

Sc

[A-80]

SARDAR PATEL UNIVERSITY  
External Examination  
B. Sc. – Computer Science – Sixth Semester  
US06CCSC04: Introduction to Microprocessors and Assembly Languages  
4<sup>th</sup> April, Monday, 2016

Time: 02:30pm to 05:30pm

Total Marks: 70

Q-1 Select an appropriate option.

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- 1 The word \_\_\_\_\_ is the derivative of the word process that means to carry out systematic operation on data.  
(a) Processor (b) Progressive (c) Progression (d) None of these
- 2 \_\_\_\_\_ directive is used along with the name of the procedure to indicate the end of a procedure to the assembler.  
(a) ENDP (b) END (c) Both (a) & (b) (d) None of these
- 3 The instruction pointer contains a 16-bit offset which tells where in that 64-Kbyte code segment the \_\_\_\_\_ byte is to be fetched from.  
(a) next instruction (b) previous instruction  
(c) middle instruction (d) None of these
- 4 The \_\_\_\_\_ instruction compares immediate number 01H with byte in AL.  
(a) CMP AL, 01H (b) CMP CX, 01H (c) COM AL, 01H (d) None
- 5 In DIV instruction, numerator must always be in \_\_\_\_\_ register.  
(a) AX (b) BX (c) CX (d) None of these
- 6 The \_\_\_\_\_ instruction subtract 1 from contents of AL register.  
(a) DEC AL (b) DEC BL (c) DEC CL (d) None of these
- 7 The instruction \_\_\_\_\_, Jump to label RUN\_PRESS if AX below 4371H.  
(a) JB RUN\_PRESS (b) JA RUN\_PRESS  
(c) JN RUN\_PRESS (d) None of these
- 8 The instruction \_\_\_\_\_ is used to repeat a group of instruction some number of times or until the zero flag becomes 1.  
(a) LOOPNE (b) LOOPNT (c) LOOPNM (d) None of these
- 9 \_\_\_\_\_ structures are structures that are stepped through sequential.  
(a) Sequential (b) Non-sequential (c) Index (d) None of these
- 10 An \_\_\_\_\_ loop is one that has no exit.  
(a) finite (b) Infinite (c) Index (d) None of these

Q-2 Answer the following questions. (Any **TEN**)

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- 1 What is Code Segment (CS) Register?
- 2 What is Instruction Pointer?
- 3 What is EXTRN?
- 4 Explain the MOV instruction.
- 5 What is the function of SUB instruction?
- 6 Explain the DIV instruction.
- 7 What do you know about JS instruction?
- 8 What is STD processor control instruction?
- 9 What is NOP?
- 10 What is Decision?
- 11 What is the use of Stack Segment?
- 12 What is a Sequential structure?

Q-3

- (a) Write short note on the 8086 Microprocessor Family. 5
- (b) Explain the Assembler Directives: (i) ASSUME (ii) DW 5

**OR**

Q-3

- (a) Explain in detail the Flags Registers. 5
- (b) Explain the concept of Assembler. 5

Q-4

- (a) Explain the instructions: (i) ADC (ii) CMP 6
- (b) Explain the XCHG Instruction with example. 4

**OR**

Q-4

- (a) Explain the instructions: (i) ROL (ii) SHR 6
- (b) Explain the Logical Instructions with examples. 4

Q-5

- (a) Explain the instructions: (i) JNBE (ii) JNLE 5
- (b) Explain the CMPSB instruction with example. 5

**OR**

Q-5

- (a) Explain the instructions: (i) JCXZ (ii) JO 5
- (b) Explain the LOOP instruction with example. 5

Q-6 Write a note:

- (i) Structure of a typical Assembly Program.
- (ii) Implementation of IF... THEN structure in Assembly program.

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**OR**

Q-6 Write short note on implementation of looping structures: WHILE-DO and REPEAT...UNTIL

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