

(S2)-1283

Roll No. _____

SECTION - B

- Total No. of Pages : 02
2. Write a detailed note on following Multiplexing techniques :
- Frequency Division
 - Wave Division
3. Write a detailed note on Slotted ALOHA.
4. Write a detailed note on IPV6.
5. Write a detailed note on Token Bucket Algorithm.
6. What is HTTP? Explain HTTP protocol in detail.

SECTION - C

7. Write a detailed note on various Transmission Media.
8. Write a detailed note on the following protocols :
- Stop & wait
 - Go back-N ARQ
 - Selective repeat ARQ
9. Write a detailed note on User Datagram Protocol (UDP).

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Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech. (IT) (Sem.-4)

DEVELOPMENT OF SOCIETIES

Subject Code : HSMC-101-18

M.Code : 77541

Date of Examination: 22-05-2025

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

1. Answer briefly:
 - a) Define family.
 - b) What is human being?
 - c) Explain the political system.
 - d) Explain governing system.
 - e) What is socialism?
 - f) Define economic development.
 - g) What is history?
 - h) What is regulation of society?
 - i) What do you understand by term capitalism?
 - j) Define social structures.

SECTION-B

2. Briefly explain the Gandhian concept of development.
3. Explain the different idea of development in current context.
4. Explain the different models of governing system and their comparative study.
5. What is the relationship between origin of family?
6. Explain the meaning and scope of Buddhist economics.

SECTION-C

7. Explain the implications of E. F. Schumacher's idea of development.
8. Explain the relation between human being and society.
9. Explain the comparative studies on birth of capitalism and Marxism.

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Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech. (IT) (Sem.-4)

DESIGN & ANALYSIS OF ALGORITHMS

Subject Code : BTIT-403-18

M.Code : 77540

Date of Examination : 19-05-2025

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION - A

1. **Answer briefly :**
- Define an algorithm and list two of its main characteristics.
 - Describe what is meant by the "worst-case behavior" of an algorithm.
 - What is the brute-force approach in the algorithm design?
 - In which type of problems is backtracking commonly used?
 - What type of graph uses topological sorting?
 - Write one difference between DFS and BFS.
 - Give an example of a common NP-complete problem.
 - What is a reduction technique?
 - What is a key goal of approximation algorithms?
 - How do randomized algorithms differ from deterministic algorithms?

SECTION - B

2. Compare time complexity and space complexity with examples.
3. Describe the main concept of dynamic programming and how it optimizes problem-solving.
4. Explain the basic concept of greedy strategy and its application in problem-solving.
5. Explain Kruskal's Minimum cost spanning tree algorithm with the suitable example.
6. Explain how heuristics can be applied to optimization problems and discuss one example where they are effective.

SECTION - C

7. Explain the satisfiability problem and write the algorithm.
8. Describe the process of calculating Fibonacci numbers using recursion and calculate its time complexity.
9. Describe how backtracking is used effectively to solve constraint-based problems, such as a Sudoku puzzle.

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Total No. of Pages : 02

Total No. of Questions : 09

B.Tech. (Information Technology) (Sem.-4)

OPERATING SYSTEMS

Subject Code : BTIT-402-18

M.Code : 77539

Date of Examination : 05-05-2025

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION – A

1. Write briefly :
 - a) Explain in brief about Concept of Operating System.
 - b) What do you mean by Multiprogramming systems? Write its advantages.
 - c) Differentiate between User Level threads and Kernel Level threads.
 - d) Differentiate between Pre-emptive and Non-pre-emptive scheduling.
 - e) Explain in brief about Monitors.
 - f) Define Safe State and unsafe state in relation to deadlocks.
 - g) Differentiate between Deadlock prevention and Deadlock Avoidance.
 - h) Explain in brief about the term compaction.
 - i) Explain briefly the term Free space Management
 - j) What is a File? List the various File Attributes and File operations.

SECTION - B

2. Write a detailed note on following :

a) Scheduling Criteria

b) Process Control Block (PCB)

3. Write a detailed note on Reader's Writer problem.

4. Explain in detail about Deadlock Detection.

5. Write a detailed note on Virtual Memory.

6. Write a detailed note on various File Allocation Methods.

SECTION - C

7. Explain the following CPU scheduling algorithms with example :

a) Shortest Job First

b) FCFS

c) RR

8. Explain the Concept of Paging in detail.

9. Write a detailed note on following in reference to Inter-process communication :

a) The Producer\Consumer Problem

b) Semaphores

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