SASTRA DEEMED UNIVERSITY

(A University under section 3 of the UGC Act, 1956)

End Semester Examinations **May 2024**

Course Code: **INT314**

Course: **ARTIFICIAL INTELLIGENCE & LOGICAL REASONING**

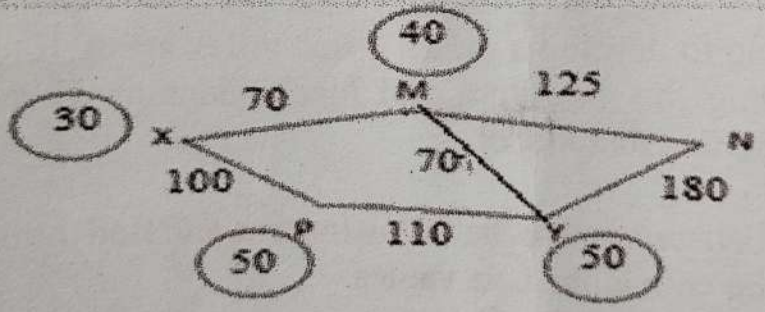
QP No. **:U032-6** Duration: **3** hours

Max. Marks:**100**

PART – A

Answer any Four questions **4 x 20 = 80 Marks**

1. Your Bot needs to reach Supermarket in a city from Bus station (X). Apply A* search to get minimal cost. Critic the process in terms of optimality achievement, admissible heuristic and others.

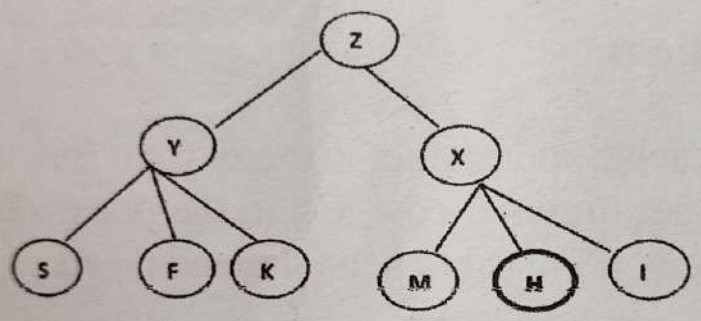


2. a) Construct full joint distribution table for the following problem. Toothache may be caused due to cavity and/or the catch which the clinician uses. The probability of having toothache i) due to cavity and catch is 0.108 ii) due to cavity, but not catch is 0.012 iii) due to catch but not cavity is 0.016 iv) without catch and cavity is 0.064. The probability of not having toothache i) due to cavity and catch is 0.072 ii) due to cavity, but not catch is 0.008 iii) due to catch but not cavity is 0.114 iv) without catch and cavity is 0.576. Calculate P(toothache), P(Cavity), P(toothache|cavity) and P(¬cavity|toothache). (10)

b) Represent the following sentence as First order logic statement
"Everyone student who is taking AI is cool"
"Alpha takes either Data_Mining or Mobile_computing"
"Mr.Max owns two cars"
"There is a mushroom that is purple and poisonous"
"There is a bunny who is a cute" (10)

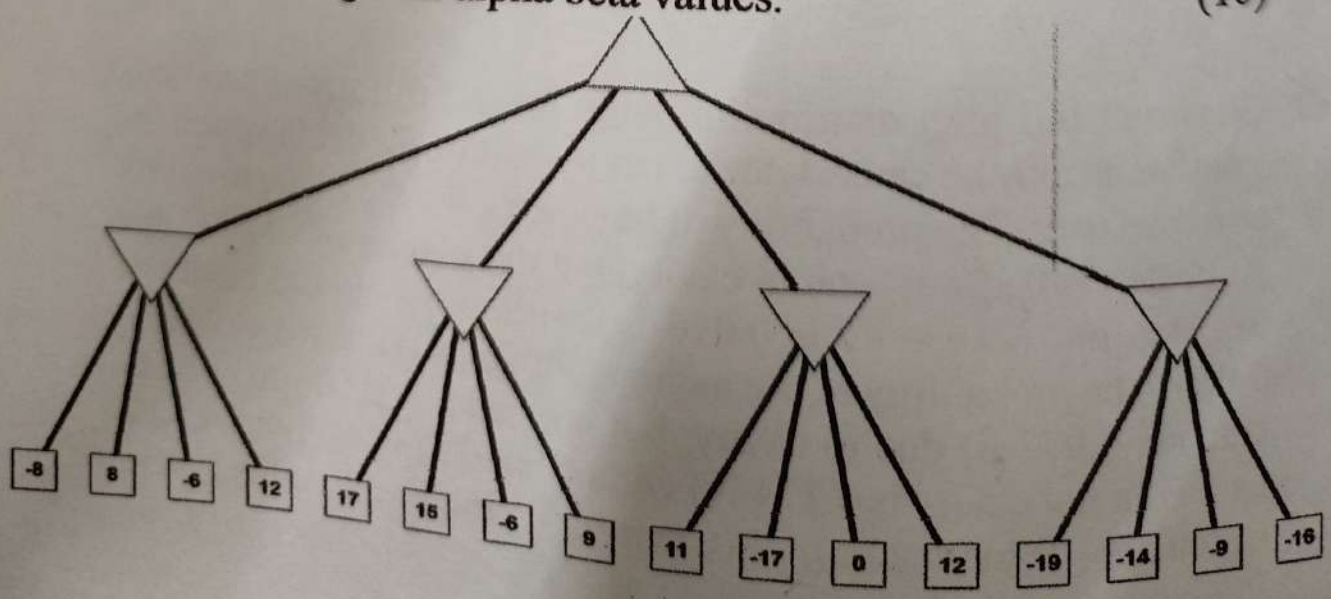
3. a) Illustrate resolution by refutation steps. (10)
b) Illustrate Forward chaining process. (10)

