(DMSIT 01)

M.Sc. DEGREE EXAMINATION,
NOVEMBER 2021.

First Year

Information Technology

BASICS OF IT

Time : Three hours Maximum : 70 marks

SECTION A — (3 × 15 = 45 marks)

Answer any THREE questions.

1. (a) Explain about evaluation information systems.

   (b) Write about major types web-based information systems and give their functions.

2. Discuss about different input and output technologies.

3. Describe the general functions of the operating systems and Differentiate among types of operating systems.

4. Explain about network processing strategies and types of networks.

5. (a) What is DNS? Describe different DNS specifications.

   (b) State and explain different layers of OSI reference model.

SECTION B — (5 × 4 = 20 marks)

Answer any FIVE questions.

6. Describe the organizational level classification of Information system.

7. Write the types of primary storage devices.

8. Describe the various ways to connect internet.

9. What is system software? Describe different types of system software's.

10. Write about different communication media channels.

11. Write short notes on World Wide Web.

12. Explain about data visualization technologies.

13. Write the features of web — based data management systems.

SECTION C — (5 × 1 = 5 marks)

Answer ALL questions.

14. Define data warehouse.

15. Define multi- tasking operating system.

16. What are the graphic software and spread sheets?

17. What is decision support system?

18. What is digital certificate?

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(DMSIT 02)

M.Sc. DEGREE EXAMINATION,
NOVEMBER 2021.

First Year

Information Technology

COMPUTER NETWORKS

Time : Three hours Maximum : 70 marks

SECTION A — (3 × 15 = 45 marks)

Answer any THREE questions.

1. What is encoding and decoding? Illustrate error detection and recovery mechanism.

2. Explain the working of carrier sense multiple access protocol.

3. Explain in detail about circuit switching and packet switching.

4. (a) E-mail systems contain which two subsystems. Write the five basic functions
provided by e-mail system.

   (b) Explain distance vector routing mechanism with example.

5. Explain about different issues in web security and e - mail security.

SECTION B — (5 × 4 = 20 marks)

Answer any FIVE questions.

6. Describe various network components.

7. Write about the multiplexing and de-multiplexing process in frequency division multiplexing.

8. Calculate the polynomial checksum for the following frame and generator Frame:1101011011 and Generator $x^4 + x + 1$.

9. Write about the bridged Ethernet and switched Ethernet.

10. Compare Virtual circuit and Datagram subnets.

11. Explain how it can be achieved with pure ALOHA and slotted ALOHA.

12. Write about ATM network addressing.

13. Explain the concept of Encryption/Decryption.

SECTION C — (5 × 1 = 5 marks)

Answer ALL questions.

14. Define ring topology.

15. What is name resolution?

16. What is the difference between LAN and WAN?

17. Define WWW.

18. What is RPC?

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(DMSIT 03)

M.Sc. DEGREE EXAMINATION,
NOVEMBER 2021.

First Year

Information Technology

COMPUTER ORGANISATION

Time : Three hours Maximum : 70 marks

SECTION A — (3 × 15 = 45 marks)

Answer any THREE questions from the following.

1. Discuss the evaluation of intel x86 architecture and embedded systems.

2. Explain bus inter connection and point-to-point interconnection with neat diagrams.

3. Explain how are data read from and written onto a magnetic disk? What are the advantages of using a glass substrate for a magnetic disk?

4. Explain the multiplication and division of two floating point numbers by using flowchart.

5. Design a hardwired control unit for CPU, Why hardwired CU are suitable for RISC.

SECTION B — (5 × 4 = 20 marks)

Answer any FIVE questions.

6. Describe top level structure of computer.

7. What are the SPEC benchmarks?

8. State and explain different RAID levels.

9. Describe the PCI bus structure.

10. Write the IEEE Standard for Binary Floating-Point Representation.

11. Describe various optical memory devices.

12. Explain how to detect overflow in fixed point representation.

13. What is an I/O processor? Explain with a neat Diagram.

SECTION C — (5 × 1 = 5 marks)

Answer ALL questions.

14. Define MIPS and FLOPS.

15. What is Divide overflow?

16. What is asynchronous data transfer?

17. What is an interrupt?

18. What is stored program computer?

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(DMSIT 04)

M.Sc. DEGREE EXAMINATION,
NOVEMBER 2021.

