USELT08 - Electronics Paper-II : Interfacing, PPI Devices and Microcontroller

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Notes : 1. All questions are compulsory and carry equal marks.
2. Draw well labelled diagrams wherever necessary.
3. Use of calculator and log table is allowed.

Either:

1. a) Explain: **5**

1) Memory mapped I/O Scheme

2) I/O mapped I/O Scheme

b) Explain the need of interfacing. **5**

OR

c) Explain the concept of Interrupt driven data transfer. **5**

d) Explain the burst mode & cycle stealing in DMA data transfer scheme. **5**

Either:

2. a) Draw block diagram of Programmable Peripheral Interface (PPI) Intel 8255 and explain. **5**

b) Explain the control word format of PPI 8255. **5**

OR

c) Draw the schematic diagram of Programmable Counter / Interval Timer Intel 8253. **5**

d) Explain the operation of 8253 in mode 0 and mode 1. **5**

Either:

3. a) Draw the block diagram of 8051 microcontroller and explain the function of each block. **6**

b) Explain the family of 8051 microcontroller. **4**

OR

c) Explain Program status Word (PSW) in 8051 microcontrollers. **5**

d) State and explain any two instructions for arithmetic operation with example. **5**

Either:

4. a) Explain the various addressing modes of 8051 microcontroller. **5**

b) Explain I/O ports & their functions with suitable diagram. **5**

OR

c) Write the Assembly language program to perform addition using 8051 microcontroller instructions. **5**

d) Explain the meaning of following instructions: **5**

1) ADD A, Rn

2) ANL A, direct

5. Attempt **any ten** of the followings. **10**

a) What is synchronous data transfer?

b) What is meant by address space partitioning?

c) State the advantage of DMA data transfer scheme.

d) Name the IC used for programmable DMA controller.

e) What is the need of interfacing devices?

f) State the operating modes of 8255.

g) What is function of ALU in 8051 microcontroller?

h) Explain the function of program counter in 8051 microcontroller.

i) Explain the call instruction in 8051 microcontroller.

j) State the function of an instruction MOV direct, A.

k) State the meaning of an instruction SUB A, Rn.

l) How many ports are there in 8051 microcontroller?

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