This question paper contains **4** printed pages]

Roll No. | | | | | | | | | | | |

S. No. of Question Paper : **6894**

Unique Paper Code : **222661** **D**

Name of the Paper : **Microprocessor (ELPT-606)**

Name of the Course : **B.Sc. Physical Science (Electronics)**

Semester : **VI**

Duration : **3 Hours** Maximum Marks : **75**

(Write your Roll No. on the top immediately on receipt of this question paper.)

Attempt any *Five* questions of the following.

All questions carry equal marks.

(Begin each question on a new page of the answer sheet and write all parts of a questions together)

1. Attempt any *five* questions of the following :

   (*a*) If the clock frequency of a microprocessor is 5 MHz, how much time is required to execute an instruction of 18 T states ?

   (*b*) What is stack memory ?

   (*c*) Differentiate between maskable and non-maskable interrupts.

P.T.O.

(*d*) Explain the working of the following instructions :

(*i*) LHLD 16 bit

(*ii*) XRA R

(*iii*) CMP M

(*e*) What are tri-state devices ? Why are they essential in a bus-oriented system ?

(*f*) A micro-computer has memory locations from 0000H to 03FFH. Each memory location stores 1 byte. What is the number of bytes of decimal which can be stored in the memory of the micro-computer ? Write your answer in kilobytes as well.

(*g*) Write a brief account on evolution of microprocessors. 5×3=15

2. (*a*) Describe in detail the various categories in which assembly language instructions in 8085 microprocessor are classified. 10

(*b*) Write an assembly language program to multiply and *two* hexadecimal numbers. 5

3. (*a*) Give a labelled pin-out diagram of 8085 microprocessor. Explain the *six* categories into which all the signals can be classified. 10

(*b*) Identify the addressing modes of the following instructions : 5

(*i*) MOV B,M

(*ii*) LXI H, 2100H

(*iii*) CMA

(*iv*) LDAX B

(*v*) STA 2150H.

4. (*a*) Show bit positions of various flags in the flag register and give their description. 5

(*b*) Explain demultiplexing of address and data bus in 8085 microprocessor with the help of a suitable diagram. What is the role of ALE ? 5

(*c*) Specify the four control signals commonly used by the 8085 MPU and draw a logic circuit diagram for the generation of the signals. 5

5. (*a*) Draw and explain timing diagram of the instruction STA 3060H. 10

(*b*) Explain PUSH and POP instructions. 5

6. (*a*) Describe the various timer modes of 8155 PID. 10

(*b*) Explain the instruction SIM. 5

7. (*a*) Draw and explain the block diagram of 8257 DMA. 10

(*b*) What are the various priority modes in 8259 PIC ? 5

8. (*a*) Give a back diagram showing major components of 8086 microprocessor. 5

(*b*) Give the pin out diagram of 8051 microcontroller. 5

(*c*) What do you understand by parallel interface bus standard ? Explain IEEE-488 bus standard. 5