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R18

Course Code: A30514



CMR COLLEGE OF ENGINEERING & TECHNOLOGY
(UGC AUTONOMOUS)

B.Tech V Semester Regular/Supplementary Examinations December-2022

Course Name: **COMPUTER NETWORKS**

(Common for CSE, IT & CSM)

Date: 05.12.2022 AN

Time: 3 hours

Max.Marks: 70

(Note: Assume suitable data if necessary)

PART-A

Answer all TEN questions (Compulsory)

Each question carries TWO marks.

10x2=20M

1. Compare guided and unguided transmission media. 2 M
2. Outline a few application areas of computer networks. 2 M
3. Contrast error correction and error detection techniques. 2 M
4. Name the OSI layers in which repeater, hub, router and a switch work. 2 M
5. Recall the role played by ICANN in networks. 2 M
6. State the optimality principle. 2 M
7. List any two application layer protocols that use UDP. 2 M
8. List the three timers used by TCP. 2 M
9. State an authoritative record in DNS. 2 M
10. Summarize the role played by the user agent in E-mail. 2 M

PART-B

Answer the following. Each question carries TEN Marks.

5x10=50M

- 11.A). Differentiate between OSI and TCP/IP by drawing both reference models. 10M
- OR**
11. B). Illustrate simplex, half-duplex and full-duplex modes of transmission. Compare the three types of guided transmission media. 10M
12. A). Interpret how CSMA/CD protocol improves efficiency. Draw IEEE 802.3 frame format labelling the fields present. 10M
- OR**
12. B). Illustrate working of Go-Back-N and Selective Repeat sliding window protocols with an example. 10M
13. A). Outline the impact of congestion on network efficiency. Explain how congestion control is handled at network layer. 10M
- OR**
13. B). Compare IPv4 and IPv6 in at least four aspects. Draw both IPv4 and IPv6 headers with necessary labelling. 10M

(P.T.O..)

14. A). Draw the header format of TCP protocol and explain the fields present in the header. 10M

OR

14. B). Analyse the function of TCP sliding window and its role played in handling flow control at transport layer. 10M

15. A). Summarize the role played by HTTP protocol in the application layer. 10M

OR

15. B). Illustrate the functioning of DNS with your own example. 10M

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Course Code: A30518



CMR COLLEGE OF ENGINEERING & TECHNOLOGY
(UGC AUTONOMOUS)

B.Tech V Semester Regular/Supplementary Examinations December-2022

Course Name: FORMAL LANGUAGES & AUTOMATA THEORY

(Computer Science & Engineering)

Date: 07.12.2022 AN

Time: 3 hours

Max.Marks: 70

(Note: Assume suitable data if necessary)

PART-A

Answer all TEN questions (Compulsory)

Each question carries TWO marks.

10x2=20M

- | | |
|--|-----|
| 1. Differentiate between NFA and DFA. | 2 M |
| 2. Distinguish between Moore and Mealy machines. | 2 M |
| 3. State Arden's theorem. | 2 M |
| 4. List out the Applications of Regular Expressions. | 2 M |
| 5. Give CFG for the language that contains strings of all palindromes. | 2 M |
| 6. What is the difference between Finite Automata and PDA? | 2 M |
| 7. State Pumping Lemma for CFL. | 2 M |
| 8. Design Turing machine to find complement of a given binary number. | 2 M |
| 9. Draw the block diagram of Turing machine. | 2 M |
| 10. Discuss about recursive languages. | 2 M |

PART-B

Answer the following. Each question carries TEN Marks.

5x10=50M

- | | |
|--|----|
| 11.A). i) Construct a Mealy Machine to find 2's complement of a given binary number. | 5M |
| ii) Obtain DFA to accept strings having | 5M |
| a) Exactly one a | |
| b) atleast one 'a' | |
| c) Not more than 3 a's | |

OR

- | | |
|--|-----|
| 11. B). Design an NFA the set of all strings over {a, b} with three consecutive b's and constructs its equivalent DFA. | 10M |
| 12. A). i) State whether the following language is regular or not $L = \{a^i b^i \mid i \geq 1\}$. | 5M |
| ii) Write the regular expression representing the set of all strings over {a, b} with three consecutive b's? | 5M |

OR

- | | |
|---|-----|
| 12. B). Construct an NFA with ϵ -moves for the regular expression (Show Intermediate Steps Also) | 10M |
| $(a+b)^*(aa+bb)(a+b)^*$ | |

- | | |
|--|-----|
| 13. A). Describe about Ambiguity in CFG with a suitable example. | 10M |
|--|-----|

OR

- | | |
|---|-----|
| 13. B). Construct PDA for the language $L = \{a^n b^{2n} \mid n \geq 1\}$. | 10M |
|---|-----|

(P.T.O.)