4. a) 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)



b) Chitty is going to develop a model based reflex agent. Help him by constructing the algorithm and block diagram. Give your reasons in building that model. (10)

5. a) Apply alpha beta pruning to the following tree and find the pruned branches along with alpha beta values. (10)



b) Dog and Cat are playing Chess game. They have decided to follow the strategy of min-max algorithm. As a friend you need to articulate the steps and the logic behind this algorithm enable them to choose the winning path. Give a part of sample tree. (10)

6. a) Illustrate the representation of instant and 'isa' relationship of FOL. (10)

b) Summarize the components of Expert Systems. (10)

PART - B

Answer the following **1 x 20 = 20 Marks**

7. a) Recall the steps of hill climbing algorithm. (5)

b) Recall the Bayes Rule and find out the probability that a patient has diseases meningitis with a stiff neck using the following information. Meningitis causes a patient to have a stiff neck, and it occurs 80% of the time. The Known probability that a patient has meningitis disease is 1/20,000. The Known probability that a patient has a stiff neck is 2.5%. (5)

c) Discuss the Action, Precondition and Effect of PDDL with example. (5)

d) Compare all the uninformed search strategies based on their performance metrics. (5)

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SASTRA DEEMED UNIVERSITY

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End Semester Examinations

May 2024

Course Code: **ENG316**

Course: **BUSINESS COMMUNICATION & VALUE SCIENCE - IV**

QP No. **:U072-6**

Duration: **3** hours

Max. Marks**:100**

PART – A

Answer all the questions in not more than 50 words each.

10 x 2 = 20 Marks

1. Explain the importance of 'Know your audience'.

2. Give the meaning for the following Business English idioms:
   a) By the book b) Between a rock and a hard place.

3. Charts and graphs are an integral part of written communication. Explain.

4. Frame sentences of your own for the following corporate terms:
   a) Deep Dive b) Blue Sky Thinking.

5. List a few Stalwarts in CSR.

6. Personal stories or anecdotes can enhance your presentation. Justify.

7. Write a note on Corporate Social Responsibility.

8. Name the "Big Two" to avoid in a workplace. Why?

9. Explain 'Diversity in corporate environments'.

10. Empathy and active listening help to resolve conflicts at work place. Explain.

PART – B

Answer all the questions in not more than 150 words each.

5 x 4 = 20 Marks

11. You are constantly bullied/ teased for your appearance/ background. How would you use EQ to overcome the situation?

12. Bring out the importance of giving and receiving feedback.

13. Discuss on Tata Group CSR.

14. List the common types of conflicts in the workplace.

15. Life stresses can also have a big impact on an individual. Discuss.

PART - C

Answer any Five questions in not more than 300 words each.

5 x 12 = 60 Marks

16. Mention any real-life scenario and discuss how applying emotional intelligence helps for resolving the same.

17. You are Adithya, a sales Manager of Jet Solutions. Write a letter to Absolute Enterprises, Mumbai introducing one of your new products or services. Be sure to give important details about your product/service.

18. You are required to address the Higher secondary students on 'Mobile Addiction'. Sketch the best practices of public speaking which you will employ.

19. Discuss the key features of corporate etiquette essential for your successful career.

20. Write a proposal to get funding to begin a start-up for providing voice-based e-mail system for the visually impaired.

21. Explain locus of control. Bring out the impact it has on individual's behaviour and performance.

22. Elaborate on the Principles you would use to make your communicative writing effective.

23. The Company you work with has recently recruited a number of staff at various levels. At every meeting, there are complaints on lack of space, overcrowding at the Canteen etc. but your Team Leader/ Manager turns a deaf ear. This increases conflict at your workplace. Elaborate on the steps to be taken for resolving the conflict.

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SASTRA DEEMED UNIVERSITY

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End Semester Examinations

May 2023

Course Code: **INT313**

Course: **COMPUTER SYSTEM SECURITY**

QP No. :**U096-6**

Duration: 3 hours

Max. Marks:**100**

PART-A

Answer all the questions **10 x 2 = 20 Marks**

1. Discuss whether the following is a violation of Confidentiality, Integrity or Availability.
   (i) An attempt to crack the password of a server using a brute-force attack.
   (ii) A normal user of a Linux system increasing his privileges to that of a root user.
   (iii) Unauthorized creation or writing of files in a directory
   (iv) Creating multiple user processes in the Computing system wasting computing resources.

2. An access Control Matrix needs to created for Subjects S_1,S_2 and S_3 and Objects O_1,O_2 and O_3. Each Subject may have privilege over other Subjects.
   Describe the structure of the Access Control Matrix clearly labelling each row and column.

3. A Role Based Access Control Model is based on Roles in an organization. What type of authentication and authorization should be used to implement access based on Roles?

4. A Mandatory Access Control Model uses the following Security levels for the documents: Top Secret, Secret, Classified and Unclassified. If the clearance level of a subject is Secret, which documents will be allowed for the subject?

