

Hall Ticket No :

Question Paper Code :

**ANIL NEERUKONDA INSTITUTE OF TECHNOLOGY & SCIENCES
(AUTONOMOUS)**

III/IV B. Tech I- Semester Regular Examinations Nov - 2017

COMPUTER GRAPHICS

(CSE)

Time: 3 hours

Max Marks: 60

Answer ONE Question from each Unit

All Questions Carry Equal Marks

All parts of the question must be answered in one place only

Unit -I

1. Explain in detail about applications of CG (12M)

(OR)

2. a) Explain working of CRT with neat diagrams (6M)
b) Differentiate between raster and random scan systems (6M)

Unit-II

3. a) Create a line using line DDA for the inputs (0,0) and (6,8) (6M)
b) Explain character attributes with examples (6M)

(OR)

4. a) Explain bresenham's line algorithm for slope ($m < 1$) (6M)
b) Explain area fill attributes with examples (6M)

Unit-III

5. a) Explain fixed point rotation with matrix representations and diagrams (6M)
b) Explain Sutherland Hodgeman clipping algorithm (6M)

(OR)

6. Explain in detail about editing structures (12M)

Unit-IV

7. Explain bezier curve with an example (12M)

(OR)

8. a) Explain 3D rotation (8M)

b) What are blobby objects (4M)

Unit-V

9. a) Explain depth buffer method (6M)

b) Explain in detail 3D viewing pipelines (6M)

(OR)

10. a) Explain in detail about clipping in 3D (6M)

b) Explain back face method (6M)

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**ANIL NEERUKONDA INSTITUTE OF TECHNOLOGY & SCIENCES
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III/IV B. Tech I- Semester Regular Examinations Nov - 2017

**COMPUTER NETWORKS
(CSE)**

Time: 3 hours

Max Marks: 60

Answer ONE Question from each Unit

All Questions Carry Equal Marks

All parts of the question must be answered in one place only

UNIT-1

- 1). a) What are the various components in establishing a network. Explain them in brief. (4M)
b) Differentiate various switching techniques. (8M)

(OR)

- 2). a) Explain how five layer architecture is different from seven layer architecture. (6M)
b) Explain the following (6M)
(i) Bandwidth
(ii) Through put
(iii) Latency and jitter

UNIT-2

- 3). a) Discuss in detail about the access methods and frame format used in Ethernet and Token ring. (8M)
b) what is framing? explain bit and character stuffing with example. (4M)

(OR)

- 4). a) Briefly explain with a neat sketch how *Stop and Weight ARQ* and *Go-BACK -N ARQ* works. (10M)
b) What is HDLC protocol? (2M)

UNIT-3

- 5). a) Explain in detail IPV6 packet format. **(8M)**
- b) (i)How router is different from bridge? **(2M)**
- (ii)what are the metrics used by routing protocol. **(2M)**

(OR)

- 6). a) How classful addressing is different from classless addressing. **(2M)**
- b) Illustrate distance vector routing algorithm and mention the limitations of the same. **(8M)**

UNIT-4

- 7). a) Explain the various fields of TCP header, and the working of the TCP protocol. **(10M)**
- b)What is the difference between *HTTP* and *HTTPS*. **(2M)**

(OR)

- 8). a) Explain final delivery of mail to the end user through POP protocol. **(4M)**
- b) Discuss the flow control mechanism and security issues in Transport layer. **(8M)**

UNIT-5

- 9). a) Explain the architecture of SNMP protocol with neat sketch. **(10M)**
- b) What are the responsibilities of Domain Name Server. **(2M)**

(OR)

- 10). a) Explain the concept of electronic mail. **(8M)**
- b) Explain the responsibilities of SNMP manager. **(4M)**

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III/IV B. Tech I- Semester Regular Examinations Nov - 2017

**DATABASE MANAGEMENT SYSTEMS
(CSE)**

Time: 3 hours

Max Marks: 60

Answer ONE Question from each Unit

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UNIT - I

1. a) Explain in detail about Database Management System advantages over file management system? **(4M)**
- b) Construct a clean and concise ER diagram for the NHL database, with the following requirements for a simple database for the National Hockey League (NHL):
1. The NHL has many teams,
 2. Each team has a name, a city, a coach, a captain, and a set of players,
 3. Each player belongs to only one team,
 4. Each player has a name, a position (such as left wing or goalie), a skill level, and a set of injury records,
 5. A team captain is also a player,
 6. A game is played between two teams (referred to as host_team and guest_team) and has a date (such as May 11th, 1999) and a score (such as 4 to 2). **(6M)**
- c) Mention the functionalities of DBA? **(2M)**

(OR)