14. A). i) Convert the following grammar to CNF. 5M
S → cBA, A → aA/a, B → bB/b

ii) Minimize the following CFG. 5M
S → A/0C1, A → B/01/10, C → 0/CD

OR

14. B). Design a Turing machine to accept palindromes. Example L = { abba }. 10M

15. A). Explain the following terms in brief: 10M
i) Types of Turing Machines
ii) P and NP problem
iii) Church's Hypothesis.

OR

15. B). i) Define PCP explain PCP with an example. 7M
ii) Describe the properties of Recursively enumerable languages. 3M

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Course Code: A30527



CMR COLLEGE OF ENGINEERING & TECHNOLOGY
(UGC AUTONOMOUS)

B.Tech V Semester Regular/Supplementary Examinations December-2022

Course Name: INFORMATION SECURITY

(Common for CSE & IT)

Date: 09.12.2022 AN

Time: 3 hours

Max.Marks: 70

(Note: Assume suitable data if necessary)

PART-A

Answer all TEN questions (Compulsory)

Each question carries TWO marks.

10x2=20M

- | | |
|--|-----|
| 1. Which cipher block modes of operations doesn't require decryption module? | 2 M |
| 2. List out different security services. | 2 M |
| 3. Differentiate MAC and Hash code. | 2 M |
| 4. What are the applications of Elliptical curve cryptography? | 2 M |
| 5. What is a public-key certificate? | 2 M |
| 6. Why is R64 conversion useful for an e-mail application? | 2 M |
| 7. What is the difference between SSL Connection and SSL State? | 2 M |
| 8. What services are provided by IPsec? | 2 M |
| 9. What is the role of compression in the operation of virus? | 2 M |
| 10. What are the two common techniques used to protect a password file? | 2 M |

PART-B

Answer the following. Each question carries TEN Marks.

5x10=50M

- | | |
|---|-----|
| 11.A). i) Categorize security Mechanisms and explain them in detail. | 6M |
| ii) Why Decryption module is not required in all cipher block modes of operation? | 4M |
| OR | |
| 11. B). i) How play-pair cipher technique is secure in message? Explain with an example. | 5M |
| ii) Illustrate where encrypted devices can be placed? and why? | 5M |
| 12. A). State the value of the length field in SHA-512 if the length of the message is i) 1919 bits
ii) 1920 bits iii) 1921 bits iv) 1922 bits and v) 1923 bits. | 10M |
| OR | |
| 12. B). i) The Elliptical cryptosystem parameters are $E_{11}(1,6)$ and $G = (2,7)$. B's secret key is $n_B = 7$. Find B's Public Key P_B . | 5M |
| ii) Explain RSA Algorithm in detail. | 5M |
| 13. A). Explain how authentication can be implemented in Kerberos version 4 with a detailed authentication dialogue. | 10M |
| OR | |
| 13. B). Draw a neat sketch of X.509 Certificate format and X.509 CRL format and explain in detail. | 10M |

(P.T.O..)

14. A). Explain the ESP header format and discuss the scope of ESP Encryption and Authentication. 10M

OR

14. B). Illustrate step-by-step procedure of SET in detail with an example. 10M

15. A). i) What are the typical phases of operation of a virus or worm? 5M
ii) What is the difference between a packet filtering firewall and a stateful inspection firewall? 5M

OR

15. B). What is Intruder? Explain Intrusion Detection system with example. 10M

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Course Code: A30528



CMR COLLEGE OF ENGINEERING & TECHNOLOGY
(UGC AUTONOMOUS)

B.Tech V Semester Regular/Supplementary Examinations December-2022

Course Name: DATA WAREHOUSING & DATA MINING

(Computer Science & Engineering)

Date: 09.12.2022 AN

Time: 3 hours

Max.Marks: 70

(Note: Assume suitable data if necessary)

PART-A

Answer all TEN questions (Compulsory)

Each question carries TWO marks.

