SL.NO:2260 **SUBJECT CODE:45121C01**

VINAYAKA MISSIONS RESEARCH FOUNDATION
(Deemed to be University)
M.E./ M.TECH DEGREE EXAMINATIONS- APRIL -2022
COMPUTER SCIENCE AND ENGINEERING
FIRST SEMESTER
COMPUTER NETWORKS AND MANAGEMENT

(Candidates admitted under 2021 Regulations-SCBCS)

Time : Three Hours Maximum Marks:100 Marks

Answer **ALL** questions

Part-A (10 x 2 =20 Marks)

1	What is the need for Call processor?
2	Draw the diagram for multiple-single server queue.
3	What is meant by constant bit rate (CBR)?
4	What are the properties of switching?
5	What are the two algorithms to build merging networks?
6	What are the classes in IP addressing?
7	What is mean by Peer model?
8	What is mean by LAN and WAN switching?
9	What is the cost index of a Cross bar network?
10	What is mean by Partial connection?

Answer **Any FIVE** questions

Part-B (5 x10 =50 Marks)

11 a. Explain applications of ATM in detail

OR

b. Explain in detail about congestion control in packet switching networks.

12 a. Explain in detail how to build a Traffic Management system.

OR

b. Explain in detail how to build a ABR traffic management.

13 a. Write about ABR Capacity Allocation.

OR

b. Summarize the characteristics of RSVP?

14 a. Describe about ATM Logical connections

OR

b. Explain in detail about Packet switching.

(P.T.O)

15 a. Explain in detail about multiserver queue.

OR

b. Explain in detail about Congestion Avoidance with Explicit Signaling.

16 a. Explain in detail about Traffic management framework.

OR

b. Describe in detail about ISA Components.

17 a. Explain in detail about DS Configuration and Operation.

OR

b. Explain in detail about RED Algorithm.

18 a. Describe in detail about RSVP Operation.

OR

b. Discuss in detail about RTP Data Transfer protocol.

Answer ALL questions

PART-C (2 x 15 = 30)

19 a. Draw and explain RSVP Host Model?

OR

b. Draw and explain in detail about ATM protocol Architecture.

20 a. Explain the types of ATM protocol stack.

OR

b. Explain the packet types of RFC 1889.

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SL.NO:2260

SL.NO:2267 **SUBJECT CODE:45121C02**

VINAYAKA MISSIONS RESEARCH FOUNDATION
(Deemed to be University)
M.E./ M.TECH DEGREE EXAMINATIONS- APRIL -2022
COMPUTER SCIENCE AND ENGINEERING
FIRST SEMESTER
OBJECT ORIENTED SOFTWARE ENGINEERING

(candidates admitted under 2021 Regulations)

Time : Three Hours Maximum Marks:100 Marks

Answer **ALL** questions

Part-A (10 x 2 =20 Marks)

1 Distinguish functional and non functional requirements.
2 What are the activities addressed for organizational and communication structure?
3 Define the term Greenfield engineering.
4 What is CRC Card?
5 List out the options available for storage management.
6 What is peer-peer architectural style?
7 What are the main roles involved in reuse?
8 Define mapping association and buried association.
9 What are the main roles in rationale model maintenance?
10 Define promotions and releases.

Answer **Any FIVE** questions

Part-B (5 x10 =50 Marks)

11 a. What are the types of roles found in a software engineering project? Explain.

OR

b. Discuss in detail about unplanned communication and its events.

12 a. Explain about the requirements elicitation activities.

OR

b. Discuss the issues related to managing the analysis activities in a multi-team development project.

13 a. What is coupling and cohesion in system design? Describe in detail.

OR

b. How communication is difficult in system design? Explain.

14 a. Explain how encapsulation modularization and polymorphism can improve the reusability.

(P.T.O)

OR

b. Draw a class diagram representing the application domain facts below, and map it to a relational schema.
A.A project involves a number of participants.
B.Participants can take part in a project either as project manager, team leader or developer.

15 a. Describe the issues related to managing rationale activities.

