

**B.Tech.****(SEM. V) ODD SEMESTER THEORY****EXAMINATION, 2017-18****MICROPROCESSOR & ITS APPLICATIONS****Time : 3 Hours****Max. Marks : 100****Note :** Attempt all sections. Assume any missing data.**SECTION-A****1. Attempt all questions in brief. (2 × 10 = 20)****a. Write about the basic difference between microprocessor and microcontroller.****Ans.** Refer Q. 1.14, Page SQ-3B, Unit-1, 2 Marks Questions.**b. What are interfacing logical devices ?****Ans.** Refer Q. 1.15, Page SQ-3B, Unit-1, 2 Marks Questions.**c. Define following :****i. Nibble                      ii. Word****Ans.** Refer Q. 4.13, Page SQ-12B, Unit-4, 2 Marks Questions.**d. Define following :****i. Mnemonics      ii. Program****Ans.** Refer Q. 4.8, Page SQ-11B, Unit-4, 2 Marks Questions.**e. Write basic operations of microprocessor with block diagram.****Ans.** Refer Q. 1.13, Page SQ-2B, Unit-1, 2 Marks Questions.**f. Write about different languages of digital computer.****Ans.** Refer Q. 1.12, Page SQ-2B, Unit-1, 2 Marks Questions.**g. Define compiler or interpreter in programming languages.****Ans.** Refer Q. 4.10, Page SQ-12B, Unit-4, 2 Marks Questions.**h. Explain different types of interrupts in 8085.****Ans.** Refer Q. 2.7, Page SQ-4B, Unit-2, 2 Marks Questions.**i. Draw flag register of 8085.****Ans.** Refer Q. 2.14, Page SQ-6B, Unit-2, 2 Marks Questions.

j. Write about types of addressing mode in 8086.

**Ans.** Refer Q. 3.17, Page SQ-10B, Unit-3, 2 Marks Questions.

### SECTION-B

2. Attempt any **three** parts of the following : (10 × 3 = 30)

a. Explain minimum mode operation of 8086 microprocessor with block diagram.

**Ans.** Refer Q. 3.12, Page 3-14B, Unit-3.

b. Compare procedure & macros in assembler directives of 8086.

**Ans.** Refer Q. 3.30, Page 3-35B, Unit-3.

c. Explain the following instructions of 8085 microprocessor

i. POP PSW

ii. XTHL

iii. SPHL

iv. PUSH PSW

v. CMP M

**Ans.** Refer Q. 2.16, Page 2-20B, Unit-2.

d. Give the features and functional block diagram of 8237 DMA controller.

**Ans.** Refer Q. 5.11, Page 5-13B, Unit-5.

e. Explain the internal architecture of 8255.

**Ans.** Refer Q. 5.14, Page 5-17B, Unit-5.

3. Attempt any **one** part of the following : (10 × 1 = 10)

a. Explain evolution of microprocessor with its different generation. What do you mean by addressing mode, explain different addressing mode used in 8085 with suitable example.

**Ans.** Refer Q. 2.11, Page 2-14B, Unit-2.

b. Draw architecture of 8086 and explain its different unit. What do you mean by pipelining and explain the concept of memory segmentation.

**Ans.** Refer Q. 3.11, Page 3-13B, Unit-3.

4. Attempt any **one** part of the following : (10 × 1 = 10)

a. Explain assembler level programming and draw the flowchart of assembler level programming.

**Ans.** Refer Q. 4.9, Page 4-8B, Unit-4.



b. Explain following :

i. 8259 programmable interrupt controller.

**Ans.** Refer Q. 5.27, Page 5-34B, Unit-5.

ii. Development tools : Editor, Library builder, Linker, Emulator.

**Ans.** Refer Q. 4.4, Page 4-4B, Unit-4.

5. Attempt any one part of following :

(10 × 1 = 10)

a. Explain different mode of operation of 8259 A.

**Ans.** Refer Q. 5.30, Page 5-37B, Unit-5.

b. Explain minimum and maximum operating modes of 8086 with timing diagram.

**Ans.** Refer Q. 3.15, Page 3-19B, Unit-3.

6. Attempt any one part of the following :

(10 × 1 = 10)

a. Draw and explain block diagram and pin configuration of IC-8253.

**Ans.** Refer Q. 5.24, Page 5-29B, Unit-5.

b. Write an assembly level program to find square root of given number.

**Ans.** Refer Q. 4.15, Page 4-14B, Unit-4.

7. Attempt any one part of the following :

(10 × 1 = 10)

a. Explain the interrupts sequence and types of interrupt in 8086.

**Ans.** Refer Q. 3.29, Page 3-34B, Unit-3.

b. Draw and explain the memory and I/O read cycle of 8085.

**Ans.** Refer Q. 2.21, Page 2-26B, Unit-2.