10x2=20M

- | | |
|--|-----|
| 1. What is OLAP? | 2 M |
| 2. List out the operations of OLAP. | 2 M |
| 3. What is data preprocessing? | 2 M |
| 4. List the five primitives for specifying a data mining task. | 2 M |
| 5. Define apriori rule. | 2 M |
| 6. Define single level association rule. | 2 M |
| 7. Define Tree pruning. | 2 M |
| 8. Define gini-index | 2 M |
| 9. List the metrics for evaluating performance of classifiers | 2 M |
| 10. Define K-means partitioning. | 2 M |

PART-B

Answer the following. Each question carries TEN Marks.

5x10=50M

- | | |
|--|-----|
| 11.A). Difference between OLTP and OLAP. | 10M |
| OR | |
| 11. B). Explain star schema, snowflake and fact constellation schema with examples. | 10M |
| 12. A). Explain KDD process with neat diagram. | 10M |
| OR | |
| 12. B). Explain data transformation techniques with suitable examples. | 10M |
| 13. A). Explain FP growth algorithm with an example. | 10M |
| OR | |
| 13. B). Consider the Data set D. Given the minimum support ₂ , find frequent item sets by applying apriori algorithm on this dataset. | 10M |

Transaction ID	Items
100	A,C,D
200	B,C,E
300	A,B,C,E
400	B,E

(P.T.O..)

14. A). Explain about basic decision tree induction algorithm with an example 10M

OR

14. B). How does the Naïve Bayesian classification works? Explain in detail. 10M

15. A). Explain hierarchical clustering techniques. 10M

OR

15. B). Write K-means clustering algorithm with an example. 10M

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Course Code: A30529



CMR COLLEGE OF ENGINEERING & TECHNOLOGY
(UGC AUTONOMOUS)

B.Tech V Semester Regular/Supplementary Examinations December-2022

Course Name: SOFTWARE TESTING METHODOLOGIES

(Computer Science & Engineering)

Date: 09.12.2022 AN

Time: 3 hours

Max.Marks: 70

(Note: Assume suitable data if necessary)

PART-A

Answer all TEN questions (Compulsory)

Each question carries TWO marks.

10x2=20M

1. What are integration bugs? 2 M
2. Define Testing. 2 M
3. Define Data flow graph. 2 M
4. Define Dicing. 2 M
5. Define Path Product with an example. 2 M
6. Define Path Sum with an example. 2 M
7. Define Decision Table. 2 M
8. Illustrate the concept of state graph with an example. 2 M
9. Illustrate how a graph can be represented in Matrix form. 2 M
10. List out various properties of relations. 2 M

PART-B

Answer the following. Each question carries TEN Marks.

5x10=50M

- 11.A). Define Bug. Identify and analyze the consequences of bugs. 10M

OR
11. B). Construct the role of control flow graph in testing software. 10M
12. A). Illustrate the components of the data flow model. 10M

OR
12. B). Identify the components of transaction flow testing and explain. 10M
13. A). Compare and contrast nice and ugly domains. 10M

OR
13. B). Construct the role of path expression and path predicates in testing. 10M
14. A). Analyze how to identify equivalent states and how to merge them in representing state graphs. 10M

OR
14. B). Build a graph to represent the path expression: $ab(cde)^*(f+kba)^*(a+acd)^*(g+c)^*$. 10M
15. A). Illustrate node reduction algorithm with suitable example. 10M

OR
15. B). Explain the process to be followed when doing testing using WinRunner. 10M

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Course Code: A30516



CMR COLLEGE OF ENGINEERING & TECHNOLOGY
(UGC AUTONOMOUS)

B.Tech V Semester Regular/Supplementary Examinations December-2022

Course Name: OPERATING SYSTEMS

(Common for CSE & IT)

Date: 12.12.2022 AN

Time: 3 hours

Max.Marks: 70

(Note: Assume suitable data if necessary)

PART-A

Answer all TEN questions (Compulsory)

Each question carries TWO marks.

