Reg. No. : | | | | | | | | | | |

Question Paper Code: 54426

B.E. / B.Tech. DEGREE EXAMINATION, DEC 2020

Fourth Semester

Computer Science and Engineering

15UEC426– MICROPROCESSORS AND MICROCONTROLLERS

(Regulation 2015)

Duration: 1.15 hrs Maximum: 30 Marks

PART A - (6 x 1 = 6 Marks)

(Answer any six of the following questions)

1. The add operations in the 8086 can be categorized as follows CO1- R

   (a) Data transfer (b) Arithmetic (c) Logical group (d) Shift group

2. A machine language instruction format consists of CO1-U

   (a) Operand field (b) Operation code field

   (c) Operation code field & operand field (d) none of the mentioned

3. Port C of 8255 can function independently as CO2- R

   (a) Input port (b) Output port

   (c) Either input or output port (d) Both input and output port

4. In BSR (Bit Set-Reset) mode, only port C can be used to CO2-U

   (a) set individual ports (b) reset individual ports

   (c) set and reset individual ports (d) programmable I/O ports

5. The internal RAM memory of the 8051 is CO3- R

   (a) 32 bytes (b) 64 bytes (c) 128 bytes (d) 256 bytes

6. The logical instruction that affects the carry flag during its execution is CO3-U

   (a) XRL A (b) ANL A (c) ORL A (d) RLC A

7. Number of input ports in the 8051 microcontroller CO4- R

   (a) 3 ports (b) 4 ports (c) 5 ports (d) 4 ports with 5 pins

8. What is the difference between LM 34 and LM 35 sensors? CO4-U

(a) one is a sensor and the other is a transducer

(b) one's output voltage corresponds to the Fahrenheit temperature and the other corresponds to the Celsius temperature

(c) one is of low precision and the other is of higher precision

(d) one requires external calibration and the other doesn't require it

9. How many clock pulses are confined by each machine cycle of PIC CO5- R

(a) 4 (b) 8 (c) 12 (d) 16

10. Which flags are more likely to get affected in status registers by Arithmetic and Logical Unit (ALU) of PIC 16 CXX on the basis of instructions execution? CO5-U

(a) Carry(C) Flags (b) Zero (Z) Flags

(c) Digit Carry (DC) Flags (d) All of the above

PART – B (3 x 8= 24 Marks)

(Answer any three of the following questions)

11. Explain the architecture of 8086 microprocessor with a neat diagram. CO1- U (8)

12. Explain in detail about DMA microcontroller with a neat sketch. CO2- U (8)

13. Describe the different modes of operation of timers in 8051 with its registers. CO3- U (8)

14. Draw the diagram to interface a stepper motor with 8051 microcontroller and write an ALP to run the stepper motor in both forward and reverse directions. CO4- App (8)

15. With a neat diagram discuss in detail about the architecture of PIC microcontroller. CO5- U (8)