STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI – 600 086.
(For candidates admitted during the academic year 2011-12 & thereafter)

SUBJECT CODE : 11PH/MC/MM54

B.Sc. DEGREE EXAMINATION NOVEMBER 2015
BRANCH III - PHYSICS
FIFTH SEMESTER

REG. No._____

COURSE : MAJOR – CORE
PAPER : MICROPROCESSORS AND MICROCONTROLLERS
TIME : 30 MINS. MAX. MARKS : 30

SECTION – A
TO BE ANSWERED IN THE QUESTION PAPER ITSELF

ANSWER ALL QUESTIONS: (30 x 1 = 30)

I. CHOOSE THE CORRECT ANSWER:

1. Byte is a group of _____ bits.
   a. 2 b. 4 c. 8 d.16

2. How many pins present in 8085 microprocessor?
   a. eight b. sixteen c. twenty d. forty

3. The 8085 microprocessor device has _____ general purpose registers.
   a. two b. four c. five d. six

4. Registers are sometimes called as _____.
   a. scratch pads b. data pads c. memory pads d. flag pads

5. The data bus is _____.
   a. unidirectional b. bidirectional c. tridirectional d. multidirectional

6. The 8085 microprocessor has _____ address lines.
   a. 4 b. 8 c. 16 d. 32

7. HLT is a _____ byte instruction.
   a. one b. two c. three d. four

8. Which instruction is used to copy H and L registers to the stack pointer
   a. SHLD b. SPHL c. LHLD d. XTHL

9. Stack pointer is a _____ bit register.
   a. 4 b. 8 c. 16 d. 32

10. Addition of 49_H and 85_H is
    a. CE b. CD c. CC d. CB

11. Subtraction of 29_H from $1A_H$ is
    a. C1 b. D1 c. E1 d. F1

12. PPI is a _____ device
    a. single port b. dual port c. tri port d. multi port

..2

13. TRAP is known as _____.
    a. IMN b. NMI c. INM d. MNI

14. IC 8051 family is an _____ bit controller
    a. 8 b. 16 c. 24 d. 32

15. 8051 microcontroller is capable of accessing _____ of external data memory.
    a. 8K b. 16K c. 32K d. 64K

II. FILL IN THE BLANKS:

16. MSB stands for _____.
17. The 8085 microprocessor has _____ 16 bit registers.
18. TRAP is used for_____.
19. RST 7.5, 6.5, 5.5 and INTR are _____ interrupt.
20. 8051 microcontroller has _____ input/output lines.

III. STATE WHETHER TRUE OR FALSE:

21. The zero flag is set to 1 if the result of arithmetic or logic operation is 1.
22. Accumulator is the part of arithmetic/logic unit.
23. The instruction set is classified into five groups on the basis of bytes.
24. INTR is the last interrupt in the order of interrupt priority.
25. The washing machine is an example of embedded system.

IV. ANSWER BRIEFLY:

26. What is meant by CPU?

27. Define mnemonics?

28. What is PPI?

29. What is an interrupt?

30. What is embedded microcontroller?

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TIME : 2½ HOURS MAX. MARKS : 70

SECTION – B

ANSWER ANY FIVE QUESTIONS: (5 X 5 = 25)

1. Explain the function of ALU in 8085.
2. What are the addressing modes available in 8085? Explain with examples.
3. Write an assembly language program to add two 8 bit numbers.
4. Write a program to arrange the given set of numbers in ascending order.
5. What are the basic concepts in memory interfacing?
6. Explain SIM and RIM instructions.
7. List the applications of 8051 microcontroller.

SECTION – C

ANSWER ANY THREE QUESTIONS: (3 X 15 = 45)

8. Explain arithmetic, logical and data transfer instructions of 8085.
9. Write an ALP to (i) convert hexadecimal to BCD numbers and (ii) square root of a single byte number.
10. Write down the operating modes of 8255 with suitable examples.
11. Explain the various interrupts available in 8085 with their priorities.
12. Explain 8051 microcontroller architecture with block diagram.

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