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SAKSHI AMBAI SASTRI

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School of Computing

Third CIA Examination – Apr 2025

Course Code: CSE322

Course Name: Computer Networking
Principles & Components

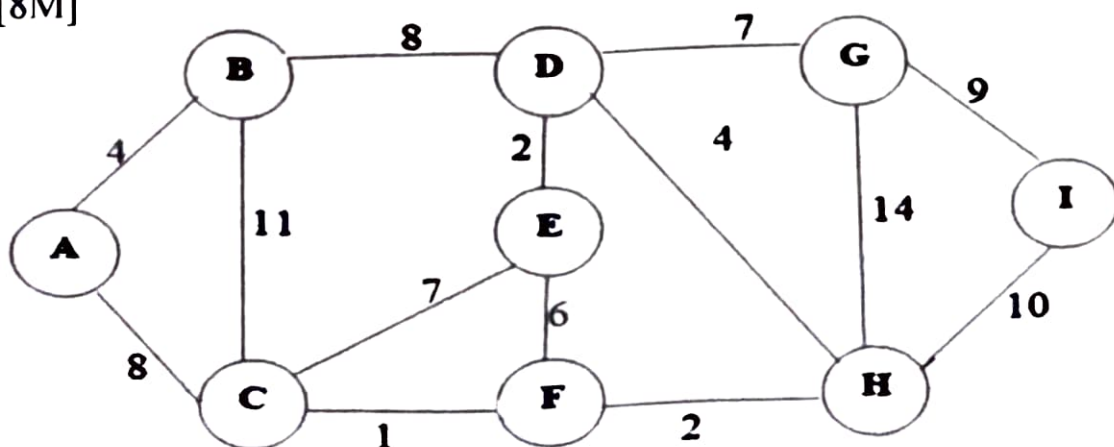
Duration: 90 minutes Max Marks: 50

PART-A

Answer any 4 questions

4*10 = 40 Marks

1. a) Suppose a TCP connection is transferring a file of 5000 bytes. The first byte is numbered 10001. What are the sequence numbers for each segment if data are sent in five segments, each carrying 1000 bytes? [2M]
b) Consider an instance of TCP's AIMD algorithm where the window size at the start of the slow start phase is 4 MSS and the threshold at the start of first transmission is 32 MSS. Assume that time out occurs during the 6th transmission and starts with 1 MSS. Find the congestion window size at the end of 9th transmission [8M]
2. a) Subnet the IP address 180.20.0.0 into 380 hosts in each subnet. Identify Class, Default Subnet Mask, Customized Subnet Mask. Also Find out the No. of possible subnets, Usable IP Range, Network Address and Broadcast Address only for first 4 subnets. [7M]
b) Write short notes on Count-to-infinity problem. [3M]
3. a) Apply Dijkstra's Routing Algorithm to find the shortest path. Assume node "A" as Root Node. Show the minimum spanning tree. [8M]



b) A packet has arrived in which the offset value is 100, the value of HLEN is 5, and the value of the total length field is 100. What are the numbers of the first byte and the last byte? [2M]

4.a) A path in a digital circuit-switched network has a data rate of 1 Mbps. The exchange of 1000 bits is required for the setup and teardown phases. The distance between two parties is 5000 km. Answer the following questions if the propagation speed is 2×10^8 m:

- i. What is the total delay if 1000 bits of data are exchanged during the data-transfer phase?
- ii. What is the total delay if 100,000 bits of data are exchanged during the data-transfer phase?
- iii. What is the total delay if 1,000,000 bits of data are exchanged during the data-transfer phase? [6M]

b) What are the propagation time and the transmission time for a 2.5KB (kilobyte) message (an email) if the bandwidth of the network is 1 Gbps? Assume that the distance between the sender and the receiver is 12,000 km and that light travels at 2.4×10^8 m/s. [4M]

5.a) There are only three active stations in a slotted Aloha network: A, B, and C. Each station generates a frame in a time slot with the corresponding probabilities $p_A = 0.2$, $p_B = 0.3$, and $p_C = 0.4$ respectively.

