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

Question Paper Code: 41652

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2016

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. In 8085 name the 16 bit registers.

   (a) stack pointer (b) program counter (c) IR (d) (a) and (b)

2. The intel 8086 microprocessor is a _____ processor

   (a) 8 bit (b) 16 bit (c) 32 bit (d) 4 bit

3. In an 8085 microprocessor, the instruction CMP B has been executed while the contents of accumulator are less than that of register B. As a result carry flag and zero flag will be respectively

   (a) set, reset (b) reset, set (c) reset, reset (d) set, set

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. In 8051 which interrupt has highest priority?

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

7. 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

8. A stepper motor is

(a) a DC motor (b) a single-phase AC motor
(c) a multi-phase motor (d) a two phase motor

9. An embedded system must have

(a) hard disk (b) processor and memory
(c) operating system (d) processor and input-output unit(s)

10. Memory management technique, in which system stores and retrieves data from secondary storage for use in main memory is called

(a) fragmentation (b) paging
(c) mapping (d) none of the mentioned

PART - B (5 x 2 = 10 Marks)

11. List the operations performed by IO/M in 8085.

12. Give the instruction formats used in 8085.

13. Summarize the importance of special function registers (SPF) in 8051.

14. List the operating modes of 8255A PPI.

15. Mention the major challenges in embedded system design.

PART - C (5 x 16 = 80 Marks)

16. (a) Draw and explain the architecture of 8085 processor. (16)

Or

(b) Draw and explain the architecture of 8086 processor. (16)

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

Or

(b) Write short notes on subroutines and stack. (16)

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

Or

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

19. (a) (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)

Or

(b) Explain with a neat diagram the closed loop control of servo motor using microcontroller. (16)

20. (a) Explain in detail the design process involved in embedded system. (16)

Or

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

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