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**R22**



**CMR COLLEGE OF ENGINEERING & TECHNOLOGY**  
(UGC AUTONOMOUS)

**Examination : M.Tech II Semester Regular & Supplementary Examinations August-2025**

**Course Name : Advanced Algorithms**

**Course Code : B458304**

**Branch : Computer Science & Engineering**

**Date & Session : 25-08-2025 AN**

**Duration: 3 hours**

**Max. Marks: 60**

(Note: Assume suitable data if necessary)

**PART-A**

**Answer all TEN questions**  
**Each question carries ONE mark.**

**10x1=10M**

1. What is an accounting method? 1 M
2. In which case the Quick sort will exhibit worst case time complexity? 1 M
3. What is an independent set in a matroid? 1 M
4. Define graph matching. 1 M
5. What is the inverse of a triangular matrix, and what is its structure? 1 M
6. Define the maximum flow problem and its constraints. 1 M
7. What is the difference between base representation and modulo representation of a number? 1 M
8. What is the Discrete Fourier Transform (DFT) in a modulo ring? 1 M
9. List recently proposed data structures used to enhance modern searching or sorting techniques. 1 M
10. Define feasible region. 1 M

**PART-B**

**Answer the following. Each question carries TEN Marks.**

**5x10=50M**

- 11.A). What is Topological sorting? Illustrate topological sorting with algorithm. 10M
- OR**
11. B). Differentiate graph traversing techniques with algorithm. 10M
12. A). Define a graphic matroid and describe how it relates to spanning trees. 10M
- OR**
12. B). Write an algorithm to find out maximum matching in graphs. 10M
13. A). i) Differentiate between maximum flows and minimum cuts in a graph. 5M  
ii) Describe the Ford-Fulkerson method for computing the maximum flow in a flow network. 5M
- OR**
13. B). Describe the relation between time complexities of basic matrix operations. 10M
14. A). Explain How to find out path matrix with warshall algorithm. 10M
- OR**
14. B). Explain following: i) Chinese Remainder Theorem. 5M  
ii) Fast Fourier transform algorithm. 5M

**(P.T.O..)**

15. A). Describe proof of NP-hardness and NP-completeness.

10M

**OR**

15. B). Explain the concept of the feasibility region in linear programming and how geometry helps in solving linear programming problems using algorithms like the Simplex method.

10M

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**CMR COLLEGE OF ENGINEERING & TECHNOLOGY**  
(UGC AUTONOMOUS)

**Examination** : M.Tech II Semester Regular & Supplementary Examinations Aug/Sept-2025  
**Course Name** : Robotic Process Automation  
**Course Code** : B458412  
**Branch** : Computer Science & Engineering  
**Date & Session** : 02-09-2025 AN **Duration:** 3 hours **Max. Marks:** 60

(Note: Assume suitable data if necessary)

**PART-A**

Answer all TEN questions  
Each question carries ONE mark.

10x1=10M

1. Define the Robotics Processes Automation. 1 M
2. What are the ways to create a bot? 1 M
3. Find an important web control room in RPA. 1 M
4. Justify the RPA is satisfying for current industry requirement? 1 M
5. List out some important functions of devices in the RPA. 1 M
6. Summarize roles of the administration. 1 M
7. How the task editor utilized in bots creations? 1 M
8. Mention the functions of loop and excel command. 1 M
9. Describe the terminal emulator commands. 1 M
10. Illustrate the Manage windows control command. 1 M

**PART-B**

Answer the following. Each question carries TEN Marks.

5x10=50M

- 11.A). Describe bot creation introduction to RPA and how its implementation. 10M
- OR**
11. B). Demonstrate, use cases of automation anywhere enterprise platform. 10M
12. A). Identify and understand features panel and dashboard of Web Control Room and client introduction. 10M
- OR**
12. B). Illustrate how the bots can audit and features panel activity (view tasks in progress and scheduled tasks). 10M
13. A). Understand how to handle audit log and administration. 10M
- OR**
13. B). Importance in the client introduction and conclusion. 10M
14. A). What is the processes of various recorders and task editor? 10M
- OR**
14. B). How to using variables, command library, loop command and excel command? 10M
15. A). Discuss the FTP command, PGP command and object cloning command. 10M
- OR**
15. B). Explain an error handling command and report designer. 10M