10x2=20M

1. State the two modes of operation and the bit used to identify them. 2 M
2. List any four services provided by the Operating Systems. 2 M
3. List any two advantages of cooperating processes. 2 M
4. State the criteria on which scheduling algorithms are evaluated. 2 M
5. State the critical section problem. 2 M
6. Compare the two types of Semaphores used for synchronization. 2 M
7. Explain the fragmentation problem in memory allocation. 2 M
8. Write short notes on Segmentation. 2 M
9. List the two types of file access methods used. 2 M
10. Why protection is important in operating systems? 2 M

PART-B

Answer the following. Each question carries TEN Marks.

5x10=50M

- 11.A). Enumerate the role played by system calls in Operating Systems. List and explain the different categories of system calls with examples. 10M

OR

11. B). i) Explain briefly about Real Time Systems. State the essential properties of Time sharing and distributed operating systems. 5M
- ii) Explain any two operating system structures in detail. 5M

12. A). Consider the following snapshot of a system with seven processes, arrival times and burst times given. 10M

Pnumber	AT	BT
P1	0	8
P2	1	6
P3	2	5
P4	3	3
P5	3	4
P6	4	1
P7	5	2

Draw the Gantt Chart representations for Non-preemptive SJF and Preemptive SJF algorithms. Calculate the average Turn Around Time for both the algorithms. Compare Average Waiting time of Preemptive SJF with that of FCFS Scheduling algorithm.

(P.T.O.)

OR

12. B). Interpret why IPC is important and how is it implemented in Operating Systems. Explain Shared memory model for IPC in detail. 10M

13. A). Explain Deadlock Avoidance using Banker's algorithm with the following 10M

- i) Data Structures
- ii) Safety Algorithm
- iii) Resource Request Algorithm
- iv) Find the needed resources for every process?
- v) Is the system being safe or not?

	Allocation				Max				Available			
	A	B	C	D	A	B	C	D	A	B	C	D
P0	0	0	1	2	0	0	1	2	1	5	2	0
P1	1	0	0	0	1	7	5	0				
P2	1	3	5	4	2	3	5	6				
P3	0	6	3	2	0	6	5	2				
P4	0	0	1	4	0	6	5	6				

13. B). Explain how Semaphores could be used to solve the Bounded Buffer problem and Dining Philosophers problem. 10M

14. A). Discuss the performance of Demand Paging. Illustrate the steps involved in handling a Page Fault. 10M

OR

14. B). Consider the following page-reference string: 10M

0 1 3 6 2 4 5 2 5 0 3 1 2 5 4 1 0

How many page faults would occur for the LRU and optimal replacement algorithms, assuming 4 frames? Remember that all frames are initially empty, so your first unique pages will all cost one fault for each. Also, compute Hit ratio of each algorithm.

15. A). Explain various disk free space management methods with examples. 10M

OR

15. B). Describe briefly about the three file allocation methods highlighting the advantages and limitations of each method. 10M

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Course Code: A30530



CMR COLLEGE OF ENGINEERING & TECHNOLOGY

(UGC AUTONOMOUS)

B.Tech V Semester Regular/Supplementary Examinations December-2022

Course Name: ARTIFICIAL INTELLIGENCE

(Common for CSE & IT)

Date: 14.12.2022 AN

Time: 3 hours

Max.Marks: 70

(Note: Assume suitable data if necessary)

PART-A

Answer all TEN questions (Compulsory)

Each question carries TWO marks.

10x2=20M

1. Give one definition of AI. 2 M
2. Define intelligent agent. 2 M
3. What is CSP? 2 M
4. What is binary constraint? 2 M
5. Define universal quantifiers. 2 M
6. Define semantic networks. 2 M
7. What is blocks world problem? 2 M
8. Define critical path in job scheduling problems. 2 M
9. What is unsupervised learning method? 2 M
10. What is a monte carlo algorithm? 2 M

PART-B

Answer the following. Each question carries TEN Marks.

