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BIELE-012

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

Term-End Examination

00386

December, 2014

BIELE-012 : ELECTRONIC SWITCHING CIRCUITS

Time : 3 hours *Maximum Marks : 70*

Note : *Attempt any **seven** questions. All questions carry equal marks. Missing data, if any may be suitably assumed.*

1. Give the circuit diagram of any two digital-to-analog converter circuits. Also explain the operation of any one of the above mentioned circuits. *5+5=10*

2. What are the points of difference between a latch and a flip-flop ? Explain with the help of a neat diagram the operation of a D-FF and a T-FF. *3+7=10*

3. Design the clocked sequential circuit whose state diagram is shown is Figure 1. *10*

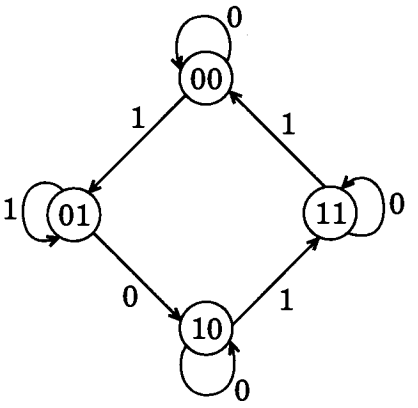

Figure 1

4. Define the term 'Definite State Model'. What are the various capabilities and limitations of finite state machines ? *3+7=10*

5. Design a 3-bit counter using JK flip-flops. *10*

6. What are asynchronous sequential circuits ? Explain the concept of timing diagram, state diagram and flow table as applicable to asynchronous sequential circuits. *3+7=10*

7. Explain the steps involved in the design of hazard free combinational networks. *10*

8. What are the properties of symmetric functions ? Explain the process of identification and synthesis of symmetric functions. *5+5=10*

9. Draw an ASM chart and state diagram for a full subtractor circuit. *10*

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

(a) Shift Registers

(b) Ripple Counters

(c) Synchronous Sequential Circuits