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Roll No .....

MCADD-105

M.C.A. (Integrated), I Semester

Examination, June 2020

Digital Electronics

Time : Three Hours

Maximum Marks : 70

Note: i) Attempt any five questions.

ii) All questions carry equal marks.

1. a) Convert following Decimal Number to Binary

   i) 25 ii) 125

   iii) 145 iv) 51

   b) Convert following Decimal number to octal.

   i) $(456)_{10}$ to octal

   ii) $(212)_{10}$ to octal

   iii) $(100)_{10}$ to octal

   iv) $(127)_{10}$ to octal

2. a) Explain the Grey code and BCD numbers.

   b) Discuss application of logical Gates.

3. Explain the following terms:

   a) Half-Adder

   b) OR and NOR gate

   c) De-Morgan's theorem

4. a) Explain the R-S Flip-Flop in detail. What is the Race-Around condition and how it can be eliminated?

   b) Explain briefly the Karnaugh's map and SOP and POS methods.

5. Draw the diagram of Full-Adder and explain it.

6. What is multiplexor and De-multiplexor? Draw the 4:1 multiplexor and explain.

7. a) What is Ripple counter? Draw and explain 2 Bit Ripple-up-counter using negative edge triggered Flip-Flops.

   b) What is MOD10 counter? Explain it.

8. Write short notes on any three.

   i) TTL circuits

   ii) Static and Dynamic RAM

   iii) Shift-Registers

   iv) Decoder

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