SUBJECT CODE :19PH/MC/MM53

B.Sc. DEGREE EXAMINATION NOVEMBER 2022
BRANCH III – PHYSICS

FIFTH SEMESTER
COURSE   :   MAJOR – CORE
PAPER   :   MICROPROCESSORS AND MICROCONTROLLERS
TIME   :   3 HOURS   MAX. MARKS :100
SECTION – A
ANSWER ALL QUESTIONS: **25 MARKS**
I. CHOOSE THE CORRECT ANSWER: (10 X 1 = 10)

1. The stack used in 8085 microprocessors is.
   (a) FIFO   (b) LILO   (c) LIFO   (d) none

2 The program counter in 8085,
   (a) counts number of programs being executed
   (b) counts number of instructions being executed
   (c) counts number of interrupts being handled
   (d) keeps the address of the next instruction to be fetched

3. The highest priority flag in 8085 is,
   (a) TRAP   (b) RST6.5   (c) INTR   (d) RST6.5

4. The main purpose of accumulator register in 8085 is,
   (a) temporary data storage   (b) selection of peripheral
   (c) storing instructions   (d) used as primary pointer

5. PUSH and POP operations are performed by,
   (a) program counter register   (b) general purpose register
   (c) stack pointer register   (d) link register

6. The 8085 instruction that doubles the value in accumulator is,
   (a) XRA A   (b) ADD A   (c) SUB A   (d) ORA A

7. Among the following, the instruction that affects maximum number of flags is,
   (a) RAL   (b) POP PSW   (c) XRA A   (d) DCR A

8. The address for TRAP in 8085 is,
   (a) 0024 H   (b) 002C H   (c) 0034 H   (d) 003C H

9. The instruction used to exchange the contents of register pairs is,
   (a) XCHG   (b) XTHG   (c) XMFG   (d) XHCG

10. The status flag that is available in 8085, but not available in 8051 is,
   (a) carry flag   (b) overflow flag (c) auxiliary flag (d) zero flag

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FILL IN THE BLANKS: **(5 X 1 = 5)**

11. The bus in 8085 that enables transfer of instructions between main memory and CPU is, _____ bus.
12. _____ address is a direct addressing instruction in 8085.
13. The signal used to insert wait is, _____.
14. In an assembly language program END is a _____ instruction.
15. The number of I/O pin in 8051 is _____ bit.

ANSWER BRIEFLY: **(5 X 2 = 10)**
16. What is a general purpose register in 8085?
17. What is a T cycle?
17. What is an array?
19. What is a vectored interrupt?
20. What is embedded system concept?

SECTION - B
ANSWER ANY FIVE QUESTIONS :   **(5 X 6 = 30)**
21. Explain about the general purpose registers in 8085.
22. Explain the various addressing modes in 8085.
23. Write a program for finding the square root of a positive single byte number in 8085.
24. Describe use of various the input and output ports in 8085.
25. Explain the four distinct types of memory in 8051.
26. Discuss about the various flags in 8085.
27. Explain the arithmetic instruction set along with the use for 8085.

SECTION – C
ANSWER ANY THREE QUESTIONS: **(3 X 15 = 45)**

28. (a) Describe the architecture of 8085 microprocessor with a neat diagram.
    (b) Explain its memory and I/O interface with block diagrams.

29. (a) Discuss about the various instruction cycles in 8085.
    (b) Explain its various data transfer instructions,

30. (a) What is a subroutine?
    (b) Write a program for sorting an array in ascending order.

31. (a) Discuss about various interrupts of 8085.
    (b) Explain the various interfacing devices for 8085.

32. (a) Explain the architecture of 8051 microcontroller with a neat diagram.
    (b) Mention its various applications.

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