CMR COLLEGE OF ENGINEERING & TECHNOLOGY
(UGC AUTONOMOUS)
M.Tech I Semester Regular Examinations March-2023
Course Name: ADVANCED DATA STRUCTURES
(CYBER SECURITY)

Date: 20.03.2023 FN	Time: 3 hours	Max.Marks: 60

(Note: Assume suitable data if necessary)
PART-A
Answer all TEN questions (Compulsory)
Each question carries ONE mark.   10x1=10M

1.	Define heap structure.	1 M
2.	What is the time complexity of deleting an element from a heap?	1 M
3.	What is a hash function?	1 M
4.	What is a collision in hashing?	1 M
5.	Define an OBST.	1 M
6.	Illustrate the height of an OBST.	1 M
7.	Brief about Multiway Tries	1 M
8.	What is Binary Tries?	1 M
9.	What are some common pattern matching algorithms?	1 M
10.	Brief about naive algorithm.	1 M

PART-B
Answer the following. Each question carries TEN Marks.   5x10=50M

11.A).	Explain about Cascading Cut in Fibonacci heap.	10M
	OR	
11. B).	For the given input [35 33 42 10 14 19 27 44 26 31], construct Max heap and Min heap?	10M
12. A).	List and discuss about different types of techniques to resolve collisions in a hash table.	10M
	OR	
12. B).	Write an algorithm to insert a directory pair from a directory less dynamic hash table.	10M
13. A).	What is a Red black Tree? Explain how a red black tree can be represented.	10M
	OR	
13. B).	Explain the insertion and deletion operations in AVL tree with an example.	10M
14. A).	Explain the insertion, deletion and search operations on Digital Search Trees with an example.	10M
	OR	
14. B).	List the advantages and disadvantages of Tries.	10M
15. A).	Analyze the Brute force pattern matching.	10M
	OR	
15. B).	Discuss briefly about Knuth-Morris-Pattern matching Algorithm.	10M

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CMR COLLEGE OF ENGINEERING & TECHNOLOGY
(UGC AUTONOMOUS)
M.Tech I Semester Regular Examinations March-2023
Course Name: ADVANCED COMPUTER NETWORKS
(CYBER SECURITY)

Date: 23.03.2023 FN   Time: 3 hours   Max.Marks: 60

(Note: Assume suitable data if necessary)
PART-A
Answer all TEN questions (Compulsory)
Each question carries ONE mark.   10x1=10M

1. What is the major difference between token ring and Ethernet?   1 M
2. Define Wireless Mesh Network.   1 M
3. What is a Process?   1 M
4. What is the bandwidth-sensitive applications?   1 M
5. List the advantages of Network monitoring tools.   1 M
6. What is FTP (File Transfer Protocol)?   1 M
7. What is Distributed Inter-frame Space (DIFS)?   1 M
8. What are the drawbacks of millimetre wave frequencies?   1 M
9. What are the different packet types of RTCP?   1 M
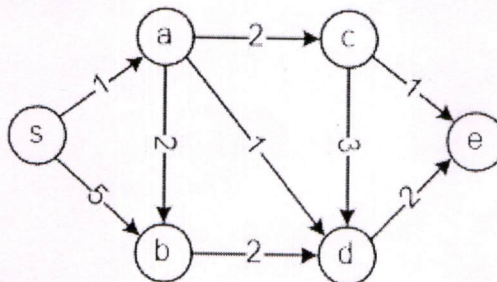10. Give an example of spatial coding.   1 M

PART-B
Answer the following. Each question carries TEN Marks.   5x10=50M

11.A).   i) Discuss approaches to congestion control.   5M
        ii) Compare and contrast cellular and wireless networks.   5M

OR

11. B).   Using Dijkstra's Algorithm, find the shortest distance from source vertex 'S' to remaining   10M
vertices in the following graph.

12. A).   Explain client-server architecture with neat sketch.   10M

OR

12. B).   i) Describe in detail the differences between TCP and UDP.   6M
        ii) Draw Client-server architecture and P2P architecture.   4M

(P.T.O..)

13. A). Discuss the advantages and disadvantages of persistent connections in the context of HTTP.   10M

<center>**OR**</center>

13. B). i) Discuss about the hostname-to-IP-address translation service.   5M

ii) Demonstrate socket programming for both UDP and TCP using a simple client-server application.   5M

14. A). Illustrates the principal components of the 802.11 wireless LAN architecture.   10M

<center>**OR**</center>

14. B). i) Explain about different elements of a mobile network architecture   5M

ii) Direct routing overcomes the inefficiency of triangle routing but does so at the cost of additional complexity. Justify.   5M

15. A). Explain about Session Initiation Protocol (SIP) used for real-time conversational applications.   10M

<center>**OR**</center>

15. B). i) Discuss about Multimedia networking application types.   5M

ii) Explain voice-over-IP characteristics.   5M

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CMR COLLEGE OF ENGINEERING & TECHNOLOGY
(UGC AUTONOMOUS)
M.Tech I Semester Regular Examinations March-2023
Course Name: INFORMATION SECURITY
(CYBER SECURITY)

Date: 25.03.2023 FN	Time: 3 hours	Max.Marks: 60

(Note: Assume suitable data if necessary)
PART-A
Answer all TEN questions (Compulsory)
Each question carries ONE mark.   10x1=10M

