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