PAPER ID-310310

Subject Code: KEC502

Roll No: | | | | | | | | | | | | | |

BTECH

(SEM V)THEORY EXAMINATION 2020-21

MICROPROCESSOR AND MICROCONTROLLER

Time: 3 Hours ***Total 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

Qno.	Question	Marks	CO
a.	Discuss the significance of Accumulator in 8085	2	1
b.	Evaluate the role of temporary registers in 8085.	2	1
c.	Differentiate between microprocessor and microcontroller.	2	2
d.	Evaluate the functions of ALU in microprocessor.	2	2
e.	Investigate the need of pre-fetch instruction queue in 8086.	2	3
f.	Explain Direct Memory Access(DMA).	2	3
g.	Describe the different flags available in 8051 Program Status Word.	2	4
h.	Explain the utility of the register banks in 8051.	2	4
i.	Compare the immediate and direct addressing mode in context to 8051 instruction set.	2	5
j.	List all the interrupts available in 8051.	2	5

SECTION B

2. Attempt any *three* of the following:

Qno.	Question	Marks	CO
a.	Explain the different flags available in 8085 along-with the flag register. Also explain the various general purpose registers available in 8085.	10	1
b.	Illustrate the various addressing modes in 8085 along-with suitable examples.	10	2
c.	Discuss the memory segmentation in 8086 and the various segments of the memory.	10	3
d.	Illustrate the pin diagram of 8051 with the help of a suitable diagram and explain the utility of the pins available in 8051.	10	4
e.	Evaluate the utility of assembler directives and the types of assembler directives in 8051. Write a program in assembly language to move the data 15H to RAM locations 20 H- 28 H with suitable assembler directives in the code.	10	5

SECTION C

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

Qno.	Question	Marks	CO
a.	Demonstrate the architecture of 8085 microprocessor in detail.	10	1
b.	Illustrate the functional pin diagram of 8085 microprocessor.	10	1

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

Qno.	Question	Marks	CO
a.	Illustrate the following instructions of 8085 along-with suitable diagram (i) ADD, ADI (ii) ANA, ANI (iii) RLC (iv) RAL (iv) XTHL	10	2
b.	List the hardware and software interrupts in 8085 and also explain the interrupts in detail.	10	2

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

Qno.	Question	Marks	CO
a.	Illustrate the process of DMA with the help of 8237 DMA controller.	10	3
b.	Explain the pin diagram of 8255 along-with the block diagram.	10	3

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

Qno.	Question	Marks	CO
a.	Discuss the various addressing modes in 8085 along-with examples.	10	4
b.	Explain the internal memory organization of the microcontroller 8051.	10	4

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

Qno.	Question	Marks	CO
a.	Discuss the various data transfer and branching instructions available in 8051 controller along-with suitable examples.	10	5
b.	Explain the timers available in 8051 and also discuss the utility of TCON and TMOD registers.	10	5