- i. What is the probability that any station can send a frame in the first slot?
- ii. What is the probability that station A can successfully send a frame for the first time in the second slot?
- iii. What is the probability that station C can successfully send a frame for the first time in the third slot? [6M]

b) Given the dataword 101001111 and the divisor 10111, show the generation of the CRC codeword at the sender site. [4M]

PART-B

Answer ALL questions

1*10 = 10 Marks

6.a) Discuss DNS name resolution with neat diagrams. [6M]

b) List out the components & message types of SNMP. [4M]



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School of Computing
Third Year B.Tech CSE(CSBS)
Third CIA Test-May 202

Course Code: INT 313
Course Name: Computer System Security
Duration: 90 minutes
Max Marks: 50

Answer All Questions

PART A

10 x 2 = 20 Marks

1. Briefly explain the threats to Computer System Security.
2. What is multilevel security? Explain with an example
3. Distinguish between Discretionary, Mandatory and Role Based Access Control methods
4. Compare Bell Lapadula and Biba Models based on how privileges are assigned for read and write operations.
5. Briefly explain the significance of the Lipner's Integrity Matrix model?
6. What are the international standards pertaining to Computer system Security?
7. What are the different types of malicious program that affect computer systems?
8. What is auditing? What are the components of the Audit system Structure?
9. What are the vulnerabilities present UNIX and Windows operating System?
10. What are the security goals for Data Base systems?

Answer any two Questions

PART-B

2 x 10=30 Marks

11. Explain the concepts of states and transitions by taking the access control matrix as an example. How can we secure the computer systems this concept?
12. Explain the concepts of Deterministic Noninterference and Nondeducibility by considering a two-bit machine as an example.
13. What is Computer Forensics. Describe the steps in performing Computer Forensics after an incident.

Answer the following Questions

PART-C

1 x 10=10 Marks

14. What is isolation in Computer Systems? What are the techniques for achieving isolation in computer Systems. Describe each technique in detail.

Answer ANY FOUR questions

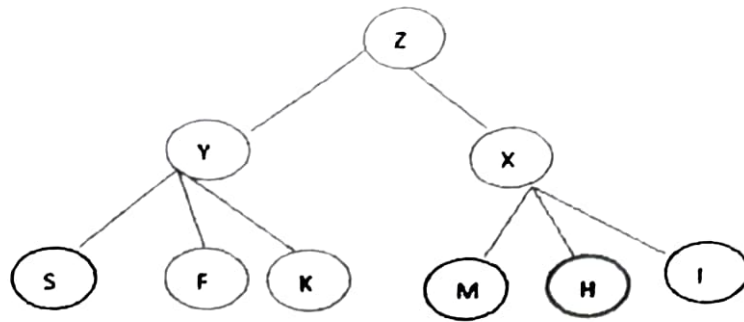
PART A

4 x 10 = 40 Marks

1. You're analyzing customer behavior to understand who is likely to buy organic food. You observe three things: Whether a person is health conscious, Whether a person buys organic food, Whether the person uses reusable bags. From the full joint probability distribution table find
- What is the probability that a customer is health conscious? (2)
 - What is the probability of reusable bags? (2)
 - What is the probability that a customer buys organic given they are health conscious? (3)
 - What is the probability that a customer is health conscious given they use a reusable bag? (3)

Health Conscious	Organic	Reusable Bag	Probability
Yes	Yes	Yes	0.20
Yes	Yes	No	0.05
Yes	No	Yes	0.10
Yes	No	No	0.05
No	Yes	Yes	0.05
No	Yes	No	0.05
No	No	Yes	0.15
No	No	No	0.35

- Illustrate Instance and ISA Relationships of FOL. (10)
- A bot is searching a spare part in the available rooms. The part is available in the bold-rounded room. Apply Depth First Search and analyze the searching process in a table using the order of fringe queue. (10)



4. a) Construct goal stack planning for the given block world example. (10)