5. Identify the Security Models that implement the following policies:
   (i) No read up, No write down confidentiality policy.
   (ii) Combining the Confidentiality policy and the Integrity Policy.
   (iii) Considering Conflicts of Interest classes.
   (iv) No write up, No read down Integrity Policy.

6. Consider a two-bit machine with High and Low bits. Consider two Users, User A and User B. User A observes only the High output and the User B observes only the Low output. Which of the following is non-interference Secure?
   (i) When User A's command modify the High bit only and User B's command modify the Low-bit only
   (ii) When User A's commands can modify both High and Low bits and User B can modify only the Low-bit only.

7. Consider a statement of the form $x=y+z$. What should be true about the classes y and z so information flow can take place to x?

8. Determine the type of the covert channel used in the following.
   (i) Two Processes using a shared memory to read and write data
   (ii) Two Processes using the system timer to communicate with each other.

9. What are the techniques used for intrusion detection in computer systems?

10. What are the security controls required to secure database access?

PART-B

Answer any FOUR questions **4 x 15 = 60 Marks**

11. We would like to create an access control Model which combines the properties of Mandatory Access Control and Discretionary Access Control.
The document levels are Top Secret(TS), Secret(S) and Classified(C) for Mandatory access control and owner assigned for Discretionary Access Control. Users also be assigned one Top Secret, Secret and Classified clearance level. Consider Users UserA, UserB, UserC, UserD,UserE and UserF and documents D_1,D_2,D_3 and D_4. Illustrate the access to the documents by various users. Create a procedure for allowing access to a user to a document.

12. There are three users in a computer System, User A, User B and User C. The Security categories are {CS,NS}. List the security labels corresponding to each user. The objects in the Computer System are Obj1, Obj2 and Obj3. The Security categories are {CS}. List the security labels corresponding to each user. Given the dominant relationship between the security labels, identify which user levels will be cleared for the each object type.

13. Consider a two bit machine (H,L) and two users UserA and UserB. UserA observers the High bit only while UserB observes low bit only. The Commands are Xor0 and Xor1 which operate on both bits. The initial state of the machine is (0,1). The command sequence is {UserA, Xor1}{UserA Xor0} {UserB Xor0}{UserA, Xor1}. What is the output observed by UserA and what is the output observed by UserB. Is this system non-interference Secure? If UserA can observe both the bits, is the system non-interference secure? Now. Assume that the UserA's commands affect High bit only and UserB's commands affect Low bit only. Given the same sequence of commands is the system non-interference secure?

14. Discuss the steps to be taken to implement the following in Computer systems and Networks:
(i) Network Security (ii) System Security (iii) User Security.

15. Explain the following Security measures for Programs in Computer Systems: (i) Buffer Overflows (ii) Incomplete Mediation (iii) Race Conditions (iv) Undocumented Access Point
For each type of vulnerability briefly explain the countermeasure to be taken to protect against the vulnerability.

16. Discuss the following vulnerabilities in Unix and Windows Systems:
(i) Network-facing-Daemons, Time-of-check-to-time-of-use (TOCTTOU) and Shared Resources in Unix Systems and
(ii) The Windows Registry, Administrator User, and Enabled By Default in Windows Systems.

PART-C

Answer the following **1 x 20 = 20 Marks**

17. In an Information Security Division of an e-commerce company, the following personnel are allowed access to the system Resources: Computer Programmers(P), Ordinary users(O), Customers (C) and Partnering companies(PC). The Resources given access are Web Server(WS), Database Server(DS), E-mail Server(ES) and File Server(FS). The Web Server access is to be given for all the persons while the E-mail server access is restricted to Computer Programmers and Ordinary Users. The File server access is allowed for Programmers and Ordinary Users while the database server allows access to all. Define Access Control Models Based on the Discretionary Access Control Model and the Mandatory Access Control Model where the access is created by a central authority who has access to all the resources. Implement an Access Control Matrix one for each model and define the commands to provide the accesses specified.
Assign two security levels for the subjects are HIGH and LOW and two categories EUR and US. The Security levels for Objects are HIGH and the categories are EUR and US. List the security labels for the subjects and objects including the categories and the allowed accesses between the security labels.

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End Semester Examinations

May 2024

Course Code: **INT313**

Course: **COMPUTER SYSTEM SECURITY**

QP No. **:U109-6**

Duration: **3** hours

Max. Marks**:100**

PART - A

Answer all the questions **10 x 2 = 20 Marks**

1. Discuss whether the following is a violation of Confidentiality, Integrity or Availability.
   a) Unauthorized viewing of files in another directory.
   b) Running a program for which no execute privilege is given.
   c) A user changing the permission to access a file from read to write.
   d) An e-mail is sent from a fake e-mail address.

2. What is the principle of attenuation of privilege? Explain using the copy privilege as an example.

3. What is the main principle behind the Clark-Wilson Model? For which type of applications, the Clark-Wilson Model is useful?

4. What is a Hybrid Policy? Give an example of a Hybrid Policy in Computer Systems.

5. Specify the Security Models that implement the following policies:
   a) A multilevel security policy model that emphasizes Confidentiality property
   b) A Multilevel security policy model that combines both Confidentiality property of the Bell Lapadula Model and the Integrity property of the Biba Model.

c) A model that emphasizes well-formed transactions.
d) A model that considers past history of access to the dataset.

6. Explain the following Design Principles: (a) Economy of mechanism (b) Separation of Privilege (c) Fail-safe Defaults and (d) Complete Mediation.

7. Consider the following statements and determine the direction of information flow: (a) *If* y=0, *then* x=1 *else* x=0. (b) x=y+z.