5x10=50M

- 11.A). Give four definitions of Artificial intelligence system and justify the statement Agent=Architecture + Program. 10M

OR

11. B). Explain depth limited search with time and space complexity and how heuristic functions are useful to solve 8 Puzzle problem. 10M

12. A). Solve the constraint satisfaction problem. 10M

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T W O

(+)

F O U R

OR

12. B). Solve the Wumpus world problem with neat diagrams using Logic programming (propositional logic or predicate logic). 10M

(P.T.O.)

13. A). Represent the following statements and solve the problem using resolution proof. 10M
 S1: Everyone who loves all animals is loved by someone.
 S2: Anyone who kills an animal is loved by no one.
 S3: Jack loves all animals.
 S4: Either Jack or Curiosity killed the cat, who is named Tuna.
 S5: Did Curiosity kill the cat?

OR

13. B). Explain Semantics of Bayesian networks with example. 10M

14. A). Discuss How to solve the planning problems with state space search. 10M

OR

14. B). Discuss hierarchical planning approach with an example. 10M

15. A). How to represent conditional distributions efficiently with example. 10M

OR

15. B). Apply Inference using full joint distribution for the Figure 13.3 and find 10M
 (i) P(cavity or toothache)
 (ii) Marginal probability of Cavity
 (iii) P(cavity|toothache)
 (iv) P(no cavity|toothache)

	<i>toothache</i>		<i>¬toothache</i>	
	<i>catch</i>	<i>¬catch</i>	<i>catch</i>	<i>¬catch</i>
<i>cavity</i>	0.108	0.012	0.072	0.008
<i>¬cavity</i>	0.016	0.064	0.144	0.576

Figure 13.3 A full joint distribution for the *Toothache, Cavity, Catch* world.

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Course Code: C30162



CMR COLLEGE OF ENGINEERING & TECHNOLOGY
(UGC AUTONOMOUS)

B.Tech V Semester Regular/Supplementary Examinations December-2022

Course Name: **KNOWLEDGE MANAGEMENT**

(Common for ECE, CSE, IT & CSC)

Date: 19.12.2022 AN

Time: 3 hours

Max.Marks: 70

(Note: Assume suitable data if necessary)

PART-A

Answer all TEN questions (Compulsory)

Each question carries TWO marks.

10x2=20M

1. Define Knowledge Leverage. 2 M
2. What is Data Information? 2 M
3. What do you mean by Knowledge Management System? 2 M
4. What is Data Warehousing? 2 M
5. Write a short note on relationship with Knowledge Management to Service sector. 2 M
6. List out the challenges faced by service sector industry. 2 M
7. What is Knowledge Capital? 2 M
8. What is Physical Capital? 2 M
9. What is Business Intelligence? 2 M
10. Define Information Architecture. 2 M

PART-B

Answer the following. Each question carries TEN Marks.

5x10=50M

- 11.A). "Technological advances have greatly helped the growth of Knowledge Management, although the field has not yet reached full maturity". Elucidate the statement. 10M
- OR**
11. B). What is Knowledge Leveraging? Explain its key elements in detail. 10M
12. A). Explain the role of Information Technology in Knowledge Management Systems. 10M
- OR**
12. B). Explain the stages involved in developing Knowledge Management Systems. 10M
13. A). Explain the role of Knowledge Management in Service industry. 10M
- OR**
13. B). Explain the role of Knowledge Management in Manufacturing Industry. 10M
14. A). What is KM Process? Explain the steps involved in KM Process. 10M
- OR**
14. B). Explain any five points of difference between Knowledge Capital and Physical Capital. 10M
15. A). Discuss Roadblocks to success in relation to Knowledge Management. 10M
- OR**
15. B). Explain the 10-step process involved in KM Road Map to Amrittiwana. 10M

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Course Code: C30165



CMR COLLEGE OF ENGINEERING & TECHNOLOGY
(UGC AUTONOMOUS)

B.Tech V Semester Regular/Supplementary Examinations December-2022

Course Name: **BASICS OF INSURANCE & TAXATION**

(Common for EEE, ECE, CSE, IT & CSM)

Date: 19.12.2022 AN

Time: 3 hours

Max.Marks: 70

(Note: Assume suitable data if necessary)

PART-A

Answer all TEN questions (Compulsory)

Each question carries TWO marks.

