

**B.Tech. - VIEP - COMPUTER SCIENCE AND
ENGINEERING (BTCSVI)**

Term-End Examination

00763

June, 2018

BICS-009 : LOGIC DESIGN

Time : 3 hours

Maximum Marks : 70

Note : Attempt any seven questions. All questions carry equal marks.

1. (a) Describe the behaviour of the quick sort algorithm when the input is already sorted. 5
- (b) Define circular queue and write its applications. 5
2. What is a process ? How is it different from a program and a task ? Explain different stages of process life cycle. 10
3. (a) What is demand paging ? Explain in detail. 5
- (b) Discuss the different page allocation algorithms. 5

4. What is deadlock avoidance ? What is safe state ?
Write an algorithm for deadlock avoidance. 10
5. (a) Explain 4-bit parallel-in serial-out shift register with the help of a suitable diagram. 5
- (b) What are the merits and demerits of TTL ?
Mention the name of TTL sub-families. 5
6. What is a full-adder ? Write truth table for a full-adder and develop its logic circuit. 10
7. Explain the following : 2×5=10
- (a) Paging system
- (b) Segmentation system
8. (a) How can a R-S flip flop be constructed using NOR gate ? Explain. 5
- (b) Define the term Modulus. How can one change the modulus of the counter ? 5
9. (a) Describe the methods to ensure a race free statement assignment. 5
- (b) Explain doubly linked list with example. Write the procedure to insert a node at the end of a doubly linked list. 5

10. Write short notes on any *two* of the following : $2 \times 5 = 10$

- (a) Parity Generator and Checker
 - (b) Authentication and Authorization
 - (c) Representation of sets using list
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