1.	Interpret the different Security Services.	1 M
2.	Distinguish between Block Cipher and Stream Cipher.	1 M
3.	Outline the Man in the Middle Attack.	1 M
4.	What are Classical and Public Key Encryptions?	1 M
5.	Determine the need of PGP and S/MIME.	1 M
6.	Classify the Authentication Protocols.	1 M
7.	Show the Dual Signature with neat diagram.	1 M
8.	Discuss the Importance of Encapsulation Security Payload in IPSec.	1 M
9.	Summarize the Trojan horses virus.	1 M
10.	Identify the need of Firewall.	1 M

PART-B
Answer the following. Each question carries TEN Marks.   5x10=50M

11.A).	i) Summarize the Blowfish Algorithm.	5M
	ii) Compare different types of Security Mechanisms.	5M
	OR	
11. B).	i) Illustrate the Principles followed in Key Distributions.	5M
	ii) Discuss about Strengths of DES.	5M
12. A).	How can you prioritize the importance of Elliptic Curve Cryptography in detail?	10M
	OR	
12. B).	i) Develop the steps involved in RSA public Key Cryptography	5M
	ii) In a public-key system using RSA, you interpret the ciphertext $C = 10$ sent to a user whose public key is $e = 5$, $n = 35$. What is the plaintext M?	5M
13. A).	i) Classify the Kerberos Realms and Multiple Kerberi.	5M
	ii) Outline the the Differences between Versions 4 and 5.	5M
	OR	
13. B).	Illustrate all the three X.509 Strong Authentication Procedures.	10M

(P.T.O..)

14. A). Explain in detail about Encapsulating security payload. 10M

OR

14. B). Can you Analyze the SSL Architecture with a neat diagram? 10M

15. A). i) Construct the different principles used in Firewall Configurations. 5M
ii) Summarize the importance of Trusted Systems. 5M

OR

15. B). i) Demonstrate the Statistical Anomaly Detection Technique. 5M
ii) Determine the different Types of Viruses. 5M

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CMR COLLEGE OF ENGINEERING & TECHNOLOGY
(UGC AUTONOMOUS)
M.Tech I Semester Regular Examinations March-2023

Course Name: DIGITAL FORENSICS

(CYBER SECURITY)

Date: 27.03.2023 FN	Time: 3 hours	Max.Marks: 60

(Note: Assume suitable data if necessary)

PART-A

Answer all TEN questions (Compulsory)

Each question carries ONE mark.   10x1=10M

1.	Define Forensic science.	1 M
2.	Write about Criminalistics.	1 M
3.	Discuss various court orders.	1 M
4.	Explain unretrieved Communication.	1 M
5.	What is an Evidence?	1 M
6.	Explain various types of Evidences.	1 M
7.	Define Investigation.	1 M
8.	Write the steps to preserve the network data.	1 M
9.	Define Mobile Forensics.	1 M
10.	List the mobile forensic tools.	1 M

PART-B

Answer the following. Each question carries TEN Marks.   5x10=50M

11.A).	Write the laws related to computer forensics.	10M

OR

11. B).	Explain Digital Forensic and explain it's ethical practices.	10M

12. A).	What are the different steps involved in computer evidence handling? Explain in detail.	10M

OR

12. B).	Explain the guidelines for incident report writing give one report writing example.	10M

13. A).	Discuss about importance of forensic mind set.	10M

OR

13. B).	How to create and manage shared folders in operating system?	10M

14. A).	Write the following:	
	i) Complete a case	5M
	ii) Critique a case	5M

OR

14. B).	Explain about Network forensics in detail.	10M

15. A).	Explain about Mobile Forensic Techniques.	10M

OR

15. B).	Discuss methods to search and seizure electronic evidence in mobile forensic.	10M

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CMR COLLEGE OF ENGINEERING & TECHNOLOGY
(UGC AUTONOMOUS)
M.Tech I Semester Regular Examinations March-2023
Course Name: RESEARCH METHODOLOGY & IPR
(Common for all Branches)

Date: 29.03.2023 FN	Time: 3 hours	Max.Marks: 60

(Note: Assume suitable data if necessary)
PART-A
Answer all TEN questions (Compulsory)
Each question carries ONE mark.   **10x1=10M**

1. Define the meaning of research.   1 M
2. List the sources of data collection.   1 M
3. What are the various literature studies approaches?   1 M
4. What do you mean by Research Ethics?   1 M
5. Who are involved in research committe?   1 M
6. Differentiate between a report and paper for research proposal.   1 M
7. What is Patenting under PCT?   1 M
8. Define trademark.   1 M
9. How is the patent information stored?   1 M
10. List the various patent databases.   1 M

PART-B
Answer the following. Each question carries TEN Marks.   **5x10=50M**

11.A).	Explain the meaning and sources of Research problem.	10M
	OR	
11. B).	Discuss in detail about the types of errors in selecting a research problem.	10M
12. A).	Explain the effective literature studies approaches in research.	10M
	OR	
12. B).	What is Plagiarism? Explain how it is affecting the research process.	10M
13. A).	Explain the mechanics of writing a research report.	10M
	OR	
13. B).	Discuss in detail about effective technical writing and paper in developing research proposal.	10M
14. A).	Explain the processing of patenting and development.	10M
	OR	
14. B).	What are the salient features of designs and copyrights?	10M
15. A).	Explain the scope of patent rights and geographical indications.	10M
	OR	
15. B).	Describe the salient features of Administration of patent system.	10M

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