10x2=20M

1. What are different personal general insurance products? 2 M
2. Discuss pensions and annuities. 2 M
3. Examine claim management. 2 M
4. What is third party administration? 2 M
5. Outline direct and indirect taxes. 2 M
6. Distinguish between tax planning and tax evasion. 2 M
7. What is income exempt u/s 10 of the I.T. Act? 2 M
8. What are permissible deductions under chapter VI of I.T ? 2 M
9. Define advance payment of tax. 2 M
10. What is tax collection at source? 2 M

PART-B

Answer the following. Each question carries TEN Marks.

5x10=50M

- 11.A). Explain the principles of life insurance. 10M
- OR**
11. B). Interpret clauses and covers of different personal general insurance products. 10M
12. A). Examine legal framework of claim management as well claim settlement. 10M
- OR**
12. B). Summarize re-insurance in life insurance, retention limits and methods of re-insurance. 10M
13. A). Discuss tax structure and its role in Indian economy. 10M
- OR**
13. B). Appraise fundamental principles of income tax and concepts. 10M
14. A). Examine income from business, income from house property and income from other sources. 10M
- OR**
14. B). What is income act? Explain exemptions and deductions under the income tax act. 10M
15. A). Interpret computation of income in individuals with types of assessment. 10M
- OR**
15. B). Examine filing of return, e-filing and advance payment of tax. 10M

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Course Code: C30166



CMR COLLEGE OF ENGINEERING & TECHNOLOGY
(UGC AUTONOMOUS)

B.Tech V Semester Regular Examinations December-2022

Course Name: BUSINESS ETHICS & CORPORATE GOVERNANCE
(Common for ECE, CSE, CSC & CSM)

Date: 19.12.2022 AN

Time: 3 hours

Max.Marks: 70

(Note: Assume suitable data if necessary)

PART-A

Answer all TEN questions (Compulsory)

Each question carries TWO marks.

10x2=20M

1. What is ethical behavior? 2 M
2. What is nature of ethics? 2 M
3. Who is ethical manager? 2 M
4. What is code of ethics? 2 M
5. What is software piracy? 2 M
6. What is security threat? 2 M
7. What are the obligations of the corporations to the market? 2 M
8. What are the expectations of society from a corporation? 2 M
9. What you mean by Mitigate Risk? 2 M
10. Define Corporate Governance. 2 M

PART-B

Answer the following. Each question carries TEN Marks.

5x10=50M

- 11.A). Discuss the significance of ethics in business. 10M
- OR**
11. B). Discuss various principles of ethics and its implications in the modern business world. 10M
12. A). Explain the unethical practices in Marketing. 10M
- OR**
12. B). In situations like recessions, explain the role of HR manager in terms of ethical practice. 10M
13. A). How do Criminals Plan the Attacks? Explain with examples? 10M
- OR**
13. B). Discuss about digital signatures in Cyber security. 10M
14. A). What are the various functions of the Board and CEO? 10M
- OR**
14. B). Discuss the future of Corporate Governance in India. 10M
15. A). Explain the Core Elements of the OECD Corporate Governance Principles. 10M
- OR**
15. B). Who can seek remedies against oppression and mismanagement of company? On what grounds can relief be granted in an application seeking relief? 10M

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R18

Course Code: A36761



CMR COLLEGE OF ENGINEERING & TECHNOLOGY
(UGC AUTONOMOUS)

B.Tech (Minors in DS) V Semester Regular Examinations December-2022

Course Name: DATA SCIENCE USING R

(Common for ECE, CSE, CSC & CSM)

Date: 19.12.2022 AN

Time: 3 hours

Max.Marks: 70

(Note: Assume suitable data if necessary)

PART-A

Answer all TEN questions (Compulsory)

Each question carries TWO marks.

10x2=20M

- | | |
|---|-----|
| 1. Differentiate Big Data and Data Science Hype. | 2 M |
| 2. State Statistical Inference. | 2 M |
| 3. Define symmetric attributes. | 2 M |
| 4. State and write the formula for mean and median. | 2 M |
| 5. How do you read a CSV file in R? | 2 M |
| 6. How to create an empty Data Frame in R? | 2 M |
| 7. Write an R program to display days of a week. | 2 M |
| 8. What is function scoping? | 2 M |
| 9. Write the definition of histogram. | 2 M |
| 10. Define icon-based visualization technique. | 2 M |

PART-B

Answer the following. Each question carries TEN Marks.