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. Explain sequential, selection and iterative logic for implementing the algorithm with neat flow charts.

2. Illustrate different string pattern algorithms with suitable example.

3. What is double inked? Explain different operations of double linked lists.

4. (a) Write in-order, pre-order and post-order traversal of a binary tree.

   (b) Develop a binary search tree resulting after inserting the following integer keys:

   49, 27, 12, 11, 33, 77, 26, 56, 23, 6.

5. Discuss how to sort elements using merge sort with suitable example.

SECTION B — ($5 \times 4 = 20$ marks)

Answer any FIVE questions.

6. What is record? How it represents in computer memory?

7. Write an algorithm to solving the quadratic equation.

8. Describe the Big - Oh (O) and Omega (Ω) notations of an algorithm.

9. Describe various Queue operations.

10. What is recursion? How to implement recursion using stack?

11. Describe various AVL tree rotations with suitable example.

12. Write an algorithm to delete a node from tree.

13. Describe selection sort procedure.

SECTION C — (5 × 1 = 5 marks)

Answer ALL questions.

14. Give the applications of stack.

15. What is pointer?

16. What is circular queue?

17. Define B — tree.

18. What is single linked list?

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(DMSIT 05)

M.Sc. DEGREE EXAMINATION,
NOVEMBER 2021.

First Year

Information Technology

OPERATING SYSTEMS

Time : Three hours Maximum : 70 marks

SECTION A — (3 × 15 = 45 marks)

Answer any THREE questions.

1. Explain about various functions operating systems.

2. Consider the following set of processes with length of CPU burst time and arrival time given in milliseconds

Process	Burst Time	Arrival time
P1	5	1.5
P2	1	0
P3	2	2
P4	4	3

Illustrate the execution of these processes using FCFS, SJF CPU scheduling algorithms. Also calculate wait time, turnaround time for each process? Also calculate Average waiting time, average turnaround time for above situation.

3. With neat sketch, explain about paging and segmentation.

4. (a) Discuss various schemes for defining the logical structure of directory.

   (b) What do you mean by thrashing? Suggest solutions to overcome this in virtual memory.

5. Discuss different disk scheduling algorithm with example.

SECTION B — ($5 \times 4 = 20$ marks)

Answer any FIVE questions.

6. What is thread? Compare user threads and kernel threads.

7. What is critical section problem? State the requirements of critical section problem solution.

8. What is PCB? Write about the various elements of process control block.

9. Explain about kernel I/O subsystem in detail.

10. Describe different CPU schedulers.

11. Write the difference between internal and external fragmentation.

12. What are the various attributes that are associated with an opened file?

SECTION C — (5 × 1 = 5 marks)

Answer ALL questions.

13. Define throughput and average waiting time.

14. Define Semaphore.

15. Define demand paging.

16. Define virus and worm.

17. Define boot block. How it initiated from disk?

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(DMSIT 06)

M.Sc. DEGREE EXAMINATION, NOVEMBER 2021.

Information Technology

First Year

DBMS (DATA BASE MANAGEMENT SYSTEM)

Time : Three hours Maximum : 70 marks

SECTION A – ($3 \times 15 = 45$ marks)

Answer any THREE questions.

1. Describe components of information system and also classifications of information system.

2. Discuss various data structures used storing data with example.

3. What is meant by PC – FOCUS? Explain about
   PC – FOCUS manipulation and PC – FOCUS
   description.

4. What is information management system (IMS)? Write about IMS database description.

5. Explain about concurrency control mechanism in detail.

SECTION B – ($5 \times 4 = 20$ marks)

Answer any FIVE questions.

6. Describe the many – to –may association and recursive associations among files.

7. What is pointer? What are the different types of pointers?

8. Explain about 3rd and BCNF normal forms with example.

9. Describe various symbols used to represent E – R diagrams.

10. Explain about network based data model with suitable example.

11. Explain select, insert, create and update commands of SQL.

12. Write short notes on security and maintenance of databases.

13. Describe 2 – phase locking protocol with example.

SECTION C – (5 × 1 = 5 marks)

Answer ALL questions.

14. What is field?

15. What is Decision Support System?

16. What is relational algebra?

17. Define database action diagram.

18. Define conceptual and physical data models.

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