SARDAR PATEL UNIVERSITY

B. C. A. Examination, 3rd Semester
Monday, 25th November, 2019
USO3EBCA01: Introduction to Microprocessors

Time: 02:00 PM to 04:00 PM   **Total Marks: 70**

Note: Answer of all the questions (including Multiple Choice Questions) should be written in the provided answer book only

Q:1 Give answers of following multiple choice questions   **[10]**

[1] The _____ are used to balance power supply in Computer.
   (A) transistors   (B) capacitors
   (C) micro chips   (D) None of these

[2] A flag is a one type of _____.
   (A) Latch   (B) Flip-flop
   (C) Gate   (D) None of these

[3] Assume AL = 0110 1101
         NOT AL
   What is the value of AL register?
   (A) 1010 0101   (B) 0001 0010
   (C) 1001 0010   (D) 1010 0010

[4] NOT stands for _____.
   (A) Negative   (B) Nothing
   (C) Invert all Byte   (D) Invert each Bit

[5] SHR – Shift operand _____ Right, put zero in _____.
   (A) Bits, LSB   (B) Bytes, LSB(s)
   (C) Bytes, MSB   (D) Bits, MSB(s)

[6] ROR stands for Rotate _____ of operand Right.
   (A) All Bytes   (B) Each Bytes
   (C) All Bits   (D) Each Bits

[7] The full form of DB directive is _____.
   (A) Data Byte   (B) Define Bits
   (C) Define Byte   (D) None of these

[8] The SEGMENT directive is used to indicate the _____ of logical segment.
   (A) start   (B) end
   (C) address   (D) None of these

[9] In WHILE-DO structure the condition is checked _____ any action is done.
   (A) before   (B) after
   (C) in the structure   (D) None of these

[10] Which of these is not a control flag?
   (A) AF   (B) IF
   (C) DF   (D) TF

Q:2 Answer the following short questions (any Ten)   [20]

[01] List all the major directions in microprocessors evolution.

[02] Give a full-form for the following:
      1) SI   2) SP   3) SS   4) DS

[03] Define: Decoder and its function in EU.

[04] Explain NOT instruction with example.

[05] State the example of SBB instruction with syntax.

[06] State the INC – Increment instruction

[07] What do you mean by unconditional jump? Write instructions that are called unconditional jump instruction(s).

[08] Write full form, syntax and flag affected by the JNC instruction.

[09] Differentiate ROL and ROR.

[10] What is the use of PAGE and TITLE directive in assembly program?

[11] What is Assembler Directive? List all directives.

[12] List all loop structure and write syntax of any one of them.

Q:3 [A] Explain segment registers in detail.   [05]

[B] Explain flag register with diagram.   [05]

OR

Q:3 [C] Explain BIU in detail.   [07]

[D] Explain general purpose registers.   [03]

Q:4 [A] Explain ADC instruction with example.   [05]

[B] Explain DIV instruction with example.   [05]

OR

Q:4 [C] Explain SBB instruction with example.   [06]

[D] Explain MUL instruction with example.   [04]

Q:5 [A] Explain ROL and ROR instruction with example.   [07]

[B] Explain LOOPZ instruction with example.   [03]

OR

Q:5 [C] Explain SHL and SHR instruction with example.   [07]

[D] Explain JZ instruction with example.   [03]

Q:6 [A] Write a program for multiplication without using MUL instruction.   [06]

[B] Explain ASSUME and LABEL directive with example.   [04]

OR

Q:6 [C] Write syntax of all control structure and explain two of them with flow chart and example.   [10]

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