

- (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

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 ?

97674- 3,400 -(P-3)(Q-9)/(19)

P. T. O.