Roll No. ....

97674

BCA 4th Semester
Examination – May, 2019

DATA STRUCTURE-II
Paper : BCA-307

Time : Three hours]   [Maximum Marks : 80

Before answering the question 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

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