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SARDAR PATEL UNIVERSITY

No. of Printed Pages: 2

M.Sc(Electronics & Communication) (Semester II) (CBCS) EXAMINATION - 2015

23rd April 2015

02:30 PM to 05:30 PM

PS02CELC02

16 – Bit Microprocessor and its applications

Note: The figures to the right indicate maximum marks.

Total mark : 70

- Q-1 Multiple Choice Question [08]**
- 1) In the three bus architecture system, only _____ is bidirectional.
(a) Address Bus (b) Data Bus
(c) System Bus (d) All of above
 - 2) How many pointers are used 8086 microprocessor?
(a) 4 (b) 6
(c) 8 (d) 9
 - 3) In which of the following set of instructions, flag register is not affected?
(a) Data transfer instructions (b) Arithmetic instructions
(c) Arithmetic adjust instructions (d) None of above
 - 4) Using MOV instruction, which of the following data transfer is illegal?
(a) Memory to Memory (b) Memory to Register
(c) Register to Register (d) Segment Memory to Register
 - 5) What is the content of AL after execution of the following set of instructions.
MOV AL,6DH
MOV BL,40H
AND AL,BL
(a) 6DH (b) 4DH
(c) 60H (d) 40H
 - 6) When DF=1, the LODSW instruction automatically _____.
(a) Decrement SI by 1 (b) Decrement SI by 2
(c) Increment SI by 1 (d) Increment SI by 2
 - 7) If the $\overline{MN}/\overline{MX}$ pin is asserted low, then the 8086 is in _____ mode.
(a) Minimum (b) Maximum
(c) Medium (d) None
 - 8) Arrange the following interrupts according to their priority from low to high.
1. INTR 2. NMI 3. Single Step 4. INT
(a) 1,2,3,4 (b) 3,1,2,4
(c) 4,1,2,3 (d) 4,2,3,1

- Q-2 Answer the following short questions [Any Seven] [14]**
- (1) Calculate the physical address corresponding to the logical address D470H in the extra segment and logical address 2D90H in the stack segment.
 - (2) What is flag? Draw the flag register of 8086 microprocessor.
 - (3) Enlist all arithmetic and logical instructions used in 8086 microprocessor.

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- (4) Determine the content of AH and BH after execution of following set of instruction.
 MOV AH,20H
 MOV BH,9CH
 ADD AH,BH
- (5) Explain the function of ALE in 8086 microprocessor?
 (6) Explain PUSH and POP instruction in detail.
 (7) What steps are followed by 8086 before doing call for interrupt on overflow?
 (8) Explain cold starting of 8086.
 (9) How we implement the handshake data transfer in 8086?
- Q-3 (a)** With neat diagram, explain the architecture of 8086 microprocessor. [06]
- Q-3 (b)** What is Segment Register? Discuss all the segment register used in 8086 microprocessor and give the advantages of segmented memory. [06]
- OR**
- Q-3 (b)** What is addressing modes? Discuss the different addressing modes used in 8086 microprocessor. [06]
- Q-4 (a)** Discuss in detail shift and rotate instruction with suitable example. [06]
- Q-4 (b)** Determine the content of AX, BX and CX after the execution of the following program. [06]
- MOV CL,2
 MOV AX,7FH
 MOV BX,0505H
 ROL AX,CL
 AND AX,BX
 OR BX,AX
- OR**
- Q-4 (b)** Write a assembly level program to store the two hexadecimal number in the memory location, add the numbers and stored the result in another memory location [06]
- Q.5 (a)** Draw the pin-out diagram of 8086 microprocessor and explain the function of each pin in detail. [06]
- Q.5 (b)** Discuss the microprocessor bus type and buffering techniques. [06]
- OR**
- Q.5 (b)** Discuss the interfacing of alphanumeric display with 8086 microprocessor. [06]
- Q.6 (a)** Explain Interrupt types in 8086 microprocessor [06]
- Q.6 (b)** Discuss the different methods of parallel data transfer. [06]
- OR**
- Q.6 (b)** Discuss the interfacing of D-A converter with 8086 microprocessor. [06]
