(6 pages) **Reg. No. :** .....

Code No. : SS 5861 Sub. Code : PPHM 23

M.Sc. (CBCS) DEGREE (Special Supplementary) EXAMINATION, APRIL 2020.

Second Semester

Physics

MICROPROCESSOR 8085 AND MICROCONTROLLER 8051

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 1 = 10$ marks)

Answer ALL questions.

Choose the correct answer:

1. Register pair to indicate memory address
   (a) A and B
   (b) B and C
   (c) D and E
   (d) H and L

2. Which stack operation is used in 8085?

(a) FIFO (b) LIFO

(c) LOLI (d) LILO

3. An instruction does not contain a memory address

(a) LDA instruction

(b) ADD instruction

(c) SUB instruction

(d) HLT instruction

4. Which instruction does not affect the flag register?

(a) CMA (b) CMC

(c) CMPr (d) CPI data

5. Which instruction is used to fill to implement time delays?

(a) SIM (b) JNZ

(c) HLT (d) NOP

6. Which one of the following can be used to exchange stack-top with H – L?

(a) LDAX rp

(b) LHLD addr

(c) XTHL

(d) XCHG

7. How many flags in intel 8051 PSW register?

(a) 5 (b) 6

(c) 7 (d) 8

8. In 8051 microcontroller the on chip data memory size is

(a) 32 bytes (b) 64 KB

(c) 4 KB (d) 128 byte

9. The strobed input/output mode is another name of

(a) Mode 0 (b) Mode 1

(c) Mode 2 (d) Mode 3

10. If a stepper motor has 200 steps per revolution then the step angle is

(a) 0.72 (b) 1.8

(c) 2.0 (d) 7.5

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) List the flags used in 8085 microprocessor.

Or

(b) Specify the four control signals commonly used by the 8085 microprocessor.

12. (a) What are the addressing modes for 8085 microprocessor?

Or

(b) What are two compare instructions available in 8085? Give examples.

13. (a) What are the different machine cycle available in 8085 microprocessor?

Or

(b) Explain the interfacing of RAM 2 K X8.

14. (a) What is the advantage of microcontroller over microprocessor?

Or

(b) What are the features of 8051 microcontroller?

15. (a) Explain DAC interfacing with neat diagram.

Or

(b) Write a program to generate a rectangular wave generation.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) With neat diagram explain architecture of 8085.

Or

(b) Explain special purpose registers and counters.

17. (a) Write an ALP to generate finding smallest number in an array.

Or

(b) Explain synchronous and asynchronous data transfer schemes.

18. (a) Explain the peripheral interface 8255 architecture.

Or

(b) Explain the memory and I/O interfacing.

19. (a) Draw the architecture of 8051 microcontroller and explain it.

Or

(b) Discuss any four addressing modes in 8051 microcontroller with example.

20. (a) Show interface connections to measure and control temperature of several furnaces employing a microprocessor – based system.

Or

(b) What is a stepper motor? Discuss its applications. Show interface connections for a microprocessor based scheme for controlling a stepper motor.

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