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**CMR COLLEGE OF ENGINEERING & TECHNOLOGY**  
**(UGC AUTONOMOUS)**

**Examination** : M.Tech II Semester Regular & Supplementary Examinations Aug/Sept-2025  
**Course Name** : Advanced Computer Architecture  
**Course Code** : B458305  
**Branch** : Computer Science & Engineering  
**Date & Session** : 04-09-2025 AN **Duration:** 3 hours **Max. Marks:** 60

(Note: Assume suitable data if necessary)

**PART-A**

**Answer all TEN questions**  
**Each question carries ONE mark.**

**10x1=10M**

1. Explain the concept of "conditions of parallelism". 1 M
2. Explain SIMD computer models. 1 M
3. List the applications relevant to parallel processing. 1 M
4. Explain Amdahl's Law and its significance. 1 M
5. Explain the concept of pipelining. 1 M
6. What is superscalar pipeline design? 1 M
7. Define cache coherence in multiprocessors. 1 M
8. Explain message-passing mechanisms. 1 M
9. What is vector processing? 1 M
10. Describe the organization of SIMD computers. 1 M

**PART-B**

**Answer the following. Each question carries TEN Marks.**

**5x10=50M**

- 11.A). Compare and contrast multiprocessors and multicomputer. 10M
- OR**
11. B). Explain the different system interconnect architectures. 10M
12. A). Explain principles of scalable performance and their applications. 10M
- OR**
12. B). Discuss advanced processor technologies with examples. 10M
13. A). Design an arithmetic pipeline for a specific operation. 10M
- OR**
13. B). Explain pipelining techniques and how they improve performance. 10M
14. A). Describe the evolution of multicomputers through the three generations. 10M
- OR**
14. B). Evaluate the suitability of different interconnects for specific parallel applications. 10M
15. A). Describe the architecture and operation of the connection machine CM-5. 10M
- OR**
15. B). Evaluate the suitability of vector processing for different types of applications. 10M

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**CMR COLLEGE OF ENGINEERING & TECHNOLOGY**  
**(UGC AUTONOMOUS)**

**Examination** : M.Tech II Semester Regular & Supplementary Examinations August-2025  
**Course Name** : Enterprise Cloud Concepts  
**Course Code** : B458407  
**Branch** : Computer Science & Engineering  
**Date & Session** : 08-09-2025 AN **Duration:** 3 hours **Max. Marks:** 60

(Note: Assume suitable data if necessary)

**PART-A**

**Answer all TEN questions**  
**Each question carries ONE mark.**

**10x1=10M**

1. What are the primary goals of cloud computing? 1 M
2. Name any one cloud deployment model. 1 M
3. State one benefit of virtualization in cloud. 1 M
4. List any one component of cloud infrastructure mechanism. 1 M
5. What is remote administration? 1 M
6. What is dynamic scalability? 1 M
7. Mention one advantage of cloud in enterprise digital transformation. 1 M
8. State one implication of cloud on enterprise strategy. 1 M
9. Name one key feature of next-generation cloud services. 1 M
10. What is the role of cloud infrastructure solutions? 1 M

**PART-B**

**Answer the following. Each question carries TEN Marks.**

**5x10=50M**

- 11.A). Analyze the roles and boundaries in cloud computing with appropriate illustrations. 10M
- OR**
- 11.B). Explain the origins and historical influences that led to the emergence of cloud computing. 10M
- 12.A). Describe different types of virtualization technology and their role in cloud computing. 10M
- OR**
- 12.B). Explain the significance of cloud storage device in the cloud environment. 10M
- 13.A). Elaborate on SLA management and its importance in a cloud computing environment. 10M
- OR**
- 13.B). Describe cloud architecture patterns with respect to service load balancing and resource pooling. 10M
- 14.A). Analyze the enabling mechanisms of smart enterprises and their benefits. 10M
- OR**
- 14.B). Explain how cloud computing transforms enterprise strategy with relevant examples. 10M
- 15.A). Elaborate on Cloud-Instigated IT Transformations. How do these transformations impact traditional enterprise architecture and operations? 10M
- OR**
- 15.B). Evaluate the role of hybrid and enterprise clouds in meeting evolving business and compliance needs. 10M

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