No. of Printed Pages : 3

BIELE-012

B.TECH. IN ELECTRONICS AND COMMUNICATION ENGINEERING (BTECVI)

Term-End Examination

June, 2013

BIELE-012 : ELECTRONIC SWITCHING CIRCUITS

Time : 3 hours *Maximum Marks : 70*

Note : *(i) Attempt **any seven** questions. **All** questions carry **equal** marks.*

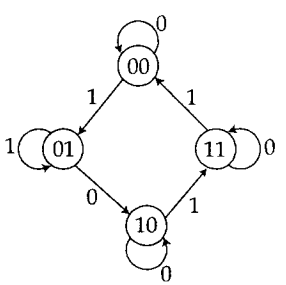
(ii) Any missing data can be suitably assumed.

1. Explain the operation of JK Master-slave Flip-Flop with the help of neatly labelled diagram and truth tables. **10**

2. Give the excitation table of the following flip-flops : (i) RS-FF (ii) JK-FF (iii) D-FF (iv) T-FF. Convert RS-FF to JK-FF. **10**

3. Explain the operation of Sequence Generator. **10**

4. Design the clocked sequential circuit whose state diagram is shown below - **10**

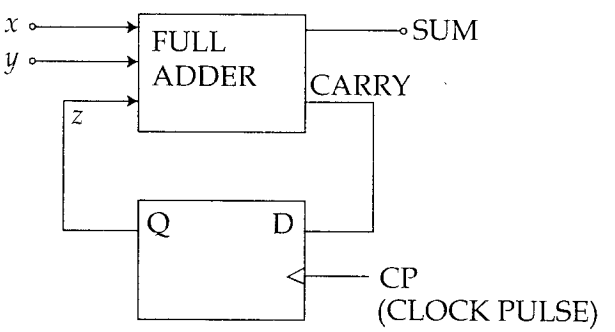


5. Differentiate between synchronous and asynchronous sequential circuits. Give the model of an asynchronous sequential logic circuit. Also explain the lumped delay model of an asynchronous sequential logic circuit. **4+3+3=10**

6. Explain the operation of Fundamental Mode circuits and list the steps involved in the analysis of Fundamental-Mode Circuits. **10**

7. What are various types of hazards associated with Fundamental-Mode Circuits. Explain them. **10**

8. Draw an ASM chart and state diagram for the given circuit. **10**



9. Define "RELAY CONTACTS". Discuss various types of relay contacts and give their symbols. Explain how various basic logical operations are implemented using contact networks. **5+5=10**

10. Design a contact network with 4 inputs relay W, X, Y and Z which receives BCD numbers and produces a signal whenever the present number is 3 or multiple of 3. **10**