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B.Tech. Examination, 2016

(Fourth Semester)

(CS Branches)

Paper - V

INTRODUCTION TO MICROPROCESSOR

Time Allowed : Three Hours

Maximum Marks : 100

Note : Do any five. All questions carry equal marks.

Q. 1 (a) What are the basic functions of microprocessor ? Differentiate between microprocessor & microcomputer. **10**

(b) Explain pipelining & parallel processing. **10**

Q. 2. (a) Draw & explain the pin diagram of 8085 microprocessor. **10**

(b) What are the various types of addressing modes supported by 8086 microprocessor ? **10**

Q. 3. (a) Write an 8086 assembly language program to calculate factorial number (N = 8) using recursive procedure. **10**

(b) How assembler MACRO differ from procedure ? What are the advantages of MACRO over procedure. **10**

P.T.O.

Q. 4. What is DMA ? Explain with neat diagram the internal architecture of 8237 DMA controller. 20

Q. 5. (a) Describe memory segmentation. How can it generate the physics address ? Explain with an example. 10

(b) Draw & discuss the asynchronous mode transmitter & receiver data format of 8251. 10

Q. 6. (a) What are the main differences between 8085 & 8086 microprocessor ? 10

(b) Describe the sequence of signals that occurs on the address bus, the control bus and the data bus when a simple microcomputer fetches an instruction. 10

Q. 7. Write short note on any four : 5×4=20

(i) RS232C

(ii) SRAM & DRAM

(iii) Address bus.

(iv) Stack flag of 8085

(v) Hardware interrupts

(vi) Any four 8086 instruction set

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B.Tech. Examination, 2015

(Fourth Semester)

(CS Branches)

Paper - V

INTRODUCTION TO MICROPROCESSOR

Time Allowed : Three Hours

Maximum Marks : 100

Note : Do any five questions. All questions carry equal marks.

Q. 1. (a) What is system bus ? How many types of Buses used in 8085 microprocessor ? Explain. **10×2**

(b) What is microprocessor ? Give the basic difference between microprocessor and microcomputer ?

Q. 2. (a) Draw and explain the block diagram of 8085 microprocessor ? **10×2**

(b) Explain the working of the following pin of 8085 :

(i) ALE

(ii) HOLD

(iii) READY

(iv) X_1 and X_2

(v) $\overline{RD}$ and $\overline{WR}$

Q. 3. (a) Define instruction cycle, machine cycle and T-states. How they are related ? Explain with proper sketch. **10×2**

(b) Differentiate between stack and subroutine. Explain the function of following routines :

(i)
```
LXI SP, 209FH
MVI C, OOH
PUSH B
POP PSW
RET
```

(ii)
```
LXI SP, STACK
PUSH B
PUSH D
POP B
POP D
RET
```

Q. 4. (a) Explain in brief the various types of addressing mode with suitable example ? **10×2**

(b) Discuss and compare JMP and CALL instruction.

Q. 5. (a) Draw and explain the internal block diagram of 8086. **10×2**

(b) How physical address is generated in 8086. Explain with an example.

Q. 6. (a) What is DMA ? Explain and illustrate the mode set register format of 8257, also give the block diagram of 8257. **10×2**

(b) Draw and explain the functional block diagram of 8259. Also discuss the operating mode of 8259 programmable interrupt controller ?

Q. 7. (a) What do you understand by interrupt ? Explain various interrupts in 8085 microprocessor. **10×2**

(b) (i) What do you think it is necessary for the 8085 to have two status lines S_1 and S_0 ?

(ii) What is the difference between 8253 and 8254 ?

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B.Tech. Examination, 2014
(Fourth Semester)
(CS Branches)
Paper - V

INTRODUCTION TO MICROPROCESSOR

Time Allowed : Three Hours

Maximum Marks : 100

Note : Do any five questions. All questions carry equal marks..

Q. 1. (a) Illustrate the general bus organisation of a microprocessor. Also explain the function of timing and control unit of a general microprocessor. **10×2=20**

(b) Discuss microprocessor evolution and types.

Q. 2. (a) What is bus ? What are different types of buses supported by 8085 ? How the processor sends and receives information from memory and I/O devices ? Explain. **10×2=20**

(b) Draw the pin-diagram of 8085 microprocessor and give the name of signals associated with timing and control circuit and explain.

P.T.O.

Q. 3. (a) Describe the memory organisation and I/O addressing capability of 8086 microprocessor. **10×2=20**

(b) Explain the role and working of latches and transceiver (data buff.er) in minimum mode of 8086 system.

Q. 4. (a) What are the flags in 8086 ? Write a program in assembly language to sum a series of 16-bit numbers using SI register. **10×2=20**

(b) Write down the different types of assembler directives of 8086. Explain any two in details.

Q. 5. (a) Explain the different mode of operation of 8255 PPI. **10×2=20**

(b) Draw the architecture of 8253, programmable timer/counter, and explain each block.

Q. 6. (a) Explain the priorities of DMA request. How is the request served by DMA controller ? **10×2=20**

(b) Specify the salient features of pentium processor.

Q. 7. (a) Why refresher circuit is required in Dynamic RAM ? Enlist differences between static RAM and dynamic RAM. **10×2=20**

(b) What are different types of register associated with 32 bit processor ?