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BOARD DIPLOMA EXAMINATION, (C-09)
OCTOBER/NOVEMBER-2018
DEEE - FOURTH SEMESTER EXAMINATION

DIGITAL ELECTRONICS AND MICRO CONTROLLERS

*Time :*3 Hours] [Total Marks: 80

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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 five simple sentences.

1. State the need for D/A and A/D converter.

2. Convert the Decimal 948.1875 into Hexadecimal number system.

3. Draw the circuit diagram of decade counter.

4. What is shift register? List the different types of shift registers.

5. Explain the functions of RS0 and RS1 bits in PSW register.

6. List the features of 8051 Microcontrollers.

7. List any six conditional jump instructions of 8051 microcontroller.

8. Explain the SWAP A instruction with one example.

9. State the addressing mode of each of the following instructions.

   i)   MOV A, # 30 H
   ii) MOV A, @R0
   iii) SUBB A, 56H
   iv) MOVX A, @DPTR
   v)   RR A
   vi) ADD A, R1

10. Draw a flow chart to multiply two numbers 56H and 33H.

PART-B

10X5=50

Instructions : 1. Answer any **Five** questions.
2. Each question carries **ten** marks.
3. Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer

11. (a) Draw the logic circuit of EX-OR gate using basic gates and explain the operation with its truth table.

    (b) State and explain De-Morgan's theorems.

12. (a) Draw the block diagram of serial adder and explain its working with an example.

    (b) Compare the performance of serial adder and parallel adder.

13. (a) Classify the different types of memories.

    (b) Distinguish between Flash ROM and NVRAM.

14. (a) Explain the operation of clocked RS flip flop with its truth table.

    (b) Draw the circuit diagram and explain the operation of T flip flop with its truth table.

15. Draw the pin-diagram of 8051 microcontrollers and explain the function of each pin.

16. (a) Explain the SUBF register.

    (b) Draw and explain the bit wise description of PCON register.

17. (a) List the major groups in the instruction set of 8051 along with two examples of each.

    (b) Classify the 8051 instruction set as per their length with one example of each.

18. Write an assembly language program to add two 4-byte numbers stored in the RAM locations. (Assume the necessary data)

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