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Question Paper Code	12896
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B.E. / B.Tech. - DEGREE EXAMINATIONS, APRIL / MAY 2024

Fifth Semester

Computer Science and Engineering

(Common to Information Technology)

20ESEC502 – MICROPROCESORS AND MICROCONTROLLERS

Regulations - 2020

Duration: 3 Hours

Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

	Marks	K- Level	CO
1. Define Instruction Cycle.	2	K1	CO1
2. Give the different segment registers in 8086 Microprocessors.	2	K1	CO1
3. What is the REP prefix? How does it function for string instructions?	2	K1	CO2
4. What is the use of ALE?	2	K1	CO2
5. Define loader.	2	K1	CO3
6. State Modular Programming.	2	K1	CO3
7. List the advantages of Programmable interval Timer / Counter IC.	2	K1	CO4
8. What is the difference between two key lockout and N- key rollover modes in 8279?	2	K2	CO4
9. What is the function of RET instruction in 8051?	2	K1	CO5
10. Name the flags that are stored in PSW in 8051.	2	K1	CO5

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

11. a) With a neat diagram, explain about the Even and Odd Memory Banks used in 8086 Microprocessor.	13	K2	CO1
OR			
b) i) How many functional units does 8086 contain? Discuss them in brief.	6	K2	CO1
ii) With an example, Explain the various addressing modes in detail.	7	K2	CO1
12. a) List the types of instruction set used in 8086 Microprocessor. Explain in detail about the data manipulation and control instruction set of 8086 with examples.	13	K2	CO2
OR			
b) i) Explain about the I/O Read bus cycle used in 8086 with a neat sketch.	7	K2	CO2
ii) Draw and explain about the Memory Write bus cycle used in 8086.	6	K2	CO2

13. a) Write an Assembly Language Program to reverse the string “sairam”. 13 K2 CO3

OR

b) Explain with Assembly Language Program the following code conversions.

i) ASCII to Binary

7 K2 CO3

ii) Binary to ASCII

6 K2 CO3

14. a) Explain the function block diagram of DMA Controller interface.

13 K2 CO4

OR

b) Discuss briefly about Keyboard/Display controller 8279 with a neat diagram.

13 K2 CO4

15. a) With a neat diagram, explain in detail about the architecture of 8051.

13 K2 CO5

OR

b) Discuss about the Data Transfer and Branch Instructions used in 8051.

13 K2 CO5

PART - C (1 × 15 = 15 Marks)

16. a) Explain in detail about 8051 serial port programming with an example program.

15 K2 CO6

OR

b) Illustrate the interfacing of stepper motor with necessary diagrams and program.

15 K2 CO6