C16-**AEI-503**

6611

BOARD DIPLOMA EXAMINATIONS

OCT/NOV-2019

DAEI – FIFTH SEMESTER

MICROCONTROLLERS AND APPLICATIONS

Time: 3 hours Max. Marks: 80

PART – A **3 X 10 = 30**

Instructions: *1. Answer **all** questions.*
*2. Each question carries **Three** Marks.*
3. Answer should be brief and straight to the point and should not exceed five simple sentences.

1. List any three differences between Microprocessors and Microcontrollers.
2. List any three special function registers of 8051.
3. List any three interrupts of 8051.
4. Write the instruction format of 8051.
5. State the function of Fetch cycle, Execute cycle and Instruction cycle.
6. List any three differences between machine level and assembly level programming.
7. Draw any 3 symbols used in drawing flow charts and write their function.
8. Write the sequence of steps when a subroutine is called and executed.
9. List and name three different types of interfacing peripheral ICs.
10. Write any three features of 8257.

PART – B **5 X 10 = 50**

Instructions: *1. Answer any **Five** questions*
*2. Each question carries **TEN** Marks.*
3. Answer should be comprehensive and criteria for Valuation is the content but not the length of the answer.

11. Draw and explain the internal architecture of 8051 Microcontroller. [5M +5M]
12. Explain the timers/counters of 8051.
13. What are the various addressing modes available in 8051?
    Explain with examples.
14. Explain following instruction with examples. [5X2=10M]
    (i) SWAPA (ii) RRCA (iii) DIVAB (iv) XCHDA,@RI (v) DAA
15. Write an ALP to find the largest number from an array of 10 numbers stored in RAM starting from address 50H.
16. a) Explain PUSH and POP instructions. [6M]
    b) Write the instructions to set up time delay. [4M]
17. Draw the functional block diagram of 8255 and explain the functions of each block. [4M+6M]
18. Draw and explain the schematic diagram of interfacing seven segment display with 8051. [6M+4M]