DF-1723
M. Sc. (I. T.) (Programme) (Sem. III) Examination
March / April – 2016
Digital Electronics

Time : 3 Hours] [Total Marks : 70

Instruction :

1 (A) Answer the following questions (Any three) (06)
1) Explain mod-3 counter circuit in detail.
2) List out Bubbled gates and explain it in detail.
3) Draw circuit for nibble multiplexer.
4) Explain half adder circuit in detail.

1 (B) Answer the following questions (Any Two) (10)
1) Write short note on eight to one multiplexer.
2) Explain how 0x5e – 0x4f operation perform on full adder – subtraction circuit.
3) List out different type of ROM and Write short note on EPROM and EEPROM.

2 Answer the following questions (Any Two) (18)
1) Explain parallel synchronous Up-Down counter to count decimal number from '0' to '7' and '7' to '0' with the help of circuit diagram, timing diagram and Truth table.
2) Explain decoding gate circuit using truth table, timing diagram with appropriate example.
3) Explain serial Input parallel output shift register for data '01100101' with the help of circuit diagram and Timing diagram.
3. Answer the following questions (18)

3 (A) Answer the following short questions in detail. (Any six) (06)

1) Explain NOT gate.
2) Draw internal circuit for full adder.
3) Write difference between Asynchronous counter and synchronous counter.
4) Draw circuit diagram of Mod -12 counter.
5) Write De morgan's first law.
6) List out minimum five Boolean equation relations and their duals.
7) Draw gate combinational gate circuit diagram for following Boolean equation.

(((ABC+ BCD).AC).((ACD.BCD)+AD)

3 (B) Answer the following questions in detail. (Any two) (12)

1) A) NAND gate. B) NOR gate c) AND gate
2) Write short note on S-R flip flop.
3) Write short note on karnaugh map

.4 Answer the following questions (18)

.4 (A) Answer the true or false for following lines (04)

1) OR gate is universal gate.
2) S=1 R=1 then output Y= last state in J-k flip-flop.
3) NOT gate have multiple inputs and only one output.
4) In Parallel input serial output shift register circuit only multiple inputs and only one output terminals are available.

.4 (B) Answer the following questions (Any two) (14)

1) Explain Ex-OR gate and it’s functioning in parity checking related application.
2) Draw circuit and timing diagram for decade counter.
3) Write Boolean equation and draw circuit diagram for given truth table -1 using sum of product and for given truth table -2 using product of sum method.

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