08PPHCT1004 - PPH/CT/1004

M.SC. DEGREE EXAMINATION,APRIL 2018
I YEAR - IV SEMESTER
Major Paper I-Integrated Electronics and Microprocessor

Time : 3 Hours **Max.marks :75**

Section A $(10 \times 2 = 20 marks)$

Answer any **TEN** questions

1. State the main difference between JFET and MOSFET.
2. What are advantages of Integrated Circuits (IC)?
3. What is a shift register?
4. State the factors influencing the accuracy of D/A converter.
5. What are operational amplifiers?
6. Distinguish between monostable and astable multiribractors.
7. What are registers in microprocessor 8085?
8. What are handsheeking operations.
9. What is the advantage of programmable peripheral interface Intel 8255?
10. State few applications of stepper motor.
11. How TRIAC is different from SCR?
12. Distinguish between series and parallel registers.

Section B $(5 \times 5 = 25 marks)$

Answer any **FIVE** questions

13. Explain with necessary diagram about the static and transfer characteristics of MOSFET.
14. What is asynchronous counter? Design a Mod-8 asynchronous counter.
15. Discuss the theory of Op-Amp astable multivibrator.
16. Distinguish between I/O mapped I/O and memory mapped I/O.

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17. Describe the pin-out function diagram of 8255.

18. Explain the working of UJT relaxation oscillator.

19. For a 5-bit weighted resister D/A converter, determine the following
    (i) The weight assigned to LSB
    (ii) The weight assigned to second LSB
    (iii) Change in output voltage when only the LSB changes
    (iv) Full scale voltage
    (v) Output voltage for a digital voltage of 10101.

Section C $(3 \times 10 = 30 marks)$

Answer any **THREE** questions

20. How will you make a monolithic IC? Explain how a transistor can be constructed in a monolithic IC.

21. Explain the construction and working of R-2R ladder digital to analog converter with Op-Amp.

22. Explain with example for the design of an analog circuit for the solution of differential equation.

23. Describe the IN instruction and its timing diagram. Also discuss about the timing diagram for IN FEH instruction.

24. Explain how a seven segment display can be interfaced to 8085. Write the programme for the same with flow chart.