

Roll No.

Total Pages : 3

PMCA/M-20

10621

**COMPUTER ORGANIZATION &
NETWORKING FUNDAMENTALS**

Paper–CS-DE-11

Time Allowed : 3 Hours]

[Maximum Marks : 80

Note : Attempt **five** questions in all, selecting at least **one** question from each Unit. Question No. **1** is compulsory. All questions carry equal marks.

Compulsory Question

1. Answer the following questions in brief : $4 \times 4 = 16$
 - (i) Distinguish between Hardware and Software.
 - (ii) What are rules to draw a truth table?
 - (iii) What is T-type flip-flop? Write its excitation table.
 - (iv) Explain about Telnet.

UNIT-I

2. (i) Explain the following about Hard Disk :
track, sector, cylinder, latency time, seek time,
access time. 8

10621/K/396

P. T. O.

- (ii) Convert $(39.75)_{10}$ into octal and hexadecimal number systems. 8
3. (i) What are BCD codes? Represent $(947)_{10}$ in 2421, excess-3 and cyclic BCD codes. 8
- (ii) Perform $(-13)_{10} + (-19)_{10}$ in 1's complement and 2's complement form considering register size 8 bit. 8

UNIT-II

4. (i) What are cononical representation of Boolean function? Explain with an example. 8
- (ii) Simplify the following Boolean function using K-map : $F(A,B,C,D) = \sum (0,1,2,8,10,11,14,15)$. 8
5. (i) What is full adder? Design it using two half adders, one AND gate and one OR gate. 8
- (ii) Design a BCD code converter to convert 8421 into excess-3 BCD code. 8

UNIT-III

6. (i) What is JK flip-flop? Explain its working with its logic diagram. Also construct its excitation table. 8

- (ii) What is RK flip-flop? How can you convert it into D-type flip-flop? Explain. 8
- 7. (i) What is register? Design a 4-bit register with parallel load using D flip-flops. 8
- (ii) What is counter? Design a 4-bit binary ripple counter and explain its working. 8

UNIT-IV

- 8. (i) Explain the following :
repeater, network interface card (NIC), bridge and router. 8
- (ii) What are wired transmission media? Explain them in brief. 8
- 9. (i) What are internet services? Explain FTP service. 8
- (ii) Explain the following :
search engine, DSL service. 8