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School of Computing
First CIA Examination – Feb 2025
Course Code: CSE322
Course Name: Computer Networking Principles & Components
Duration: 90 minutes Max Marks: 50

Answer all the questions **5*10 = 50 Marks**

1. Explain the core functionalities of each layer in ISO-OSI reference model with a neat diagram.
2. a) Discuss the essential features and real-world applications of different types of transmission modes. [8M]
   b) A full mesh network has 10 devices. How many links are required? [2M]
3. a) Assume we need to transmit the following 4-bit words: 1010 1101 0110 1001. Calculate checksum [4M]

   b) Four channels are multiplexed using TDM. If each channel sends 100 bytes/s and we multiplex 1 byte per channel. Show the frame traveling on the link, the size of the frame, the duration of a frame, the frame rate, and the bit rate for the link. [6M]

4. a) We have four sources, each creating 250 characters per second. If the interleaved unit is a character and 1 synchronizing bit is added to each frame, find
   i. data rate of each source,
   ii. duration of each character in each source,
   iii. frame rate,
   iv. duration of each frame,
   v. number of bits in each frame, and
   vi. data rate of the link. [6M]

b) List out the advantages and disadvantages of DSSS. [4M]

5. a) A bit stream 1101011011 is transmitted using the standard CRC method. The generator polynomial is x^4+x+1. What is the actual bit string transmitted? [5M]

b) Given 4-bit Data: D1=1, D2=0, D3=1, D4=1

Determine the parity bits (P1, P2, P3) and then construct the transmitted code. Suppose a bit error occurs, changing the code to: 1110110[D4->P1]. Detect and correct the error using Hamming Code. [5M]

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School of Computing
Third Year B.Tech CSBS
FIRST CIA Test – February 2025
Course Code: INT313
Course Name: Computer System Security
Duration: 90 minutes Max Marks: 50

Answer All Questions

PART A **10 x2 = 20 Marks**

1. Identify the following as violation of Confidentiality, Integrity or Availability
   (a) Escalation the User privilege in a Linux system.
   (b) Denial of Service attack on Database server
   (c) Unauthorized login to computer systems.
   (d) Changing Permission of files owned by other users.
2. What are the threats to Computer system security?
3. What are the different stages in the Secure system Development Lifecycle.
4. Distinguish between Trust and assurance in Computer Systems Security.
5. What is an Access Control List? How do we obtain access Control List from the Access Control Matrix?
6. When is an Information I said to have Confidentiality property with respect to users X?
7. Define Security Levels and Categories. How is the dominance relation used in the definition of the Bell Lapadula model?
8. What are the various types of Security Policies used in Computer Systems?
9. When is system defined by using states and transitions said to be secure?
10. How is read access provided in the Bell Lapadula Model?

Answer all the Questions

PART-B **3 x 10=30 Marks**

11. Provide a sequence of Commands to create an access control matrix with the following users and resources and the associated permissions:

    Users: UserA,UserB, and User C Resources:file1,program1 and process 1. UserA has read and write permission to file1 and read and execute permission to program1. UserB and UserC have read permission only to all resources. Show the access control matrix after adding these privileges.
12. When resources are classified as Top Secret, Secret, Confidential and Unclassified. Describe the Simple Security Policy and *-Property of the Bell Lapadula Model assuming security Levels and clearances. How does this model change when categories are added?
13. Assume that the Security Labels are classified with a range having a lower value and higher value. Discuss how reads and writes are to be performed in the Bell Lapadula model with an example.

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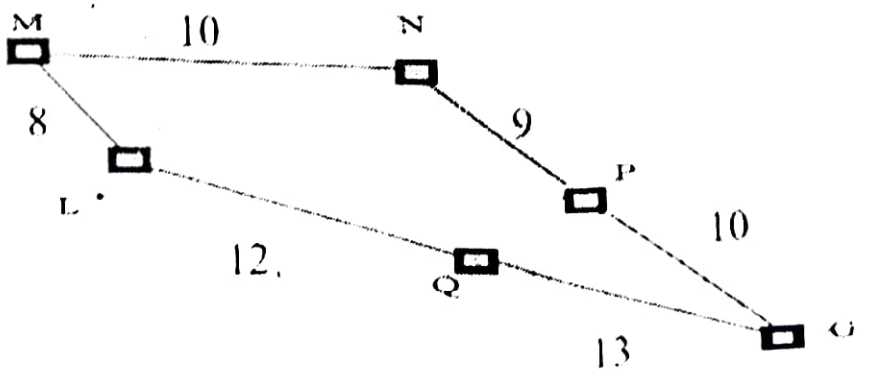
School of Computing
First CIA Exam – Feb 2025
Course Code: INT314
Course Name: Artificial Intelligence and Logical Reasoning
Duration: 90 minutes Max Marks: 50

Answer all questions **PART A** **8 x 5 = 40 Marks**

1. You are building food delivery agent within SASTRA. Discuss the type of its environments. (5)
2. You have to develop an agent to work in a blind environment, Develop the steps of Breadth First Search algorithm to give instruction to the agent to do a task. (5)
3. Assume that you are planning to build Learning agent. Discuss the components which are to be present. (5)
4. Discuss the type of environments you mentioned in question 1. (5)
5. Compare the performance metrics of all uninformed search strategies. (5)
6. Anand developed a part-picking robot to identify defective part. Identify PEAS of that agent. (5)
7. Draw the block diagram of Goal based Agent. (5)
8. Discuss how bidirectional search is better than BFS and DFS. (5)

