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BTECH
(SEM VI) THEORY EXAMINATION 2023-24
MICROPROCESSOR AND MICROCONTROLLER

TIME: 3 HRS

M.MARKS: 100

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief.

2 x 10 = 20

a.	What is bus? What are different types of buses supported by 8085?	02
b.	What are the uses of accumulator register?	02
c.	Give the flag status of 8085 when following additions are performed →52H+A8H	02
d.	Discuss the flag registers of 8086 MP.	02
e.	Explain the following programming techniques in 8085 microprocessors. 1. Looping 2. Indexing 3. Counting	02
f.	Which Control signals are used for DMA operation?	02
g.	In 8255, which port can be used in all modes of operation and which port is used for handshake signals?	02
h.	Explain TCON and TMOD SFR for 8051 Microcontroller.	02
i.	What is PSW in 8051 microcontrollers?	02
j.	State the function of RS1 and RS0 bits in the flag register of Intel 8051 microcontroller?	02

SECTION B

2. Attempt any *three* of the following:

3 x 10 = 30

a.	Identify the addressing modes of 8085 microprocessor and explain them 1. MVI B,45H 2. ADD B 3. LDA 2050H	10
b.	Explain all the addressing modes of 8086 microprocessor?	10
c.	Explain 8255 PPI in detail. And discuss its mode 1 and mode 2 operation.	10
d.	List main feature of 8051 microcontroller. Explain the internal data memory organization of 8051 microcontroller?	10
e.	What do you mean by assembly language programming? What is the function of JUMP and CALL instruction? https://www.aktuonline.com	10

SECTION C

3. Attempt any *one* part of the following:

1 x 10 = 10

a.	Discuss with the help of timing diagram that how microprocessor can fetch the opcode and how many T - states are required to complete this cycle?	10
b.	How many types of interrupts are there in 8086 microprocessors? Give the explanation in details.	10

4. Attempt any *one* part of the following:

1 x 10 = 10

a.	Write an assembly level program to find the highest number from a given number.	10
b.	Discuss Read cycle timing diagram for Minimum mode in 8086 microprocessors?	10

5. Attempt any *one* part of the following:

1 x 10 = 10



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TIME: 3 HRS**M.MARKS: 100**

a.	What do you understand by DMA controller? With the help of block diagram explain the working of 8237.	10
b.	Explain different modes of operation of 8254?	10
6. Attempt any one part of the following:		1 x 10 = 10
a.	What is the difference between Harvard Architecture and von Neumann Architecture?	10
b.	Draw & explain the pin diagram of 8051 microcontroller.	10
7. Attempt any one part of the following:		1 x 10 = 10
a.	What is the difference between PIC and ARM processor? Explain their application areas.	10
b.	Explain all the arithmetic & logical instructions of 8051 microcontroller.	10

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