

ANDHRA UNIVERSITY
SCHOOL OF DISTANCE EDUCATION
ASSIGNMENT QUESTION PAPER 2021-2022
PGDCPA (First semester)
DISCRETE MATHEMATICAL STRUCTURES

Marks 20

Answer All questions. All question carry equal marks.

1. Using generating function, solve the recurrence relation
 $a_n - a_{n-1} - 6a_{n-2}$ Given $a_0=2, a_1=1$
2. Let G be a group and let $Z = \{a : ax=xa \text{ for all } x \in G\}$ in a center of group Then prove that 'Z' is a normal subgroup of G .
3. State and prove DeMorgan's Laws for a Boolean algebra
4. Prove that a finite connected graph is Eulerian if and only if each vertex has even degree.

$$\neg (P \vee (Q \vee R)) \Leftrightarrow ((\neg P \vee \neg Q) \wedge (\neg P \vee \neg R))$$

5. Express the algebraic expression $(2x-3y)(x + 2y)^3$ in polish and reverse polish notation.

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COMPUTER ORGANIZATION

Marks 20

Answer All questions. All question carry equal marks.

1. Using 1 X 4 demultiplexer Construct 1 X 16 demultiplexer.
2. What are PROM & EPROM? State the configuration and it use.
3. Explain different types of coding mechanisms and their representation.
Give suitable examples.
4. With necessary block diagrams, explain the DMA transfer scheme.
5. Discuss the methodology technique used for serial and parallels data transfer between two computer systems.

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DATA COMMUNICATIONS

Marks 20

Answer All questions. All question carry equal marks.

1. Discuss about the services provided by ISDN.
2. Describe sliding window protocol.
3. Describe about different transmission impairments.
4. Write a note on network classes. What is the use of submitting IP address?
5. What is the difference between delivery of a frame in the data link layer and delivery of a packet in network layer? Explain.

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LANGUAGE PROCESSORS

Marks 20

Answer All questions. All question carry equal marks.

1. Explain the data formats for the system 360.
2. Explain in detail the design of two pairs assemblers. Write the corresponding flow charts.
3. What are the features of dosing monitor? Explain.
4. Discuss about the design of Absolute loader and direct linking loaders.
5. Describe the features of Text editor.

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DATA STRUCTURES AND PROGRAMMING METHODOLOGY

Marks 20

Answer All questions. All question carry equal marks.

1. Differentiate between Binary tree and threaded binary tree.
2. Write an algorithm to add two polynomials.
3. Define stack implements push and pop functions for stack using arrays.
4. Write an algorithm for Heap sort and Merge sort.
5. Explain Hashing in detail.