

# Biyani Institute of Science and Management I Internal Examination 2019-20

## Class: MCA-III





Time: 1 ½Hrs Set:A MM: 20

## [I] Answer the following questions in one line only

(2\*1=2)

- 1. What do you understand by the term "graph"?
- 2. Define "Depth of a tree".

### [II] Answer the following questions in 50 words

(2\*3=6)

- 1. Explain "Path" and "circuits" in graph with example.
- 2. Explain various phases in compiler design.

#### [III] Answer the following questions in 150 words.

(2\*6=12)

- 1. Define "Non Deterministic Finite Automaton" with example.
- 2. Construct a deterministic finite automaton equivalent to  $M = (\{q0,\,q1,\,q2,\,q3\},\,\{0,\,1\},\,\delta,\,q0,\,\{q3\})$  Where  $\delta$  is given by the following table

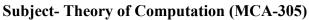
State	а	В
→q0	q0, q1	q0
q1	q2	q1
q2	q3	q3
<b>(3)</b>		q2



Time: 1 1/2 Hrs

## Biyani Institute of Science and Management I Internal Examination Sept. 2019

## Class: MCA-III





Set:B

## [I] Answer the following questions in one line only

(2\*1=2)

MM: 20

- 1. What do you understand by the term "tree"?
- 2. Write any two properties of a tree.

#### [II] Answer the following questions in 50 words

(2\*3=6)

- 1. Define the following terms w.r.t. a tree:
  - i) Length of a path
  - ii) Height of a tree
- 2. Define concatenation of two strings with example.

## [III] Answer the following questions in 150 words.

(2\*6=12)

- 1. Define "Transition System" with example.
- 2. Find a deterministic acceptor equivalent to  $M = (\{q0, q1, q2\}, \{a,b\}, \delta, q0, \{q2\})$

Where  $\delta$  is given by the following table

State	a	b
→q0	q0, q1	q2
q1	q0	q1
<b>@</b> 2		q0, q1