8. What is the need for isolation of processes? What methods are used for isolation in computer systems?

9. Explain the following with respect to Program Security: (a) Input Validation (b) Bounds Checking (c) Type Checking and (d) Error Checking.

10. List and Briefly explain the activities involved in Digital Forensics.

PART – B

Answer any FOUR questions **4 x 15 = 60 Marks**

11. Consider the following resources: File1, File2, Process1 and Process 2. Three users are to be assigned access to the resources based on the following criteria. User1 gets read access to File1 and File2 and execute access to Process1. User2 has write access to File2 and execute access to Process2. User3 has read and write access to both File1 and File2 but no execute privileges to Process1 and Process2. List all the commands for the creation of the access control matrix and entering the privileges. Show the final access control matrix.

12. A multilevel Security policy is created using the security levels: Top Secret and Secret. The categories are {EUR,US} List the security labels created by combining the security levels and the categories. Indicate for which pair of the security labels the dominance relation holds.

Create a confidentiality policy using Bell Lapadula Model assuming that there are users having all the possible labels and describe the read and write access. Create an Integrity Policy using Biba Model assuming that there are users having all the possible labels and describe the read, write and execute access for the users.

13. Consider the following requirements for developing software in a software division of a company, the users are divided into Software Developers, Production System Operators, and Auditors and Managers. There are development workstations, Production systems and software tools. The developers have access to the Development workstations and tools but not the Production system. The production system operators have access to the development workstations and the Production systems. The Auditors and Managers have access to all the three types of systems. Create a multilevel policy model that meets the above requirements and verify that the assignment of security levels and integrity levels do not change any of the requirements.

14. Consider a two bit machine (HIGH, LOW) and two users UserA and UserB. UserA observers the High bit only while UserB observes low bit only. The Commands are Xor0 and Xor1 which operate on both bits. The initial state of the machine is (0,1). The command sequence is {UserA, Xor1}{UserA Xor0} {UserB Xor0}{UserA, Xor1}. What is the output observed by UserA and what is the output observed by UserB. Is this system non-interference Secure? Explain.

15. Discuss the issues in administering security in the DMZ Web Server and outline the solutions for the issues.

16. Discuss the following vulnerabilities in Unix Systems:
    a) Rootkits,
    b) Environmental Variables
    c) Shared Resources
    d) Time-of-Check-to-Time-of-Use (TTCTTOC) in Unix Systems.

PART - C

Answer the following **1 x 20 = 20 Marks**

17. The computer system environment of an organization consists of large number of Computer systems that are used by different kinds of users. There are users who are employees of the organization who can be trusted to follow the security policies of the organization. The computer center also allows users who are customers who may not be trusted to follow or may not be aware of the security policies of the organization. The Computer Systems are located in different buildings and are networked by using a Local Area Network. A centralized connection to the Internet service which all the users access to the Internet Service in the computer Systems connected by the Local Area Network. Create a Security Policy to protect the computer systems data and programs from confidently, integrity and availability threats. In particular the following components are required:

a) A Central server authenticates every user who logs into any of the Computer System. The resources each user can access is specified in the access control database and the type of access allowed for each user.

b) It is required to check the logs of the Computer systems and detect policy violations regarding access to systems and the data contained in those systems.

c) The internet connection to the organization network as well as the individual systems need to be checked for Malicious Code.

d) To ensure high availability, the systems should be checked periodically for excessive use causing denial of service to the servers and the local area network.

Discuss how your system meets the Secure Systems Development Life Cycle for Computer system Security.

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SASTRA DEEMED UNIVERSITY

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End Semester Examinations

May 2023

Course Code: **CSE322**

Course: **COMPUTER NETWORKING PRINCIPLES & COMPONENTS**

QP No. :**U092-6**

Duration: **3** hours

Max. Marks:**100**

PART- A

Answer all the questions **10 x 2 = 20 Marks**

1. Assume that a voice channel occupies a bandwidth of 4 kHz. We need to multiplex 10 voice channels with guard bands of 500 Hz using FDM. Calculate the required bandwidth.

2. A file contains 2 million bytes. How long does it take to download this file using 1-Mbps channel?

3. ALOHA network are a maximum of 600 km apart. If we assume that signals propagate at 3×10^8 m/s, Compute T_B if K=1;

4. Elucidate hidden station problem and exposed station problem in WiFi networks.

5. Differentiate forwarding with routing?

6. Determine which of the following is an FQDN and which is a PQDN. a. mil. b. edu. c. xxx.yyy.net d. zzz.yyy.xxx.edu

7. Differentiate POP3 with IMAP4 protocols

8. Show the sequence of bits sent from a client TELNET for the binary transmission of11110011 00111100 11111111.

9. Choose the appropriate definition for message confidentiality
   a) It means that the sender and the receiver expect privacy.
   b) It means that the data must arrive at the receiver exactly as sent.
   c) It means that the receiver is ensured that the message is coming from the intended sender, not an imposter.
   d) It means that a sender must not be able to deny sending a message that he sent.