2. a) Explain the architecture of DBMS? **(6M)**
- b) Explain the concept of Data independence? **(4M)**
- c) What is a weak entity type? How to model it? **(2M)**

UNIT - II

3. a) Consider the following schemas:

Sailors (sid, sname, rating, age)

Reserves (sid, bid, day)

Boats (bid, bname, color)

Write the following queries in relational algebra, tuple relational Calculus and domain relational calculus:

1. Find the name of sailors who have reserved boat 103.
 2. Find the names and ages of sailors with a rating above 7.
 3. Find the names of sailors who have reserved a red boat.
 4. Find the sname, bid, and day for each reservation.
 5. Find the name of sailors who have reserved at least one boat. **(5M)**
- b) Discuss the importance of entity integrity and referential integrity constraints. **(5M)**
- c) Differentiate between schema and instance? **(2M)**

(OR)

4. a) What is a view? How to specify a view? Write about view implementation techniques. **(8M)**
- b) Write a short notes on different join operations? **(4M)**

UNIT-III

5. a) Illustrate the usage of SQL GROUP BY, ORDER BY and HAVING clauses. **(8M)**
- b) What are Triggers? How to implement it? **(4M)**

(OR)

6. a) Consider the following relational schema and briefly answer the questions that follow:

Emp(eid: integer, ename: string, age: integer, salary: real)

Works(eid: integer, did: integer, pct time: integer)

Dept(did: integer, budget: real, managerid: integer)

1. Define a table constraint on Emp that will ensure that every employee makes at least \$10,000.
2. Define a table constraint on Dept that will ensure that all managers have age > 30.
3. Define an assertion on Dept that will ensure that all managers have age > 30. Compare this assertion with the equivalent table constraint. Explain which is better.
4. Write SQL statements to delete all information about employees whose salaries exceed that of the manager of one or more departments that they work in. Be sure to ensure that all the relevant integrity constraints are satisfied after your updates..

5. Find the managerids of managers who manage only departments with budgets greater than \$1,000,000. **(10M)**
- b) What is embedded SQL? **(2M)**

UNIT-IV

7. a) What is multi valued dependency? Illustrate 4NF with an example. **(6M)**
- b) State BCNF. How does it differ from 3NF? **(6M)**

(OR)

8. a) Explain Grant and Revoke commands with examples. **(4M)**
- b) List and explain the inference rules of functional dependencies. **(8M)**

UNIT-V

9. a) Draw transaction state diagram and describe each state that a transaction goes through during its execution. **(4M)**
- b) Explain in detail about timestamp based concurrency control techniques. **(8M)**

(OR)

10. a) What is 2-phase locking protocol? How does it guarantee serializability? **(8M)**
- b) Describe Wait/Die and Wound/Wait deadlock protocols. **(4M)**

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**DESIGN & ANALYSIS OF ALGORITHMS
(CSE)****Time: 3 hours****Max Marks: 60****Answer ONE Question from each Unit****All Questions Carry Equal Marks****All parts of the question must be answered in one place only****Unit -I**

1. a) Explain the steps for algorithm problem solving in detail. (9 M)
b) Describe the different characteristics of an algorithm. (3 M)

(OR)

2. a) Explain Asymptotic Notations with proper examples. (6 M)
b) Explain about mathematical analysis for recursive algorithm with any example. (6 M)

Unit-II

3. a) Explain in detail about Travelling Salesman problem. (6 M)
b) Explain about Insertion Sort with example and analyze its efficiency. (6 M)

(OR)

4. a) Explain Strassen's Matrix Multiplication with example. (6 M)
b) Explain about Quick Sort with example and derive its time complexity. (6 M)

Unit-III

5. Draw an Optimal Binary Search Tree for n=4 identifiers (a1,a2,a3,a4) = (do,if, read, while) P(1:4)=(3,3,1,1) and Q(0:4)=(2,3,1,1,1). (12M)

(OR)

6. a) What is All – Pair Shortest Path problem (APSP)? Discuss the Floyd's APSP algorithm and analysis of this algorithm. (8 M)
b) Explain about Heap sort with any example. (4 M)

Unit-IV

7. Explain the following with example (12 M)
- a) Prim's algorithm
 - b) Dijkstra algorithm
 - c) Huffman - Trees

(OR)

8. a) Explain about B Trees with example. (6 M)
- b) Explain about Boyer- Moore algorithm? (6 M)

Unit-V

9. a) Explain in detail about N, NP problems. (6 M)
- b) Explain in detail algorithm for solving non linear equations. (6 M)

(OR)

10. a) Explain in detail about Back Tracking. (6 M)
- b) Explain about Graph color with example. (6 M)
