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**Reg. No. :**

**Question Paper Code: 45062**

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2017

Fifth Semester

Instrumentation and Control Engineering

14UIC502 - MICROPROCESSORS AND CONTROLLER

 (Regulation 2014)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

 1. The purpose of the microprocessor is to control

(a) memory (b) switches (c) processing (d) tasks

 2. A 4 bit binary code is called

 (a) Nibble (b) Word (c) Byte (d) Bit

 3. \_\_\_\_\_is used for serial communication interface.

 (a) 8251 (b) 8055 (c) 8237 (d) 8255

 4. \_\_\_\_\_\_\_\_a subsystem that transfer data between computer components inside a computer or between computer:

 (a) Chip (b) Register (c) Processor (d) Bus

5. The 8051 microcontroller is of \_\_\_pin package as a \_\_\_\_\_\_ processor.

 (a) 30, 1byte (b) 20, 1 byte (c) 40, 8 bit (d) 40, 8 byte

6. All the functions of the ports of 8255 are achieved by programming the bits of an internal register called

 (a) data bus control (b) read logic control (c) control word register (d) none of the above

7. In 8051 which interrupt has highest priority?

 (a)IE1 (b)TF0 (c)IE0 (d)TF1

8. Port C of 8255 can function independently as

 (a) input port (b) output port (c) a either input or output ports (d) both input and output port

9. An embedded system must have

 (a) Hard disk (b) Processor and memory

 (c) Operating system (d) Processor and input-output unit(s)

10. The PCI BUS has \_\_\_\_\_ interrupt request lines.

(a) 6 (b) 1  (c) 4 (d) 3

 PART - B (5 x 2 = 10 Marks)

11. Write the flags of 8086.

12. What is the instruction formats used in 8085?

13. Write the basic components of Microcontroller.

14. List the operating modes of 8255A PPI.

15. What are the applications of embedded system?

PART - C (5 x 16 = 80 Marks)

16.(a) (i) Draw and discuss the internal block diagram of 8085 Microprocessor. (8)

 (ii) Explain the concept of interrupt and the interrupt vector table of 8085 μp. (8)

 Or

 (b) Explain in detail about minimum mode 8086 based system. (16)

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17. (a) Explain in details the addressing modes for 8085. (16)

 Or

 (b) Write a program to sort given 10 numbers from memory location 2200H in the descending order. (16)

18. (a) Explain with a neat block diagram the architecture of 8051 microcontroller. (16)

 Or

R(z)

$$\frac{1}{s(s+1)}$$

ZOH

C(z)

T

T

-

+

R(z)

$$\frac{1}{s(s+1)}$$

ZOH

C(z)

T

T

-

+

 (b) Discuss the Various addressing modes of 8051 microcontroller**.** (16)

 19. (a) Describe in detail about 8085 microprocessor based dc motor speed control

 system. (16)

 Or

 (b) (i) Brief the salient features of a parallel programmable interface, 8255. (6)

 (ii) Draw and explain the block diagram of programmable interrupt controller 8259. (10)

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20. (a) Explain in detail about embedded system design process with neat diagram. (16) Or

 (b) Explain the various forms of memories present in a system. (16)