Z-175

Total Pages : 2 Roll No.

S-2452

B.C.A. (IInd Semester) Examination, 2021-22

DIGITAL ELECTRONICS

Paper-IV (BCA-204)

Time : 2:30 Hours] **Max. Marks : 70**

Note : Attempt any *five* questions. All questions carry equal marks.

1. (a) Design and draw the iogic diagram of full adder. [7]

(b) Explain the working of S-R flip-flop using its logic diagram and truth table. [7]

2. (a) What are universal gate? Explain NAND gate is a Universal gate. [7]

(b) Write short notes on EEPROM and EPROM. [7]

3. Perform the following number conversion : [2×7=14]

(a) $(3DEF)_{16} = (\ ?\ )_{10}$

(b) $(F34A)_{16} = (\ ?\ )_2$

(c) $(651)_8 = (\ ?\ )_{10}$

(d) $(58)_{10} = (\ ?\ )_2$

(e) $(1100.1010)_2 = (\ ?\ )_{16}$

(f) $(7.56)_8 = (\ ?\ )_{16}$

(g) $(45.23)_{10} = (\ ?\ )_2$

4. (a) Simplify the expression: [7]

$F(A, B, C, D) = \Sigma\ (0, 2, 8, 9, 10, 11, 12, 14)$

Using K- Map in POS form and represent the resulting function using NOR gates.

(b) Construct a 4*16 decoder using two 3*8 decoders. [7]

5. (a) Explain the stack organization. Write the sequence of micro operation for PUSH and POP operation. [7]

(b) Explain the BCD, ASCII and EBCDIC. [7]

6. (a) Difference between cache memory and virtual memory. [7]

(b) Explain how a J-K flip flop can be converted into a D flip flop. https://www.sdsuvonline.com [7]

7. Short notes (Any *four*) : [2×7=14]

(a) Hit Ratio and miss ratio.

(b) K-Map.

(c) Asynchronous data transfer.

(d) Multiplexer.

(e) Magnetic tape.