Code No: **R31055** **R10** **Set No. 1**

III B.Tech I Semester Supplementary Examinations, October/November - 2016

MICRO PROCESSORS AND MULTICORE SYSTEMS
(Computer Science and Engineering)

Time: 3 hours **Max. Marks: 75**

Answer any FIVE Questions
All Questions carry equal marks

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1 a) Explain why segmentation is required and discuss about implementation of segmentation in 8086. [8M]
b) What is addressing mode? Explain different type of addressing modes in 8086 with examples. [7M]

2 a) Determine whether the following instructions are valid or not. If valid, explain their operation & flags affected, if not, mention the reason. [8M]
i) XLAT AL **ii**) MOV BX,[DX] **iii**) NOT 34h **iv**) AAD **v**) TEST OPRI, OPR2 **vi**) JNGE label.
b) Briefly explain the format of jump instructions. [7M]

3 a) Write an ALP in 8086 to divide a 32-bit number by a 16-bit numbers. [8M]
b) Differentiate between procedures and macros giving relevant examples. [7M]

4 a) What are assembler directives? What are their uses? List out and discuss different assembler directives of 8086 micro processor. [10M]
b) Write an ALP to convert a 3- digit BCD number to binary number. [5M]

5 a) What is interrupt vector table? Draw and explain interrupt vector table for 8086 vector table? [8M]
b) Write difference between hardware and software interrupts of 8086 processor. [7M]

6 a) Write an ALP to transfer 10 words of data using REP MOV SW instruction from source location to destination location. What is the role of SI, DI registers & DF bit? [8M]
b) Write an ALP to find sum of even & odd numbers in a given array of N numbers. [7M]

7 What are the main features of 80386 microprocessor? Explain in detail the real mode and protected mode operations of 80386 microprocessor. [15M]

8 a) What is meant by superscalar execution? Explain. [8M]
b) What do you mean by branch prediction? How does it enhance the speed of execution? Explain the use of branch target buffer in branch prediction? [7M]

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