Code No.: **20506** | **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-2019

Subject: **Computer Organization**

Branch: **CSE**

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

Answer any **FIVE** Questions of the following **5x15 Marks= 75 Marks**

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) List some data transfer instructions and explain with example?
   b) Define microoperation. Explain about arithmetic microoperation.
3. a) Discuss in detail control Memory [6M]
   b) Explain micro program control organization with neat illustration [9M]
4. a) Explain the addition and subtraction with signed 2's complement data (8M)
   b) Explain what is divide overflow (7M)
5. Explain the following
   a) Magnetic Tape Systems b) Optical DISC c) DVD Technology
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. (3M)
8. a) Give the characteristics of multiprocessors (7M)
   b) Explain the following
   i) Interconnection Structures (4M)
   ii) Inter process Arbitration (4M)

Code No.: **10511/20511**

MR11/MR12

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

II B.TECH II SEMESTER SUPPLEMENTARY EXAMINATIONS, MAY-2019

Subject: **Design and Analysis of Algorithms**

Branch: CSE

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

Answer any **FIVE** Questions of the following **5x15 Marks= 75Marks**

1. a) Explain the various pseudo code conventions for writing an algorithm? **[7+8]**
   b) Define space and Time complexity? Calculate them for an algorithm to find the sum of 'n' Numbers.
2. a) What are biconnected components? Write an algorithm to eliminate articulation point. **[8+7]**
   b) Explain Union and Find operations with algorithms.
3. Explain how divide and conquer can be used to search an element using binary search with the help of an algorithm.
4. a) What is Greedy Method? Write its general method. **[5+10]**
   b) State the greedy Knapsack .find an optimal solution to the knapsack instance n=3, M=20, (Pl,P2,P3)=(25,24,15) and (Wl,W2,W3)=(18,15,10)
5. a) Explain in detail Reliability Design problem. **[7+8]**
   b) Explain in detail All pairs shortest paths problem
6. a) What is Back Tracking? Write its general method **[7+8]**
   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}
7. a) Explain FIFO Branch and Bound solution. **[8+7]**
   b) Explain LC Branch and Bound Solution.
8. a) Explain the relationship among P,NP,NP Hard and NP complete classes **[8+7]**
   b) Briefly explain about Cook's theorem