AR – 620

Sixth Semester B. Sc. (Part–III) Examination

6S–ELECTRONICS

(Advanced Microprocessor and Microcontroller)

P. Pages : 6

Time : Three Hours] [Max. Marks : 80

Note : (1) Question no. **one** is compulsory.
(2) Draw neat diagram wherever necessary.

1. (A) Fill in the blanks with appropriate words :—

(i) 8086 µp have —— operating mode.

(ii) In 8051 microcontroller PC stands for —— .

(iii) AVR AT mega 32 A is ..... pin IC.

(iv) PCON stands for 2

(B) Choose the correct alternative :—

(i) Addressing mode of MOVAX, BX is .....

(a) Register Addressing mode

(b) Immediate addressing mode

(c) Based addressing mode

(d) Register indirect addressing mode.

(ii) Asynchronous communication means .....

(a) Parallel

(b) Serial

(c) Serial and parallel

(d) None.

(iii) IC 8255 is used for .....

(a) Connector

(b) Interfacing

(c) I/O Device

(d) None.

(iv) SP is known as .....

(a) Stack pointer

(b) Status programme

(c) Status pointer

(d) Stack parrity. 2

(C) Answer in **one** sentence only :—

(i) How many flags do the 8086 µp have ?

(ii) What is the function of carry flag in 8086 µp ?

(iii) Write addressing mode of instruction MOV BX , [SI].

(iv) State Index registers of 8086 µp. 4

EITHER

2. (A) Draw a well labelled block diagram of 8086 and explain the function of each block. 8

(B) Explain general purpose registers of 8086 µp. 4

OR

(P) Explain various status flags of 8086 µp with suitable diagram. 8

(Q) What is the width of address and data bus in 8086 µp ? How many memory location and I/O devices directly address ? 4

EITHER

3. (A) What is Bus Cycle ? Draw the timing diagram for memory read operation in minimum mode and explain. 8

(B) Explain register and register indirect addressing mode of 8086 with suitable example. 4

OR

(P) Draw the flow chart and write an ALP to add the data given at an offset 0301 H and 0401 H and stored the result at offset 0501. The data segment starting from 2000 H. 6

(Q) Explain various Arithmetic instructions of 8086 µp with suitable example. 6

EITHER

4. (A) Differentiate between Microprocessor and Microcontroller. 4

(B) Draw the block diagram of microcontroller 8051 and explain the function of each block. 8

OR

(P) What is SFR ? Explain various SFR in 8051 microcontroller. 6

(Q) Explain the flag register of 8051 microcontroller. 6

EITHER

5. (A) Explain addressing modes of 8051 microcontroller. 6

(B) Write an ALP for the addition of two numbers 62 H and 24 H for 8051 microcontroller. Draw the flow chart for same. 6

OR

(P) Explain the following instruction of 8051 microcontroller.

(i) MOV 10H, # 10 H,

(ii) ADD A, @ R_0

(iii) MUL AB ,

(iv) ANL A, R_5. 4

(Q) Write an ALP for the subtraction of two numbers 54 H and 36 H for 8051 microcontroller. Draw the flow chart. 6

(R) Explain SWAPA instruction of 8051 microcontroller. 2

EITHER

6. (A) What is interfacing ? Explain interfacing of RS 232 with 8051 microcontroller. 6

(B) Explain simplex, half and full duplex transmission. 6

OR

(P) Differentiate between idle and power down mode of 8051 microcontroller. 6

(Q) Explain with suitable diagram Interfacing of DAC with 8051 microcontroller. 6

EITHER

7. (A) Draw the block diagram of AVR AT mega 82 A and explain each block. 8

(B) Explain X , Y , Z Registers used in AT mega 32 A microcontroller. 4

OR

(P) Explain SRAM data memory map of AT mega 32 A microcontroller. 6

(Q) Draw the block diagram of AVR CPU Core and explain the function of ALU Block. 6