10. Differentiate symmetric cryptosystem with asymmetric cryptosystem.

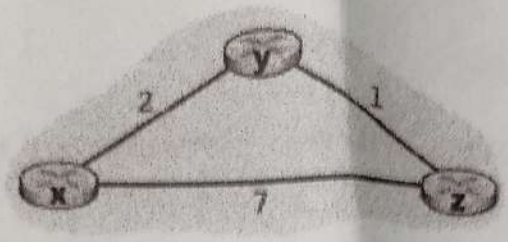
PART- B

Answer any FOUR questions **4 x 15 = 60 Marks**

11. Suppose the information content of a packet is the bit pattern 1110 0110 1001 1101 and an even parity scheme is being used.
   a) Show that two-dimensional parity checks can correct and detect a single bit error. Show a double-bit error that can be detected but not corrected. (5)
   b) Consider the 7-bit generator, G=10011, and suppose that data bits has the value 1010101010. What is the value of check-summed frame? (5)
   c) Suppose that Databits has the value 1010101010, compute check-summed frame using hamming code. (5)

12. Consider CDMA with three users (A, B, and C) with their chip sequences as (1 1 1 1 1 1 1 1), (1 -1 1 -1 1 -1 1 -1), (1 1 1 1 -1 -1 -1 -1).
   a) Compute the combined signal if A transmits '0', B transmits '1' and C transmits '0'. (4)
   b) Extract each user's data properly from the combined signal. (4)
   c) Prove that chip sequences are orthogonal. (4)
   d) Draw the sketch of spread-spectrum of the above transmission. (3)

13. Consider the given network topology



a) Construct the distance vector computed by each router in each iteration. Show the convergence state. (5)

b) Suppose in the given topology, link from x-y broken, show the issue of Count-to-Infinity problem. (5)

c) Derive the solution for the Count-to-Infinity based on Reverse-poisoning. (5)

14. a) Describe the steps performed by the resolver to identify the IP address of the query www.sastra.edu by recursive resolution and iterative resolution. Criticize the impact of both. (7)

b) Justify the need of DNS cache. (4)

c) Elucidate the format of DNS query and response message. (4)

15. a) Justify the demand of GET and POST method in HTTP with proper sequence diagram with HTTP request and response messages. (7)

b) Criticize the impact of persistent and non-persistent HTTP connections for the exchange of HTTP objects. (8)

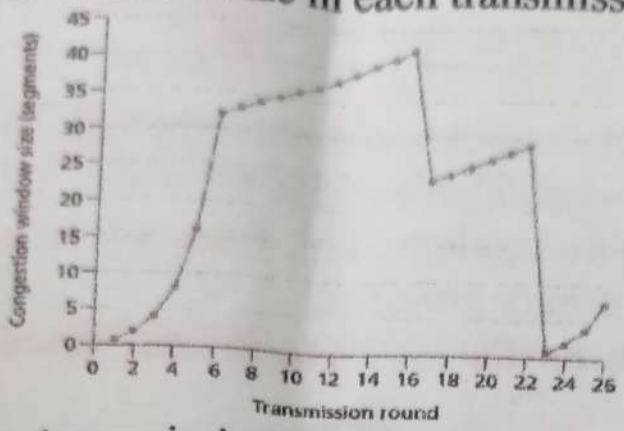
16. a) Encrypt the message "THIS IS AN EXERCISE" using a shift cipher with a key of 20. Ignore the space between words. Decrypt the message to get the original plaintext. (5)

b) Using e = 13 and n = 77 in the RSA algorithm, encrypt the message "FINE" using the values of 00 to 25 for letters A to Z. Decrypt to recover the plain message by computing private key d. (10)

PART- C

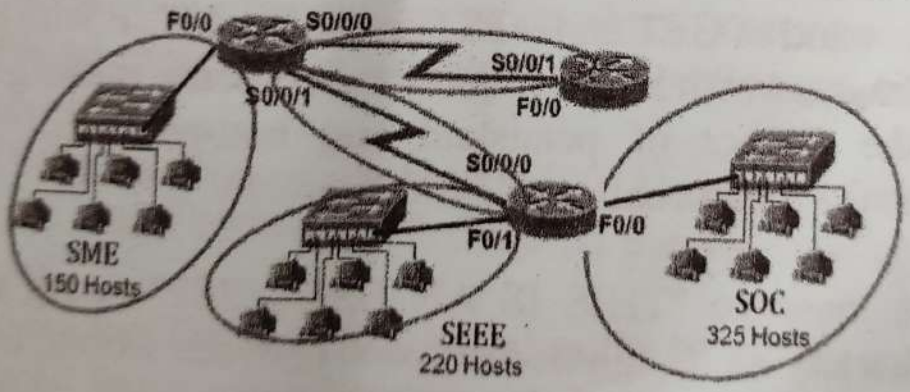
Answer the following **1 x 20 = 20 Marks**

17. a) Consider TCP window size in each transmission in the figure.



Identify the transmission round at which slow start, additive increase and multiplicative decrease happened. Criticize the impact of congestion detection and avoidance. (10)

b) Based on the information displayed in Figure, design a network addressing scheme that will supply the minimum number of subnets and allow enough extra subnets and hosts for 70% growth in all areas. The IP address provided by the ISP is 135.126.0.0.



i. Find the custom subnet mask, minimum number of subnets, total number of subnets, number of host addresses in the largest subnet and total number of addresses needed for the largest subnet. (3)

ii. With 70% growth, what will be the extra subnets required and number of addresses needed in the largest subnet. (3)

iii. Find the IP address range for the following: i.SOC ii.SEEE iii.SME iv.From Router A to Router B v.From Router A to Router C. (4)

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SASTRA DEEMED UNIVERSITY

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End Semester Examinations

May 2024

Course Code: **CSE322**

Course: **COMPUTER NETWORKING PRINCIPLES & COMPONENTS**

QP No. **:U105-6**

Duration: **3** hours

Max. Marks**:100**

PART - A

Answer all the questions **10 x 2 = 20 Marks**

1. Write the formulas for the transmission time and propagation time in the network layer.
2. Compare and contrast half duplex, full duplex.
3. Let us assume even parity hamming code **(111001101)** is transmitted and the received code is **(110001101).** Detect and correct the error.
4. State the limitations of ALOHA protocol.
5. Give your idea about CSMA.
6. Examine the benefits of IPv6 over IPv4.
7. Recognize the six flags within the TCP header and state the purpose of each flag.
8. Provide the significant role played by DNS.