5x10=50M

- | | |
|---|-----|
| 11.A). i) Explain the Drew Conway's Venn diagram of data science. | 5M |
| ii) Write a R Program to Find the Sum of natural numbers. | 5M |
| OR | |
| 11. B). i) Write about data types in 'R'. | 5M |
| ii) Write about conditional statements in 'R' with example. | 5M |
| 12. A). Suppose that the data for analysis includes the attribute age. The age values for the data tuples are (in increasing order) 13, 15, 16, 16, 19, 20, 20, 21, 22, 22, 25, 25, 25, 25, 30, 33, 33, 35, 35, 35, 35, 36, 40, 45, 46, 52, 70. | 10M |
| (i) What is the mean of the data? What is the median? | |
| (ii) What is the mode of the data? Comment on the data's modality (i.e., bimodal, trimodal, etc.). | |
| (iii) What is the midrange of the data? | |
| (iv) Can you find (roughly) the first quartile (Q1) and the third quartile (Q3) of the data? | |
| (v) Give the five-number summary of the data. | |

OR

- | | |
|--|-----|
| 12. B). Write about different types of attributes with an example. | 10M |
|--|-----|

(P.T.O.)

13. A). i) Explain different ways of create an empty matrix with an example. 5M
ii) Explain with examples on vector arithmetic. 5M

OR

13. B). i) Write a R program to create a Data frame having details of 5 employees. 5M
ii) Write a command to retrieve data from 2,3,4 row from employee data frame. 5M

14. A). Explain different types of relational operators in R programming. 10M

OR

14. B). Write the different types of flow control statements in R programming. 10M

15. A). Explain attribute subset selection with a neat diagram. 10M

OR

15. B). Describe the geometric-projection visualization techniques. 10M

H.T No:

R18

Course Code: A30532



CMR COLLEGE OF ENGINEERING & TECHNOLOGY
(UGC AUTONOMOUS)

B.Tech (Honors) V Semester Regular Examinations December-2022

Course Name: **SOFTWARE PROJECT MANAGEMENT**

(Computer Science & Engineering)

Date: 19.12.2022 AN

Time: 3 hours

Max.Marks: 70

(Note: Assume suitable data if necessary)

PART-A

Answer all TEN questions (Compulsory)

Each question carries TWO marks.

10x2=20M

1. What Constitutes a Good Software Cost Estimate? 2 M
2. Compare and Contrast Commercial Components and Custom Software. 2 M
3. Define Round-trip Engineering. 2 M
4. What is a Deployment Set? 2 M
5. What is the Goal of Life Cycle Objective Milestone? 2 M
6. Define Work Breakdown Structure. 2 M
7. Define SEPA. 2 M
8. What is a Macro Process? 2 M
9. Define Earned Value. 2 M
10. What are the two modes in which metrics can be displayed? 2 M

PART-B

Answer the following. Each question carries TEN Marks.

5x10=50M

- 11.A). Explain Pragmatic Software Cost Estimation in detail. 10M
- OR**
- 11.B). Discuss in detail to Improve the Team Effectiveness and Automation in Software Environments. 10M
- 12.A). Explain Architecture View and Description with a suitable diagram. 10M
- OR**
- 12.B). Explain the workflow of Iteration. 10M
- 13.A). i) Discuss Typical Minor Milestones in the life cycle of an iteration. 5M
ii) Analyze the Periodic Status Assessments. 5M
- OR**
- 13.B). How Forward Looking and Top-Down Approach helps in Cost and Schedule Estimating the Process? Justify. 10M
- 14.A). What are the activities of Software Architecture and Development team? 10M
- OR**
- 14.B). Discuss about automation building blocks. 10M
- 15.A). i) Explain Quality indicators in detail. 5M
ii) What are the basic characteristics of a good metric? 5M
- OR**
- 15.B). Explain top ten software management principles. 10M