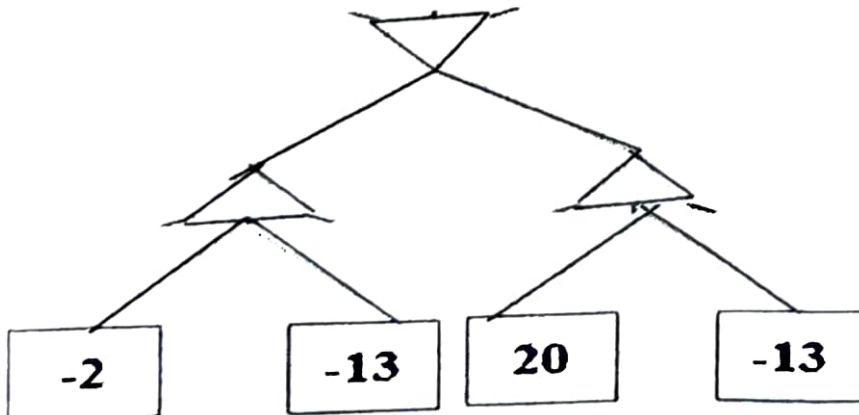
5. a) Recall Minimax algorithm. (7)
b) Recall hill climbing algorithm. (3)

Answer the question

PART B

1x 10 = 10 Marks

6. a) Recall the steps of resolution refutation proof of FOL. (5)
b) Define Modus Ponens. (3)
c) Apply Alpha beta pruning to the given tree, find alpha, beta values, root value and pruned branches. (2)





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

PART A

Answer the following questions

(5x2=10 Marks)

1. Define cost unit
2. Explain the term Accounting Packages
3. Write the meaning of Integrated report.
4. State the meaning of environmental Audit.
5. Define Marginal costing

PART B

Answer the following questions

(2x12=24 Marks)

6(a). Discuss the importance of ratio analysis in understanding and interpreting financial statements.

(OR)

6(b). Ganesh is a trader dealing in readymade garments. For the following transactions, pass journal entries for the month of April, 2024

1. Commenced business with cash ₹ 5,00,000
- 2 Purchased goods from S and Co. on credit ₹ 50,000
- 3 Cash deposited into bank ₹ 1,40,000
- 4 Bought a Land from L and Co. for cash ₹ 1,95,000
- 5 Cash withdrawn from bank for office use ₹ 15,000
- 6 Cash withdrawn from bank for personal use ₹ 14,000
- 9 Goods sold for cash ₹ 30,000
- 10 Goods purchased from Vijay ₹ 200000
12. Stationery purchased for and paid through net banking ₹ 5000
17. Dividend directly received by bank ₹20,000
- 18 Money withdrawn from ATM ₹ 30,000
- 20 Salaries paid ₹ 50,000

7(a) A company shows the following results for two periods:

Period	Sales ₹	Profit ₹
1	20,000	1,000
2	10,000	400

Compute: (i) Profit volume ratio (ii) Fixed cost (iii) BEP (iv) Profit when sales are ₹30,000

(OR)

7(b) Distinguish between financial accounting and cost accounting

PART C

Answer the following questions (16 Marks)

8(a) As an auditor, how would you assess the reliability and accuracy of financial data produced by a newly implemented ERP system? (8 Marks)

8(b) Calculate the Profitability ratios. Profit and loss a/c of X Ltd., is given below (8 Marks)

Profit and loss account

Particulars	₹	Particulars	₹
To opening stock	2,00,000	By sales	16,00,000
To purchases	12,00,000	By closing stock	3,20,000
To administration expenses	1,20,000	By Dividend	4,000
To selling expenses	80,000		
To financial expenses	40,000		
To loss on sale of assets	5,000		
To Net profit	2,79,000		
	19,24,000		19,24,000



School of Computing
III CIA Exam – MAY 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. You have been part of a volunteer group for a local community project for over a year. Recently, due to increasing personal commitments, you are no longer able to contribute the time and energy the group requires. You want to step back respectfully while showing appreciation for the experience. Write a message to the group coordinator explaining your decision. Remember to follow the principles of communicative writing: clarity, conciseness and a professional tone.

Q2. You recently worked on a group presentation for a university course. One of your teammates, Priya, took the lead in organizing the presentation structure and assigning roles. She was well-prepared, communicated clearly, and helped the group stay focused on deadlines. However, during the actual presentation, she spoke for a bit longer than the allocated time, leaving less room for others to contribute.

Using the **SBI Model (Situation–Behavior–Impact)**, provide constructive and positive feedback to Priya on her role as the team leader during the group project.

