

JAYPEE UNIVERSITY-2007

B. TECH DEGREE EXAMINATION

ASSEMBLY LANGUAGE PROGRAMMING

(INFORMATION TECHNOLOGY, COMPUTER SCIENCE ENGINEERING)

JUNE-2007

TIME-3HOUR
MARK-100

ANSWER ALL THE QUESTIONS

1. Write the assembly language program for the following code stored in the memory of the basic computer.

```
LDA AL // Load low order bytes of AX register
ADD BL // Add BL, low
STA CL //store the result in CL, low
CLA // clear AC
ADD AH //Add A, high
ADD BH // Add B, high
STA CH
HLT
```

Assume the appropriate values where ever required. Write comment for each line of code in ALP.

2. Write the assembly language program to multiply two positive numbers by repeated addition method. For example: to multiply 5x4, the program evaluates the product by adding 5 four times like 5+5+5+5. Hint: Use loops

3. Write the equivalent ALP for the following line of code

```
Register = Mul * B // assume B= 05
Register = Mul +B
Register = Mul - B
Register = Register + B
```

4. Explain the different categories of the registers in 8086 microprocessor. Represent the bits of each registers diagrammatically.

5. What are the basic building blocks of the computer storage?

6. What is the length of the following data items:

- Paragraph
- Word
- Double-word
- Byte
- Kilobyte

7. What is the main function of the processor?

8. Explain the following terms

- segment
- offset

9. Explain which registers are used for the following purposes

- Counting for looping
- Multiplication and division
- Addition and subtraction