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BIELE-012

B.Tech. – VIEP – ELECTRONICS AND COMMUNICATION ENGINEERING (BTECVI)

00826 **Term-End Examination**

June, 2015

BIELE-012 : ELECTRONIC SWITCHING CIRCUITS

Time : 3 hours *Maximum Marks : 70*

Note : *Attempt any **seven** questions. All questions carry equal marks. Any missing data may be suitably assumed. Use of scientific calculator is permitted.*

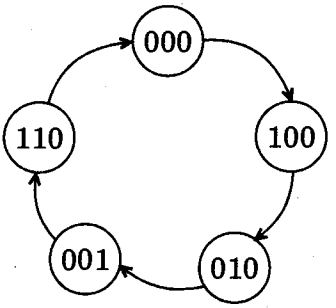
1. (a) Explain how you will convert JK-flip-flop into D-flip-flop. *5*

(b) Write down the difference among a truth table, a state table and an excitation table with suitable examples. *5*

2. With the help of a circuit diagram, explain the operation of a universal shift register and also explain the difference between latch and flip-flop. *7+3=10*

3. What is a decade counter ? Explain its operation with the help of neatly labelled circuit diagram and timing diagram. *3+7=10*

4. Design a sequence generator for the following sequence using JK-flip-flop : *10*



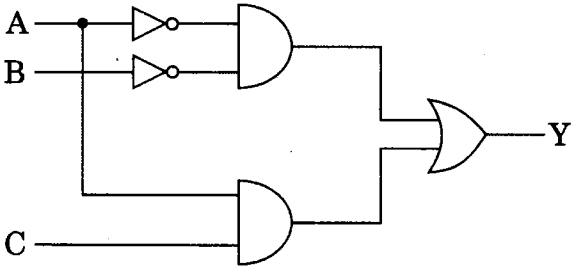
5. (a) Differentiate between fundamental mode and pulse mode asynchronous sequential circuit. *5*

(b) Define state diagram and flow tables for asynchronous sequential circuits. *5*

6. Explain the general design procedure for asynchronous sequential circuits with suitable example. *10*

7. Explain the various types of hazards in asynchronous circuits. *10*

8. (a) Modify the given circuit to make it hazard-free. *7*



(b) How do hazards affect asynchronous sequential circuits ? *3*

9. (a) Define Relay contacts. Discuss the various types of Relay contacts with their symbols. *5*

(b) Explain how symmetric functions of the network are identified. *5*

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

(a) Properties of Symmetric Functions

(b) Analog-to-Digital Converter Circuits

(c) Limitation of Finite State Machines
