

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

00477

Term-End Examination

June, 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. Explain the operation of the following with the help of neatly labelled diagram and truth table : 5+5=10
 - (a) SR Flip-flop
 - (b) JK Flip-flop

2. Give the excitation table of the following : 4+6=10
 - (a) RS-FF
 - (b) JK-FF
 - (c) D-FF
 - (d) T-FF

Show the steps involved in the conversion of D-FF to T-FF.

3. Give the circuit diagram of any two Analog to Digital Converter circuits. Also explain the operation of any one of the circuits. $5+5=10$
4. Explain the operation of a Sequence Detector circuit. 10
5. What are various types of counters ? Explain their operation with the help of circuit diagram and output waveforms. 10
6. What are the various steps involved in the analysis and synthesis of contact networks ? Explain with the help of a suitable example. 10
7. Define the term 'HAZARDS'. What are the reasons which produce hazards in combinational networks and how can it be eliminated ? $2+4+4=10$
8. With the help of a suitable example explain the procedure involved in the synthesis and analysis of synchronous sequential circuits. 10
9. Write short notes on any *two* of the following : $2 \times 5 = 10$
- (a) Static and Dynamic Hazards
 - (b) Properties of symmetric functions
 - (c) Pulse-mode circuits
10. Define the term – “Incompletely specified machines.” Explain the procedure for simplification of incompletely specified machines. $3+7=10$
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