Code No.: **10508/20508**

MR11 & MR12

MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)

(Affiliated to JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD)

Gundlapochampally (H), Maisammaguda (V), Medchal (M), Medchal-Malkajgiri (Dist), Hyderabad

II B.TECH II SEMESTER SUPPLEMENTARY EXAMINATIONS, MAY-2018

Subject: **Object Oriented Programming**

Branch: **CSE**

Time: 3 hours **Max. Marks: 75**

Answer any FIVE Questions of the following **5x15M=75M**

1. a) Explain about (i) Agents & Communities (ii) Classes & Instances [8+7M]
   b) Write short notes on (i) Inheritance (ii) Polymorphism.
2. a) Explain about scope and life time of Variables. [7+8M]
   b) Differentiate String with String Buffer.
3. a) Explain about root class for all objects in java. (7+8)
   b) Explain about access specifiers in inheritance supported by java
4. a) Define a Package. Explain the way of creating packages with examples. [9+6M]
   b) Briefly explain about I/O classes with examples.
5. a) What is an exception? Explain about types of exceptions supported by java
   b) List the methods available in the bit set class (10+5)
6. a) Write the differences between Process and Thread. [7+8M]
   b) Explain about Auto boxing with examples.
7. a) Design a Registration form using AWT Components with atleast 5 components. [8+7M]
   b) Explain about all 5 Layout Managers with diagrams.
8. a) Write a program for passing parameters to Applets. [8+7M]
   b) Explain about Tabbed Panes.

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II B.TECH II SEMESTER SUPPLEMENTARY EXAMINATIONS, MAY-2018

Subject: **Database Management Systems**

Branch: **CSE**

Time: 3 hours **Max. Marks: 75**

Answer any FIVE questions of the following **5x15M=75Marks**

1. a) Explain the features of Database Management system. [9M]

   b) Write the differences between physical level, conceptual level and view level of Data abstraction. [6M]

2. a) Explain the following terms with Example. [8M]

   (i) Relationship instance (ii) Composite Attribute

   (iii) Multivalued attribute (iv) Derived attribute

   (v) Weak entity

   b) Design a conceptual schema for Notown and draw ER diagram for your schema of preceding describer the situation that the Notown DB Inst model.

   - Each musician that records at Notown has an SSN, a Name, and address, and a phone No. . Poorly paid musicians often share the same address and no address has more than one phone.
   - Each instrument used in songs recorded at Notown has a name and a musical key.
   - Each album recorded on the Notown label has a title, a copyright date, a format and an album id.
   - Each song recorded at Notown has a title and an author.
   - Each musician may play several instruments, and a given instrument may be played by several musician.
   - Each album has a number of songs on it, but no song may appear on more than one album.
   - Each song is performed by one or more musicians and a musician may perform a no. of songs.
   - Each album has exactly one musician who acts as its producer. A musician may produce several albums, of course. [7M]

3. a) What are integrity constraints over relations? Explain its features with example. [5M]

   b) Define the divisible operation in terms of these basic Relational Algebra Operations. Describe a tipical Query that calls for division. [5M]

   c) Relational calculus is said to be a declarative language, in contrast to Algebra, which is a procedural language, Explain the distinction. [5M]

4. a) Define Trigger. Explain with example [5+10]

   b) Write the following queries in SQL for following schema.

      Sailors (sid: integer, Sname: string, rating: integer, age: red)

      Boats(bid: integer, bname: string, color: string)

      Reserves (sid: integer, bid: integer, color: string)

      i) Find the age of the youngest Sailor for each rating level?

      ii) Find the age of the youngest sailor who is eligible to vote for each rating level with at least two such Sailors?

      iii) Find the number of reservations for each red boat?

      iv) Find the average age of sailor for each rating level that at least two such sailors.

      v) Find the names of sailors who have not reserved red boat.

5. a) What is Normalization? Explain all Normal Forms. [5+10]

   b) Decompose the Relation R(A B C D E G H) with the following set of FD's into best normal form that R satisfies FD's are F={AB→C, AC→B, AD→E, B→D, BC→A, E→G} Prove that the decomposition is loss less and Dependency preserving?

