

This question paper contains 3 printed pages.]

Your Roll No.

1406

A

B.Sc. (Hons.)/III

ELECTRONICS – Paper – 3.1(XV)

(Microprocessors and Micro-computer Technology)

Time : 3 Hours

Maximum Marks : 38

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

Attempt Five questions in all, including

Question No. 1 which is compulsory.

1. (a) Identify the machine cycle sequence and addressing mode of the instruction ANAM
- (b) How many input and output devices can be connected to 8085 processor using simple I/O map I/O technique? Justify your answer.
- (c) Differentiate between RESET and JMP 0000H.
- (d) What should be the minimum duration of INTR signal to be recognised ? Justify your answer.
- (e) What is the function of ALE and ADSTB signal ? $2 \times 5 = 10$
2. (a) Design $2K \times 8$ RAM. using $1K \times 4$ available RAMs, starting from address 8000H.

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[P.T.O.]

- (b) Write a program to transfer a block of memory of size 400 bytes from XX00H to YY00H. 4
3. (a) Write a program to retrieve contents of memory location which is 8 locations away from the current position of stack pointer, without using POP instruction. 3
- (b) Explain the function performed by the following instructions with an example each
CC, RZ, PUSH PSW, XTHL 4
4. (a) Write initial sequence of instructions for interrupt service routine of RST 7.5, so that while executing it if another interrupt request comes then only request at RST 6.5 or RST 5.5 can be accepted and if an interrupt request comes at RST 7.5, it is to be ignored. 2
- (b) Design a 1-minute timer using a 50Hz power line as an interrupting source. The output ports should display minutes and seconds in BCD. At the end of the minute, the output port should continue displaying one minute and zero seconds. 5
5. (a) What is the need for handshaking signals? Explain the mechanism of data input with the help of handshaking signals. 3
- (b) Design a square wave generator with a pulse width of 250 micro second using 8155 timer assume the clock frequency is 2MHz and base address of 8155 is 20H. 4

6. (a) Explain the following modes with reference to 8279 :
- (i) 2 Key lockout and NKey Rollover
 - (ii) Left entry and right entry data display 4
- (b) Write initialisation instruction to configure the 8279 in decoded scan, 2 Key Lockout, right entry, 8 character display. Command Port Address of 8279 is 1800H. 3
7. (a) Draw a block diagram of DMA controller and explain why an external latch is needed to interface DMA controller to 8085. 3
- (b) Give the architecture of 8086 processor and briefly explain the function of segment logistics. 4