

**B.TECH. SEM -IV INFO. TECH. 2014 COURSE (CBCS) :**  
**SUMMER - 2018**  
**SUBJECT: DIGITAL ELECTRONICS & LOGIC DESIGN**

Day : **Thursday**  
Date : **07/06/2018**

**S-2018-2298**

Time **10.00 AM TO 01.00 PM**  
Max. Marks : 60

**N.B.**

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Use of non-programmable calculator is allowed.
- 4) Assume suitable data if necessary.
- 5) Draw neat and labeled diagrams **WHEREVER** necessary.

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**Q.1** Describe Binary number system and convert any Binary number to octal and Hexadecimal numbers. **(10)**

**OR**

Give the detailed classification of logic families.

**Q.2** Simplify the following Boolean function by using Quine Mc Cluskey method. **(10)**  
 $F(A, B, C, D) = \sum m(0, 2, 3, 6, 7, 8, 10, 12, 13)$

**OR**

Convert the following expressions into their standard SOP or POS forms

1.  $Y = AB + AC + BC$  2.  $Y = (A + B)(\bar{B} + C)$  3.  $Y = A + BC + ABC$  .

**Q.3** Describe JK flip flop to SR flip flop conversion. **(10)**

**OR**

Explain D and T flip-flops.

**Q.4** Write a steps to design the sequence detector. **(10)**

**OR**

What is state machine? What is finite state machine? Explain with example.

**Q.5** Describe EEPROM with its advantages and disadvantages. **(10)**

**OR**

Describe ROM with its advantages and applications.

**Q.6** Describe VHDL program format. **(10)**

**OR**

What is VHDL and describe its features?

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