9. How is HTTP related to www?

10. Identify the elements being defined in a URL.

PART - B

Answer any FOUR questions **4 x 15 = 60 Marks**

11. a) Determine the various topologies and cite the advantages & disadvantages of each type with suitable diagram. Further describe with proper justification which topology is the most fault tolerant if a link failure occurs.

b) **Assess the scenario:** Two Channels, one with a bit rate of 190Kbps and another with a bit rate 180 Kbps are to be multiplexed using pulse stuffing TDM with no synchronization bits. Answer the following.

i) What is the size of the frame in bits?

ii) What is the frame rate?

iii) What is the duration of a frame?

iv) What is the data rate?

12. a) For a noisy communication link implementing the sliding window ARQ (Automatic Repeat Request) protocol, the transmitter and receiver window size are X and Y respectively. What should be the minimum number of distinct sequence number to ensure correct operation of the ARQ scheme? Report your answer as a function of X and Y. Justify your answer through an illustration of the sliding window ARQ. (10)

b) If the bandwidth of the line is 1.5 Mbps, RTT is 45 msec and packet size is 1 KB, then find the link utilization in stop and wait. (5)

13. Prioritize the class of each IP. Give suitable explanations.

a) 227.12.14.87 b) 193.14.56.22

c) 14.23.120.8 d) 252.5.15.111

e) 134.11.78.56

14. a) Sketch TCP segment structure and briefly explain all the fields in the format. (10)

b) Preferability is given to one over the other (TCP/UDP)
i) Streaming a live video over the internet.
ii) Transfer of banking credentials. (5)

15. Discuss how electronic mail application is implemented in a network and analyse the protocols used.

16. a) Acquire information about the Domain Name Service (DNS) protocol with an example. (10)

b) Highlight the difference between FTP and HTTP. (5)

PART – C

Answer the following **1 x 20 = 20 Marks**

17. a) A student attaches a laptop to campus network and request/receives a web page from www.sastra.edu. Analysis the sequence of operations carried out with the help of different protocols used in application, transport, network & link layers. (12)

b) Assume the message $M(x) = X^{14}+X^{12}+X^{8}+X^{7}+X^{5}+X^{3}+X^{2}+X$ and the generator polynomial is $G(x) = X^{5}+X^{4}+X^{2}+1$ and explain how error detection and validation is carried out. (8)

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SASTRA DEEMED UNIVERSITY

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End Semester Examinations

May 2023

Course Code: **COM117**

Course: **FINANCIAL & COST ACCOUNTING**

QP No. :**U180-6**

Duration: **3** hours

Max. Marks:**100**

PART – A

Answer all the questions **10 x 2 = 20 Marks**

1. Define the term Accounting.
2. The proprietor's investment is Rs.30,00,000 and the liability is Rs.10,00,000. Find out the total assets of the business.
3. Classify and present the different forms of ratios.
4. Calculate Return on Investments (ROI) when the Operating Profit Rs.1,50,000; Capital Employed Rs.12,00,000; Tax Rs.50,000.
5. What are the different methods of depreciating the assets?
6. Sales is Rs.5,00,000; Variable Cost Rs.3,00,000; Fixed Cost Rs.1,00,000. Calculate Profit Volume Ratio.
7. Draw the format of Cash Budget.
8. What is gross working capital?
9. Find out the value of Prime Cost, when the Direct Materials Rs.40,000; Direct Wages Rs.10,000 and Factory Overheads Rs.10,000.

10. State any two reasons for preparing bank reconciliation statement.

PART – B

Answer all the questions **4 x 15 = 60 Marks**

11. From the following transactions held during the month of March 2022, pass journal and post them into ledger accounts:

Mar 1	Paid rent	Rs. 600
2	Paid cash for office stationery	Rs. 60
8	Purchased office equipment	Rs. 10,000
13	Paid advertisement	Rs. 600
15	Received cash from Kumar	Rs. 8,000
18	Paid Maran	Rs. 4,000
25	Withdraw cash for personal use	Rs. 2,000
29	Paid telephone bill	Rs. 600
30	Fee earned and billed to customer	Rs. 20,000
31	Paid for repairs to typewriter	Rs. 300
31	Paid electricity bill	Rs. 400

(OR)

12. Prepare Trial balance as at 31.12.2021 from the following balances extracted from Mr. Kanaga Subramaniam Trader:

Details	Rs.	Details	Rs.
Purchases	1,75,000	Stock (1.1.2021)	30,000
Discount received	1, 000	Capital	50,000
Discount allowed	950	Furniture	13,000
Repairs	1,000	Sundry Creditors	15,000
Sales	2,35,350	Printing Charges	1,200
Factory rent	2,500	Coal	1,600
Sundry expenses	1,000	Bank loan	20,000
Bills receivable	12,500	Freight	3,500
Carriage outwards	1,500	Income tax	9,500
Insurance	600	Machinery	65,000
Bills payable	1,700	Reserve fund	600
Drawings	4,800		