PART B

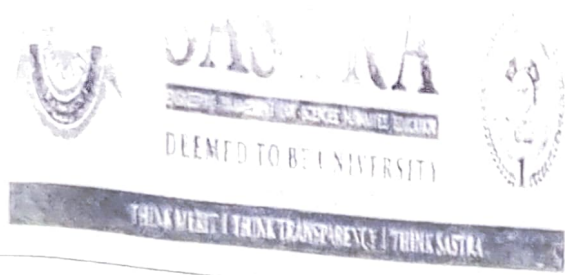
Answer the following questions

2x15=30 MARKS

Q3. A startup focused on sustainable fashion is preparing to launch a new clothing line made entirely from recycled and biodegradable materials. The brand targets environmentally conscious young adults and emphasizes ethical labor practices and transparent sourcing. As the CEO of the company, draft an executive summary to present to potential investors, highlighting the market opportunity, sustainability trends, target audience, and funding requirements.

Q4. Imagine you are a university student enrolled in multiple demanding courses this semester. You also have part-time work commitments, club meetings, and personal responsibilities. Lately, you've been feeling overwhelmed trying to keep up with assignments, study sessions, and extracurricular activities, which has started to affect your academic performance and overall well-being.

Using your knowledge of time management, suggest at least three practical strategies to help you organize your tasks, reduce stress, and maintain a healthy study-life balance.



School of Computing
Third CIA Exam - May 2025

Course Code: MGT222

Course Name: Behavioral Economics

Duration: 90 minutes Max Marks: 50

PART A

Answer the following questions

2x10=20

1. What is the role of emotions in decision-making?
2. Explain instantaneous utility.
3. What is ambiguity aversion?
4. What is fairness in economic decision-making?
5. How do heuristics influence decision-making?
6. What is prospect theory?
7. What is geometric discounting?
8. How does utility function relate to decision-making?
9. How does probability weighting affect decision-making?
10. How does behavioral economics explain consumer addiction?

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PART B

Answer any two of the following Questions

2x10 = 20

11. Explain the impact of digital platforms on irrational decision-making.
12. Examine Discount Utility model and the Standard Economic Model of decision-making.
13. Discuss ambiguity aversion. Compare and contrast it with risk aversion. Use Ellsberg's paradox to explain how real-life decisions violate the predictions of expected utility theory.

PART C

Read the case and answer the following question:

1x10 = 10

Case Study - India's Digital Health Incentive Scheme (2023-2024)

India has been grappling with a rising burden of non-communicable diseases (NCDs) such as diabetes and hypertension. Despite government campaigns and the availability of free screenings, participation in preventive health checkups remained low, especially in rural and low-income areas. The National Health Authority (NHA) and NITI Aayog collaborated with behavioral economists to explore how present bias and intertemporal choice failures affected health decisions. Most people

avoided checkups due to the perceived immediate costs (time, effort, fear) versus uncertain future benefits.

Intervention: The Digital Health Incentive Scheme (2023)

In 2023, the government launched a pilot Digital Health Incentive Scheme under the Ayushman Bharat Digital Mission (ABDM) to encourage preventive care.

Key features included:

A ₹100 digital wallet credit for every verified health checkup uploaded to the individual's ABHA (Ayushman Bharat Health Account) ID.

- Gamified elements: Users could unlock badges and levels for regular participation.
- A commitment interface allowing users to book appointments in advance and receive reminders.
- Default enrollment for public healthcare users.

(As of Jan 2024)

Over 2.5 million people participated within the first 6 months in pilot states like Maharashtra and Tamil Nadu. Participation in routine screenings increased by 38% compared to 2022 levels. Health workers reported reduced resistance to checkups due to the immediate financial reward and digital gamification. The program succeeded in addressing intertemporal choice failures where people undervalued long-term health by offering small, immediate incentives and nudging them toward better choices without mandating action. It shows how behavioral economics can improve public health outcomes in real, scalable ways

Answer the following question:

14. Explain how did present bias influence people's decisions before the scheme was introduced, and in what ways did the structure of incentives and defaults help align their short-term motivations with long-term health outcomes?
