

V07/DHW101/EE/20160518

Time : 3 Hours

Marks : 80

Instructions :

1. All Questions are Compulsory.
 2. Each Sub-question carry 5 marks.
 3. Each Sub-question should be answered between 75 to 100 words. Write every questions answer on separate page.
 4. Question paper of 80 Marks, it will be converted in to your programme structure marks.
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1. Solve any **four** sub-questions.
 - a) Write note on BCD numbers. 5
 - b) Write derived gates. 5
 - c) Write features of CMOS Logic. 5
 - d) Explain the Rules of additions. 5
 - e) Simplify boolean expression using K-Map
 $\bar{A}\bar{B}CD + A\bar{B}\bar{C}D + \bar{A}BCD + \bar{A}\bar{B}C\bar{D} + A\bar{B}C\bar{D} + \bar{A}BC\bar{D}$ 5
2. Solve any **four** sub-questions.
 - a) Draw and explain R-S flip flop. 5
 - b) Give five basic function perform by computer. 5
 - c) Write De-Morgan's 2nd theorems. 5
 - d) Draw and explain standard TTL NAND gate. 5
 - e) Convert Hexadecimal number to Binary number 5
 - i) 90
 - ii) A1
 - iii) BA
 - iv) F3
 - v) 65

3. Solve any **four** sub-questions.
- a) Draw AND gate using NOR and NAND gate. 5
 - b) Define and explain Full adder. 5
 - c) Explain synchronous counter. 5
 - d) Draw logic diagram of $A+(B+C) = (A+B)+C$. 5
 - e) Draw IC 7404. 5
4. Solve any **four** sub-questions.
- a) Write 3 input OR gate. 5
 - b) Give types of ROM. 5
 - c) Define volatile and non-volatile memory. 5
 - d) Prepare truth table for given boolean expression
 $\overline{A}BC\overline{D} + A\overline{B}C\overline{D} + A\overline{B}C\overline{D} + \overline{A}BCD + ABC\overline{D}$ 5
 - e) Perform binary addition
 - i) $10111 + 1000$
 - ii) $1100 + 1001$
 - iii) $10010 + 1010$
 - iv) $1111 + 1011$
 - v) $1110 + 1000$ 5

