

10. What are the various symbols used to represent Entity — Relationship diagrams.

11. Describe 1st, 2nd and 3rd normal form with example.

12. Describe the guidelines for mapping conceptual data model into network model.

13. Explain resource locking mechanism in concurrency control.

SECTION — C

Answer ALL question

(5 × 1 = 5)

14. What is an Expert system?

15. Define conceptual data model.

16. What is meant by Physical address pointer?

17. Define normalization.

18. Define database recovery.

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