OR

b. Explain why the role of software product and project leader be assigned to different people.

16 a. What is configuration management? Explain the issues.

OR

b. Write a brief note on version identification schemes.

17 a. Describe the asynchronous mechanisms of communications.

OR

b. Explain the analysis management activities in a multi-team development project.

18 a. Describe various architectural styles in detail.

OR

b. Why unit testing is important in software project? Explain

Answer ALL questions

PART-C (2 x 15 = 30)

19 a. Explain the concepts of UML with necessary example.

OR

b. Compare frameworks class libraries, design pattern and components.

20 a. Briefly explain the organizational activities of a project.

OR

b. How do you identify the relationship among actors and use case. Explain.

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SL.NO:2273 **SUBJECT CODE:45121C03**

VINAYAKA MISSIONS RESEARCH FOUNDATION
(Deemed to be University)
M.E./ M.TECH DEGREE EXAMINATIONS- APRIL -2022
COMPUTER SCIENCE AND ENGINEERING
FIRST SEMESTER
COMPUTER ARCHITECTURE

(Candidates admitted under 2021 Regulations-SCBCS)

Time : Three Hours Maximum Marks:100 Marks

Answer **ALL** questions

Part-A (10 x 2 =20 Marks)

1	Show the hardware organization of two-stage pipeline
2	Define: guard bit.
3	Define data path in the processor unit.
4	Define MIPS rate.
5	Recall data stripping.
6	Quote SCSI
7	Define word length.
8	Label loop unrolling.
9	Explain short notes on: memory address register (MAR) & memory data register (MDR).
10	Explain about multicore.

Answer **Any FIVE** questions

Part-B (5 x10 =50 Marks)

11 a. Categorize paging and segmentation mechanisms for implementing the virtual memory.

OR

b. Examine with neat sketch, explain about Design of Fast Adders, Carry Save addition

12 a. List out the different types of buses and explain in detail with neat diagram.

OR

b. Explain the functional units of a computer? Explain.

13 a. Discuss about the various generations of Computer.

OR

b. Discuss the Hardwired control method for generating the control signals.

(P.T.O)

14 a. Summarize about Micro program control unit.

OR

b. Describe the role of system software to improve the performance of a computer.

15 a. Discuss with a neat diagram the internal organization of bit cells in a memory chip.

OR

b. Describe the three mapping techniques used in cache memories with suitable Example.

16 a. Differentiate the secondary storage devices with example.

OR

b. Explain in details the various standard I/O interfaces

17 a. Interpret in detail about Programmed I/O and interrupts.

OR

b. Restate the design of I/O systems and its performance.

18 a. Summarize on Flynn's Classification.

OR

b. Describe about Loop unrolling for Multiple-issue Processors.

Answer ALL questions

PART-C (2 x 15 = 30)

19 a. Let A A(1), A(2), . . . , A(1000) and B B(1), B(2), . . . , B(1000) be two vectors (one-dimensional arrays) comprising 1000 numbers each that are to be added to form an array C such that C(I) A(I) B(I) for I 1, 2, . . . , 1000. Using the IAS instruction set, model a program for this problem. Ignore the fact that the IAS was designed to have only 1000 words of storage.

OR

b. Paraphrase on data dependences and hazards in detail with examples.

20 a. Discuss the Hardwired control method for generating the control signals

OR

b. Summarize in detail about Vector processing.

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SL.NO:2280 **SUBJECT CODE:45121C04**

VINAYAKA MISSIONS RESEARCH FOUNDATION
(Deemed to be University)
M.E./ M.TECH DEGREE EXAMINATIONS- APRIL -2022
COMPUTER SCIENCE AND ENGINEERING
FIRST SEMESTER
DATA STRUCTURES AND ALGORITHMS

(Candidates admitted under 2021 Regulations-SCBCS)

Time : Three Hours Maximum Marks:100 Marks

Answer **ALL** questions

Part-A (10 x 2 =20 Marks)

1	What is big oh notation?
2	Give the relation between P and NP.
3	Differentiate Min and Max heaps.
4	List the properties of heap.
5	Write short note about splay tree.
6	What are the drawbacks of AVL tree.
7	How deadlines are occurred in job sequencing.
8	What are the advantages of optimal storage?
9	List the applications of dynamic programming.
10	How to differ AVL tree from binary search tree.