13. Prepare a schedule of changes in working capital and interpret the results for the following Balance Sheets of Ms.Narasus Ltd.:

Assets	2022 Rs.	2023 Rs.
Bank	15,380	26,020
Debtors	11,260	11,210
Stock	56,160	50,460
Fixed Assets	2,17,200	2,19,810
Total Assets	3,00,000	3,07,500
Liabilities	2022 Rs.	2023 Rs.
Creditors	20,000	16,500
Bills Payable	12,750	6,500
Debentures	1,00,000	1,00,000
Reserves	67,250	84,500
Paid up capital	1,00,000	1,00,000
Total Liabilities	3,00,000	3,07,500

(OR)

14. List out and explain all the accounting principles with suitable examples.

15. A factory produces 100 units of a commodity in the month of September 2022. The cost and profit details are as follows:

Details	Rs.	Details	%
Direct Materials	1,000	Factory overheads	125% on wages
Direct Wages	500	Office overheads	20% on works cost
Direct Expenses	100	Profit	25% on sales

Prepare a quotation for 40 units and find out the quotation price.

(OR)

16. (a) Rephrase the following statement as Marginal Cost Statement with break-ups:

Year	Sales	Cost
2021	Rs.5,00,000	Rs.4,00,000
2022	Rs.7,00,000	Rs.5,00,000

(b) Compute the following (i) Profit Volume Ratio; (ii) Break Even Point; (iii) Sales when the profit is expected to be Rs.10,00,000; and (iv) Profit when the sales is targeted as Rs.15,00,000.

17. The following is the cost structure of Chandran Ltd:

Details	Level of activity		
	60%	70%	80%
Output (in units)	2400	2800	3200
Costs	Rs.	Rs.	Rs.
Materials	48,000	56,000	64,000
Wages	14,400	16,800	19,200
Factory overheads	25,600	27,200	28,800
Factory cost	88,000	1,00,000	1,12,000

The factory is considering an increase of production to 90% level of activity. No increase in fixed overheads is expected at this level. The management requires a statement showing all details of factory cost at 90% level of activity.

(OR)

18. Differentiate Cash Flow Analysis and Fund Flow Analysis.

PART – C

Answer the following **1 x 20 = 20 Marks**

19. The following is the Balance Sheet of Salman Industries Limited for the year ended 31.12.2020:

Liabilities	Rs.	Assets	Rs.
Share Capital	1,00,000	Goodwill	60,000
Reserves	20,000	Plant	1,40,000
Profit & Loss A/c	30,000	Stock	30,000
Loan	80,000	Debtors	30,000
Creditors	50,000	Bills Receivable	10,000
Outstanding expenses	20,000	Cash	30,000

Liabilities	Rs.	Assets	Rs.
Total	3,00,000	Total	3,00,000

Other details are: Total sales Rs. 12,00,000; Total Purchases Rs.10,00,000; Gross Profit Rs.68,000 and Net Profit Rs.30,000.

Comment on: (i) The liquidity and solvency positions of the company; and (ii) The activity (turn over) and profitability status of the company.

**

SASTRA DEEMED UNIVERSITY

(A University under section 3 of the UGC Act, 1956)

End Semester Examinations

May 2024

Course Code: **COM117**

Course: **FINANCIAL & COST ACCOUNTING**

QP No. **:U202-6**

Duration: **3** hours

Max. Marks:**100**

PART – A

Answer all the questions **10 x 2 = 20 Marks**

1. Define Accounting.
2. What is Journal?
3. Write a note on compensating errors.
4. List any three causes for Depreciation.
5. What are the elements of cost?
6. Write a note on EOQ.
7. What is Batch Costing?
8. What is Profit Volume Ratio?
9. Write a note on integrated reporting.
10. Expand IFRS and GAAP.

PART – B

Answer all the questions **4 x 15 = 60 Marks**

11. On comparing the Cash Book of Mr Tulsian with the Bank Pass Book, the following discrepancies were noted:
   (a) Out of ₹ 20,500 paid in cash and by cheques into the bank on 27th March, cheque amounting to ₹ 7,500 were collected on 7th April.
   (b) Cheque and cash amounting to ₹ 4,800 were deposited in bank on 26th March but credit was given for ₹ 3,800 only.
   (c) Out of cheques amounting to ₹ 7,800 drawn on 26th March a cheque for ₹ 2,500 was encashed on 3rd April.
   (d) Cheques issued to creditor amounting to ₹ 20,000 on 25th March of which cheques worth ₹3,000 were presented to bank up to 31st March.
   (e) A cheque for ₹ 1,000 entered in Cash Book but omitted to be banked on 31st March.
   (f) A cheque for ₹ 600 deposited into bank but omitted to be recorded in Cash Book and was collected by the bank on 30th March.
   (g) A bill receivable for ₹ 520 previously discounted (Discount ₹ 20) with the bank had been dishonoured but advice was received on 1st April.
   (h) A bill for ₹ 10,000 was retired/paid by the bank under a rebate of ₹ 150 but the full amount of the bill was credited in the bank column of the Cash Book.
   (i) A cheque of ₹ 1,080 credited in the Pass Book on March 28 being dishonoured is debited again in the Pass Book on 1st April. There was no entry in the Cash Book about the dishonour of the cheque until 15th April.
   (j) A cheque of ₹ 200 drawn on his Saving Deposit Account has been shown as drawn on Current Account in Cash Book.

