

III B.Tech I Semester Supplementary Examinations, May 2005
MICROPROCESSORS AND ITS APPLICATIONS
(Production Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. (a) Explain the difference between Machine Language, Assembly Language and High Level language.
 (b) Explain the requirement of a program counter, stack pointer and status flags in the architecture of Intel 8085 Micro process.
2. (a) Explain the flag register of 8086.
 (b) Explain the concept of memory segmentation.
 (c) Explain, when Queue is failing to speed up the execution.
3. (a) Explain the following Instructions.
 i. MOV
 ii. POP
 iii. XCHG
 iv. SAHF
 (b) Write a program to convert a Binary Number to a BCD Number.
4. Give a set of macro definitions for performing the logical operations OR, AND and XOR on words whose locations are indicated by the first two dummy parameters? The result is to be put in a location RESUL. Give the solution without nesting macro definitions? Provide the solution using definition nesting for the above problem?
5. A logic network is having input variables A,B,C,D. The output variables are given

$$W = \overline{A}. \overline{BC} + ABC + \overline{AD}$$

$$X = AC + BA + AD$$
 below.

$$Y = \overline{A}. \overline{B} + \overline{A}. \overline{C} + D. \overline{B}$$

$$Z = ABC + ACD + \overline{A}. \overline{BC}$$

The array INPUT_1 contains 10 different combinations of input variables. Write an instruction sequence that determine the outputs for each combination of INPUT_1 array and store the output variables in the string OUTPUT_1.
6. (a) What is the purpose of operational command words of 8259? Explain their format and the use?
 (b) What are the different control signals necessary for I/O read and write cycles? Show how these control signals are generated in minimum and maximum modes of 8086?

7. (a) Give the advantages of using MOSFET and IGBT over Darlington pair when driving high power load with a port line?
(b) Explain the application of stepper motor in microcomputers? Discuss stepper motor interface to the processor?
8. (a) Explain demand transfer mode and block transfer mode of 8237?
(b) Show how 8237s are cascaded to provide more number of DRQs and explain the operation?
(c) Explain how memory to memory transfer is performed with 8237?

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