Answer **Any FIVE** questions

Part-B (5 x10 =50 Marks)

11 a. Examine the algorithm for ‘Findmax’ and ‘Findmin’ in a binary search tree.

OR

b. List the operations of queue.

12 a. Define a priority queue.

OR

b. Use a suitable example to explain how a general tree can be represented as a Binary Tree.

13 a. Model a splay tree for the following 9,18,2,15,17,16.

OR

b. Give a brief note on vertex splitting

14 a. Explain topological sort with an example.

OR

b. Restate on Dijkstra’s algorithm with an example.

15 a. Use your own example to demonstrate the basic terminologies of graph.

(P.T.O)

OR

b. Define NP Hard and NP complete. Represent the relation between them. Prove that P is a subset of NP

16 a. Explain in detail about cascading cut with example.

OR

b. Find the Min-heaps for the following: 7, 70, 40, 30, 9, 10, 15, 45, 50, 30, 20, 12, 5, 80.

17 a. Explain the concept of splay tree with an example.

OR

b. Paraphrase on the separate chaining collision resolution technique in detail.

18 a. Explain the knapsack problem with the example

OR

b. Write the procedure for DKNP with example.

Answer ALL questions

PART-C (2 x 15 = 30)

19 a. Explain the terms: NP-Hard and NP complete problems.

OR

b. Explain the insertion and deletion of 2-3-4 trees.

20 a. Illustrate 8-queens problem with back tracking.

OR

b. Give a brief note on 0/1 knapsack problem with example.

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SL.NO:2280

SL.NO:2287 **SUBJECT CODE:45121C05**

VINAYAKA MISSIONS RESEARCH FOUNDATION
(Deemed to be University)
M.E./ M.TECH DEGREE EXAMINATIONS- APRIL -2022
COMPUTER SCIENCE AND ENGINEERING
FIRST SEMESTER
DATABASE TECHNOLOGY

Time : Three Hours Maximum Marks:100 Marks

Answer **ALL** questions

Part-A (10 x 2 =20 Marks)

1 List out the types of fragmentation.
2 List out levels involved in database tuning.
3 Mention the advantages of OODB.
4 What is the use of group by clause?
5 State descriptive pattern.
6 What is normalization?
7 Differentiate Information system and database system.
8 Differentiate between distributed database and conventional database.
9 How sub queries are used?
10 State three kinds of intent locks.

Answer **Any FIVE** questions

Part-B (5 x10 =50 Marks)

11 a. Illustrate different types of schedules are acceptable for recoverability.

OR

b. Derive an ER diagram for a bank database.

12 a. Explain about Distributed Query Processing.

OR

b. Illustrate the concept of concurrency control in distributed databases.

13 a. Illustrate modeling and design in OODB.

OR

b. Explain multi version locks with an example.

14 a. What is a view? How can it be created? Explain with an example?

OR

b. Discuss in detail the operators SELECT, PROJECT, UNION with suitable examples.

15 a. How do you construct decision trees? Explain.

(P.T.O)

OR

b. Explain the various architectures of web database.

16 a. Explain the concept of ER model? Give example.

OR

b. Give brief notes on temporal database.

17 a. Describe static hashing and dynamic hashing.

OR

b. Explain in detail about active database.

18 a. Create an image database? Explain.

OR

b. Explain the object oriented database and its approaches?

Answer ALL questions

PART-C (2 x 15 = 30)

19 a. In database technology give the reasons for Data Warehousing and Data Mining are emerging system?

OR

b. Explain the difference between the Distributed Databases Vs Conventional Databases

20 a. What is Concurrency Control? Why use Concurrency method? Explain Concurrency Control Protocols.

OR

b. Describe about the spatial database with an example.

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