   Required: Prepare a Bank Reconciliation Statement as at 31st March. If the Balance as per Cash Book on 31st March was ₹ 39,570.

(OR)

12. From the following Balances of M/s Pawan sales on 31/3/2024, prepare Trading A/c. Profit & Loss A/c and a Balance Sheet as on that date.

Particulars	Amount (₹)	Particulars	Amount (₹)
Drawings	8,000	Sales	2,58,000
Capital	48,000	Return Inwards	2,000
Sundry Creditors	80,000	Return outwards	2,200
Sundry Debtors	1,26,000	Office Salaries	18,000
Bills Receivable	10,000	Wages	8,000
Opening Stock	90,000	Commission	9,000
Furniture	13,000	Trade Expenses	5,000
Cash in Hand	2,000	Rent	4,400
Machinery	24,800	Discount Received	8,000
Bank Overdraft	10,000	Bills Payable	14,000
Purchases	1,00,000		

The Closing Stock on 31.3.2024 was ₹ 1,04,000.

13. From the following information prepare a cost sheet for the month of December 2023.

- Stock on hand – 1st Dec 2023 Raw Materials: ₹ 25,000; Finished Goods ₹ 17,300
- Stock on hand -31st Dec 2023 - Raw materials: ₹ 26,200; Finished Goods ₹ 15,700.
- Purchase of raw material -₹ 21,900
- Carriage on purchases - ₹ 1,100
- Work in Progress (1.12.23) at works cost – ₹ 8,200
- Work in Progress (31.12.23) at works cost - ₹ 9,100
- Sale of Finished Goods -₹ 72,300
- Direct Wages- ₹ 17,200
- Non-Productive wages – ₹ 800
- Direct Expenses - ₹ 1,200
- Factory Overhead - ₹ 8,300
- Administrative overhead - ₹ 3,200
- Selling and Distribution overhead -₹ 4,200

(OR)

14. Draw a Stores ledger card recording the following transactions under FIFO Method.

2023 July, 1 Opening Stock 2,000 unit at ₹ 10 each

5 Received 1000 units at ₹ 11 each
6 Issued 500 Units
10 Received 5000 units at ₹ 12 each
12 Received back 50 Units out of the issue made 6th July.
14 Issued 600 units
18 Returned to supplier 100 units out of goods received on 5th
19 Received back 100 units out of the issue made on 14th July
20 Issued 150 Units
25 Received 500 Units at ₹ 14 each
28 Issued 300 Units.

The stock verification report reveals that there was a shortage of 10 units on 18th July and another shortage of 15 units on 26th July.

15. From the following information relating to Quick Standards Ltd., you are required to find out (a) P.V Ratio (b) Break Even Point (c) Profit (d) Margin of Safety and also calculate (e) Volume of sales to earn profit of ₹ 6000.

Total Fixed Costs - ₹ 4500
Total Variable cost - ₹ 7500
Total Sales - ₹15,000

(OR)

16. From the particulars given below prepare a cash budget for the month of June 2023.

(a) Expected sales -₹ 2,00,000; May -₹ 2,20,000; June -₹ 1,90,000
Credit allowed to customers is two months and 50% of the sales of every month is on cash basis.
(b) Estimated Purchases: May -₹ 1,20,000; June - ₹ 1,10,000
40% of the purchase of every month is on cash basis and the balance is payable next month.
(c) ₹ 2,000 is payable as rent every month.
(d) Time lag in payment of overhead is ½ month
Overhead: may- ₹ 12,000; June -₹11,000
(e) Depreciation for the year is ₹ 12,000
(f) Interest receivable on investment during June and December ₹ 3,000 each.
(g) Estimated cash balance as on 1st June 2023 is ₹ 42,500.

17. Explain the similarities of GAAP, Ind AS and IFRS.

(OR)

18. What is XBRL? and explain the advantages of XBRL Reporting.

PART - C

Answer the following **1 x 20 = 20 Marks**

19. (a) Journalize the following transactions.

Purchase goods for cash ₹ 10,000
Purchased Stationery for cash ₹ 500
Sold goods for cash ₹ 8,000
Paid rent to Krishnan, the landlord ₹ 800
Paid Lokesh, the manager his salary of ₹ 3,000
Paid freight on goods purchased ₹ 300
Paid freight on machine purchased ₹ 400
Received ₹ 7000 from Kamal as loan @5% interest. (7)

(b) From the following information calculate.

(i) EOQ (ii) Reorder level
(iii) Maximum Level (iv) Minimum Level.

Normal usage 150 units per day. Minimum usage 100 units per day. Maximum usage 200 units per day. Reorder period 50 to 60 days. The annual usage is 50,000 units. The cost of purchase is ₹ 100 per order. Cost per unit is Re. 1.00 carrying cost is 10% per annum. (5)

(c) The expenses for budgeted production of 10000 units in a factory are furnished below.

Particulars	Per Unit
Material	70
Labour	25
Variables Overhead	20
Fixed overhead (₹ 1,00,000)	10
Variable overhead (Direct)	5
Selling expenses (10 % Fixed)	13
Distribution Expenses (20% Fixed)	7

Administration expenses	5
Total Cost per unit	155

Prepare a budget for production of: 8000 units; 6000 units; indicate cost per unit at the both levels.

Assume that administration expenses are fixed for all levels of production. (8)

**