

Roll No.

97674

**BCA 4th Semester
Examination – May, 2019**

DATA STRUCTURE-II

Paper :BCA- 207

Time : Three hours] [Maximum Marks : 80

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt *five* questions. Question No. 1 is *compulsory*. Select *one* question from each Unit.

1. (a) What is AVL search tree ?
- (b) What is the difference between B- tree and B+ Tree ?
- (c) What is topological sorting ?
- (d) What is the difference between graph and tree ?
- (e) What is the complexity of binary search ?

- (e) What is memory hierarchy ?
- (f) What is an Instruction Register ? Outline its layout.
- (g) What is the criteria for Interrupt Set selection ?
- (h) What is an IOP ? State its significance.

UNIT – I

2. (a) What are state Diagrams ? How are these helpful ? Illustrate. 8
- (b) What are Excitation Tables ? How are these relevant ? Draw Excitation Table for RS and JK flip- flop. 8
3. Explain the following :
 - (a) Master Slave Flip - flop 8
 - (b) Clocked RS Flip- flop 8

UNIT – II

4. (a) What is a Shift - Register ? Design a 4- bit shift register and outline the procedure for serial to parallel conversion and vice-versa. 8

(b) What is Modulo- 6 counter ? How do you design it ? Illustrate. 8

5. Explain the following :

(a) Asynchronous Binary Counter. 8

(b) Binary-Down Counter. 8

UNIT – III

6. (a) What are I/O device controllers ? How these work ? Illustrate their working . 8

(b) What is ROM ? What are its types ? Where is it used ? Illustrate. 8

7. Explain the following :

(a) Flash Memory 8

(b) Optical Storage. 8

UNIT – IV

8. (a) What is DMA techniques ? How is it different from Interrupt- driven I/O technique ? Illustrate their working . 8