6. What is Transaction? Explain in detail about Time Stamp based protocols.

7. a) How are concurrent transactions helpful in database recovery? Explain (7M)

   b) What is the role of remote backup systems in recoverability? (8M)

8. Explain the role of indexing in DBMS with emphasis on hash based indexing techniques

Code No.: **10511/20511**

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II B.TECH II SEMESTER SUPPLEMENTARY EXAMINATIONS, MAY-2018

Subject: **Design and Analysis of Algorithms**

Branch: **CSE**

Time: 3 hours **Max. Marks: 75**

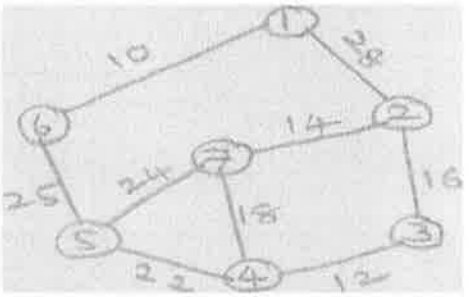
Answer any **FIVE** Questions of the following **5x15M=75M**

1. Describe the terms Probalisitic Analysis and Amortized Analysis [15 M]

2. Discuss in detail about Spanning Trees in disjoint set operations

3. a) Write the Control Abstraction for Divide and Conquer? [5M]
   b) Apply Quick Sort approach on the following elements and derive its worst case Time Complexity -10 -15 -20 25 30 35 40 45 50 [10M]

4. What is a spanning tree? Explain how a minimum cost spanning tree can be obtained from the following graph using Kruskal's Algorithm. [15 M]



5. a) What is Dynamic Programming? How it is differentiated from greedy method. [5M]
   b) How Matrix Chain Multiplication can be performed for the following matrices [10M]
   A_{2X3} X B_{3X3} X C_{3X4} X D_{4X2}

6. a) What is Back Tracking? Write its general method [7M]
   b) Explain Sum of Subsets problem for the following elements by constructing State Space Trees n=6, m=30, S= {10, 12, 13, 15, 18, 20} [8M]

7. a) Explain LC-Branch and Bound Solution for 0/1 Knapsack Problem for the following instance n=4 m=15 (pl,p2,p3,p4)=(10,10,12,18) ,(wl,w2,w3,w4)=(2,4,6,9) [10 M]
   b) What is Branch and Bound and write the general method with applications [5M]

8. a) What is Satisfiability Problem? Explain with example. [8 M]
   b) Explain the basic concepts of non deterministic algorithms [7 M]

Code No.: **10506/20506**

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II B.TECH II SEMESTER SUPPLEMENTARY EXAMINATIONS, MAY-2018

Subject: **Computer Organization**

Branch: **CSE**

Time: 3 hours **Max. Marks: 75**

Answer Any 5 questions of the following **5 x 15M=75 M**

1. a) Convert the following decimal numbers to bases indicated:

   i) 7562 ii) 1938 to hexadecimal iii) 175 to binary

   b) Explain with diagram how error detection is done with old parity bit.

2. a) Give the different types of addressing modes (5)

   b) Give the shift micro operations and give the applications of these operations (10)

3. a) Explain the address sequencing mechanism in micro programmed control.[8 M]

   b) Hand wired control unit is faster than micro programmed control unit. Justify this statement. [7 M]

4. a) Draw the circuit for BCD addition and subtraction and explain its operation?

   b) Write about array multipliers [8+7M]

5. a) Explain the structure of main memory and how it is connected to CPU. (5)

   b) Explain Associative memory with diagram (10)

6. a) Explain about Peripheral Devices.

   b) Discuss how asynchronous data transfer is implemented

7. a) Explain about parallel processing.

   b) Explain with neat diagram about pipelining.

8. a) Explain the operation of crossbar switch network with neat diagram. [10M]

   b) What is the need of inter-processor synchronization? Explain. [5 M]