MICROPROCESSOR BASED SYSTEM (SEMESTER - 6)

CS/B.TECH(ICE/EIE(O))/SEM-6/EI-602/09

1. .....
Signature of Invigilator

2. .....
Signature of the Officer-in-Charge

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

Roll No. of the Candidate | | | | | | | | | | | | | | |

CS/B.TECH(ICE/EIE(O))/SEM-6/EI-602/09

ENGINEERING & MANAGEMENT EXAMINATIONS, JUNE – 2009

MICROPROCESSOR BASED SYSTEM (SEMESTER - 6)

Time : 3 Hours] [Full Marks : 70

INSTRUCTIONS TO THE CANDIDATES :

1. This Booklet is a Question-cum-Answer Booklet. The Booklet consists of **32 pages**. The questions of this concerned subject commence from Page No. 3.
2. a) In **Group – A**, Questions are of Multiple Choice type. You have to write the correct choice in the box provided **against each question**.
   b) For **Groups – B** & **C** you have to answer the questions in the space provided marked 'Answer Sheet'. Questions of **Group – B** are Short answer type. Questions of **Group – C** are Long answer type. Write on both sides of the paper.
3. **Fill in your Roll No. in the box** provided as in your Admit Card before answering the questions.
4. Read the instructions given inside carefully before answering.
5. You should not forget to write the corresponding question numbers while answering.
6. Do not write your name or put any special mark in the booklet that may disclose your identity, which will render you liable to disqualification. Any candidate found copying will be subject to Disciplinary Action under the relevant rules.
7. **Use of Mobile Phone and Programmable Calculator is totally prohibited in the examination hall.**
8. You should return the booklet to the invigilator at the end of the examination and should not take any page of this booklet with you outside the examination hall, **which will lead to disqualification**.
9. Rough work, if necessary is to be done in this booklet only and cross it through.

No additional sheets are to be used and no loose paper will be provided

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Marks Obtained

	Group – A										Group – B			Group – C				
Question Number																	***Total Marks***	***Examiner's Signature***
Marks Obtained																		

.....
Head-Examiner/Co-Ordinator/Scrutineer

6666 (05/06)

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GROUP – A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for any *ten* of the following : 10 × 1 = 10

i) What is the vector location for NMI ?

a) 00000H b) 00008H

c) 00010H d) 00014H.

ii) What physical address is represented by 4370 : 561EH ?

a) 4370EH b) 0561EH

c) 48D1EH d) 5A550H.

iii) JZ instruction used on only

a) A b) F

c) R0 d) none of these.

iv) The segment and offset address of the instruction to be executed by 8086 are pointed by

a) CS and SI b) DS and IP

c) CS and SP d) CS and IP.

v) The invalid instruction in case of 8086 is

a) MOV AX, 1000H b) MOV SI, 1000H

c) MOV DS, 1000H d) MOV BX, 1000H.

vi) The numbers of 16-bit timers used in 8051 are

a) 3 b) 4

c) 2 d) none of these.

vii) The ROMspace used for 8051 is

a) 4KB b) 2KB

c) 8KB d) none of these. ☐

viii) SCON Register is

a) bit addressable b) byte addressable

c) both bit & byte addressable d) none of these. ☐

ix) Data Terminal Equipment & Data Communication Equipment are both associated with

a) Asynchronous Serial Communication

b) Asynchronous Parallel Communication

c) Synchronous Parallel Communication

d) Synchronous Serial Communication. ☐

x) RS - 232C is driven by

a) Max Driver 32 b) Max Driver 33

c) Max Driver 31 d) Max Driver 34. ☐

xi) In 8255 A, total numbers of different modes are

a) 1 b) 2

c) 3 d) none of these. ☐

xii) The 8086 processor is called a 16 bit processor because

a) its data bus is 16 bit

b) its address bus is 16 bit

c) its accumulator is 16 bit

d) its memory addressing capacity is 2^{16} . ☐

xiii) Mode-5 of 8253 is

a) rate generator b) square wave generator

c) hardware triggered strobe d) software triggered strobe. ☐

xiv) The number of SRFs in 8051 are

a) 20 b) 21

c) 22 d) 23. ☐

xv) The instruction queue length of 8086 processor is

a) 8 bytes b) 6 bytes

c) 4 bytes d) 2 bytes.

GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following. 3 × 5 = 15

2. Explain the concept of segmented memory. What is the purpose of segmentation and its advantages ? 2 + 3

3. Explain the functions of the following pins : 5 × 1

   a) $\overline{LOCK}$

   b) **RQ**/$\overline{GT}$

   c) $\overline{BHE}$ / **S7**

   d) $\overline{TEST}$

   e) **MN**/$\overline{MX}$.

4. Write an assemb;y language programming to find the smallest number in a data array of ten numbers.

5. Briefly explain the working of PSW Register of 8051.

6. What is the utility of TMOD Register of 8051 ?

GROUP – C

(Long Answer Type Questions)

Answer any *three* questions. 3 × 15 = 45

7. a) What do you mean by maximum mode in 8086 system ?

   b) What are the types of interrupts available in 8086 system ? Explain.

   c) What is the interrupt vector address table ? 5 + 5 + 5

8. a) What logic instruction can be used to check the content of the accumulator; whether it is zero or not without affecting the content of the accumulator ?

   b) A string of readings is stored in memory location starting at (8070H) and the end of the string is indicated by the byte 00H. Write a program to add all the bytes in the strings. (Neglect carry if generated) and store the result in memory location (8100H).

   c) Which of the hardware interrupts of the 8086 are mask-able ?

d) Explain the functions of "SIM" and "RIM" instructions in 8085.

e) Explain clearly the functions performed by the instruction DAA. 1 + 4 + 1 + 5 + 4

9. a) What are the features of RS-232 C ?

b) Discuss the following signal description of 8051 :

i) PSEN

ii) Epp

iii) RxD

iv) ALE/PROG

v) RI & TI. 5 + (5 × 2)

10. a) Briefly discuss, with a neat diagram the architecture of 8051.

b) Discuss about the addressing modes of 8051.

c) Briefly explain the interfacing of MC1408 8-bit D/A. 5 + 4 + 6

11. a) What are the advantages of writing a program in assembly language instead of writing the program directly in machine language ?

b) Write a program to add the elements of two [3 × 3J matrix in which 1st and 2nd matrix elements are stored from 2000 and 3000 offset address and the results from 5000].

c) Pipeline architecture fast the execution process in 8086 over 8085. Explain it.

d) What is the advantage of using internal register for temporary data storage over the memory location ?

e) What is the function of 'TEST' pin in 8086 ? 3 + 5 + 3 + 2 + 2

END