

**4233****BOARD DIPLOMA EXAMINATION, (C-14)****JUNE-2019****DCME - THIRD SEMESTER EXAMINATION****DIGITAL ELECTRONICS**

Time:3hours

Max.Marks:80M

**PART-A****3X10=30****Instructions:**

- 1) Answer **all** questions.
- 2) Each question carries **three** marks.
- 3) Answer should be brief and straight to the point and shall not exceed four simple sentences.

- 1) Find the complement of the following function  $F = \bar{x}y\bar{z} + \bar{x}yz$
- 2) Compare serial adder with parallel adder
- 3) Simplify the Boolean function  $F = ABC + AB\bar{C} + \bar{A}\bar{B}C + \bar{A}BC$  using k-maps.
- 4) Classify the bipolar logic family.
- 5) Write a short note on edge triggering in flipflops.
- 6) Distinguish between synchronous and asynchronous inputs of flipflop.
- 7) List the drawbacks of ripple counters.
- 8) State the need for a Register.
- 9) Distinguish between EEPROM and UVPR0M.
- 10) Write the application of demultiplexers.

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PART-B

5X10=50

- Instructions:**
- 1) Answer any **five** questions.
  - 2) Each question carries **ten** marks.
  - 3) Answer should be comprehensive and the criteria for valuation are the content but not the length of the answer.

- 11) a) Construct an XOR gate using NAND gate only and NOR gates only.  
b) Simplify the boolean function to a minimum number of literals by applying the boolean postulates  $y = (x + y)(x + \bar{Y})$  5
- 12) Draw and explain a 4-bit parallel adder.
- 13) Explain the working of NOR latch.
- 14) Explain the working of D flipflop with block diagram and write its truth table.
- 15) Explain the asynchronous decade counter with diagram.
- 16) a) Explain 4 to 10 line decoder with diagram. 5  
b) Draw a 4bit ring counter. 5
- 17) Draw and explain the working of 4-bit shift left register.
- 18) Draw and explain a 4-bit serial in-serial out register.

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