Answer all questions **PART B** **1x 10 = 10 Marks**

9. The courier delivery bot has to travel in the given state space. The possible states and costs are given in the graph. M-Start, G-Goal. How UCS can be applied and least cost path be found? (10)



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School of Computing
First CIA Exam – Feb 2025
Course Code: COM117
Course Name: FINANCIAL & COST ACCOUNTING
Duration: 90 minutes Max Marks: 50

PART A

Answer the following questions **5x2=10**

1. Define the terms "assets" and "liabilities."
2. What are the steps in the accounting cycle?
3. Name two common methods of calculating depreciation.
4. Write the meaning of BRS.
5. Mention any two financial statements prepared by businesses.

PART B

Answer the following questions **2x12=24**

6. Explain the various concepts and conventions of GAAP.

7(a) Pass journal entries for the following transactions: (6 Marks)

Date	Particulars	Amount
6.1.2020	Ganesh started the business with cash	50,000
7.1.2020	Purchased goods from Ram	40,000
8.1.2020	Goods sold for cash	12,000
15.1.2020	Furniture purchased for cash	5,000
18.1.2020	Salary paid to manager	6,500

7 (b). Enter the following transactions in a simple cash book of Kumar

(6 marks)

Date	Particulars	Amount
2	Cash in hand	11,200
5	Received from Ramesh	300
7	Paid rent	30
8	Sold goods for cash	300
10	Paid Mohan	700
27	Purchased furniture for cash	200
30	Paid salaries	100

PART C

Answer the following questions (16 Marks)

8(a). From the following balances as on 31st December, 2020, prepare Trading and profit and loss account. (12 Marks)

Particulars	Amount	Particulars	Amount
Stock on 01.01.2017	9,000	Bad debts	1,200
Purchases	22,000	Sundry expenses	1,800
Sales	42,000	Discount allowed	1,700
Expenses on purchases	1,500	Expenses on sale	1,000
Bank charges paid	3,500	Repairs on office furniture	600

Adjustments:

i) Closing stock on, 31st December, 2020 was Rs. 4,500

ii) Manager is entitled to receive commission @ 5% of net profit after providing such commission.

8(b) How reliable are financial statements in assessing a company's financial health? (4 Marks)

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School of Computing
First CIA Exam – Feb 2025
Course Code: ENG316
Course Name:
BUSINESS COMMUNICATION & VALUE SCIENCE – IV
Duration: 90 minutes Max Marks: 50

PART A

Answer the following questions **2X10=20 MARKS**

Q1. Imagine you have been working as a Marketing Manager at a company for the past three years. Due to personal reasons, you have decided to resign from your position. You want to leave on good terms and maintain a professional relationship with your employer. Write a **formal resignation letter** to your supervisor. Remember to follow the principles of communicative writing: clarity, conciseness and a professional tone.

Q2. A company is planning to install a network of electric vehicle (EV) charging stations across the country. As the founder, draft the **Vision and Mission,** outlining the company's purpose and long-term aspirations.

PART B

Answer the following questions **2x15=30 MARKS**

Q3. A tech company is about to launch a new smartphone designed for seniors, featuring simplified interfaces, larger buttons, and health-related apps. As the CEO of the company draft **an executive summary** to present to potential investors, highlighting market opportunity, expected growth, and funding requirements.

Q4. In your sales department, an ongoing contest designed to boost numbers has resulted in increased tension among team members. Two particularly competitive employees, John and Lisa, have been at odds, each accusing the other of unfair tactics to win. Their rivalry has escalated to the point where it is affecting the atmosphere of the entire team, leading to divisions and reduced cooperation. Provide **solutions (at least TWO)** to resolve this workplace conflict.

SASTRA

School of Computing
First CIA Exam – Feb 2025
Course Code: MGT222
Course Name: Behavioral Economics
Class: III B. Tech Sem: VI
Duration: 90 minutes Max Marks: 50

PART A

Answer the following questions 10x2=20 Marks

1. What are the core differences between traditional economics and behavioral economics?
2. How does bounded rationality impact decision-making, and what does it imply for consumer behavior?
3. Define the concept of "heuristics," and how people use them in decision-making processes.
4. How does the framing effect impact decision-making and judgments?
5. How do social preferences, such as fairness and reciprocity, influence economic behavior?
6. How do behavioral economics principles apply to public policy and interventions?
7. What is the role of status quo bias in consumer decision-making?
8. How does utility relate to consumer choice theory?
9. How do psychologists measure utility in terms of subjective well-being?
10. Infer how the brain's structure influences decision-making in cognitive neuroscience.

PART B

Answer all the Questions **3x10 = 30 Marks**

11. Analyze some common experiments used in behavioral economics to study decision-making processes.
12. Examine how behavioral economics and choice theory relate to real-world issues like savings, health behavior, and consumer protection.
13. Determine how policy-makers can use utility theory to evaluate the trade-offs between environmental sustainability and economic growth.