



C09-EE-405

3477

**BOARD DIPLOMA EXAMINATION, (C-09)
OCT/NOV—2018
DEEE - FOURTH SEMESTER EXAMINATION**

DIGITAL ELECTRONICS AND MICRO CONTROLLERS

Time : 3 hours]

[Total Marks : 80

PART—A

3×10=30

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

1. Convert Decimal 1298 into Octal number system.
2. Draw the logic circuit and explain the function of Half - adder.
3. Draw the circuit of RST flip flop using NAND gates.
4. What are the differences between asynchronous and synchronous counters.
5. List any six bit - addressable registers of 8051 Microcontroller.
6. Draw the pin diagram of 8051 microcontroller.
7. Explain the difference between MOV and MOVX instructions.
8. Explain the MUL AB instruction with one example.
9. List the different addressing modes of 8051.
10. Write a program to transfer the content of memory location 4500H to the iRAM location 40H, registres R2 and R3.

PART-B

10×5=50

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

- 11.** a) Draw the logic circuit and explain the operation of 4X2 encoder.
b) State the need for A/D and D/A converters.
- 12.** a) Draw the symbols and explain the operation of the following with their truth tables. *i)* NAND gate *ii)* OR gate.
b) State and explain De-Morgan's theorems.
- 13.** a) Briefly explain the data movement in the following registers with block diagrams. *i)* SISO *ii)* PIPO
b) Explain the operation of 4 bit shift left register with diagram.
- 14.** a) Distinguish Between ROM and RAM.
b) Draw the circuit and explain the working of dynamic memory.
- 15.** Explain the internal organization of intrenal RAM of 8051 microcontroller.
- 16.** Draw and explain the bit wise description of TMOD and TCON registers.
- 17.** a) Explain RET and RETI instructions.
b) Compare LJMP, AJMP and SJMP instructions.
- 18.** Write an assembly language program along with comments to multiply two 8-bit numbers stored in the memory locations 2400H and 2401H and save the result at 2402H and 2403H.

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