

\*

**4217****BOARD DIPLOMA EXAMINATION, (C-14)****JUNE-2019****DAEI - THIRD SEMESTER EXAMINATION****DIGITAL ELECTRONICS**

Time: 3 Hours

Max.Marks: 80

**PART –A****10 X 3=30M**

**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 **three** simple sentences.

- 1) Compare weighted and Un-weighted codes.
- 2) Convert  $(102)_{10}$  into binary and octal number.
- 3) State the function of the Half-adder.
- 4) List the any three applications of multiflexer.
- 5) Distinguish between synchronous and asynchronous sequential logic circuits.
- 6) State the race around condition.
- 7) Define modulo-N counter.
- 8) State the need for Register.
- 9) List various types of memories.
- 10) State the need for A/D converters.

\*

## PART – B

5X10=50

\*

**Instructions:** 1) Answer any **FIVE** questions each carries **TEN** marks  
2) The answer should be comprehensive and the criterion for the valuation is the content but not the length of the answer.

- 11) a) Explain the working of an exclusive – OR gate with truth table. 5M  
b) Simplify  $\bar{A}\bar{B}\bar{C} + \bar{A}\bar{B}C + \bar{A}B\bar{C} + \bar{A}BC$  using Karnaugh map method. 5M
- 12) a) Subtract  $(1110)_2$  from  $(1011)_2$  using 2's compliment method. 5M  
b) Simplify the logic expression  $ABC + A\bar{B}C + AB\bar{C}$  using Boolean algebra. 5M
- 13) Explain the 4 Bit parallel adder using full adders with diagram.
- 14) Explain 2's compliment parallel adder/ subtractor circuit.
- 15) Explain JK Master Slave flip flop with truth table.
- 16) Explain the working of Ring counter with diagram.
- 17) Explain transfer of data from a Register to Register.
- 18) Explain D/A conversion using weighted resistors.

\* \* \*

\*