

Roll Number: _____

Thapar Institute of Engineering & Technology, Patiala

Department of Computer Science and Engineering

END SEMESTER EXAMINATION

B. E. (Third Year): Semester-VI (2021/22)	Course Code: UCS617
(COE)	Course Name: Microprocessor Based Systems Design
Date: May 25, 2022	Time: 11:25 AM – 1:25 PM
Duration: 2 Hours, M. Marks: 35	Name of Faculty: ANJ, MJU, HRS, SHI

Note: Attempt all questions with proper justification.

Assume missing data, if any, suitably.

Q1	WAP to transfer a block of 10 bytes from data segment to extra segment by using assembler directives DB, ASSUME, SEGMENT, ENDS, END.	(7)
Q2	Design Interrupt vector tables of 8086 Microprocessor also show and explain all the interrupts.	(7)
Q3	Write a control word format and assembly language code when the ports of the 8255 are defined as follows: a) Port A as an output Port in Mode 0 b) Port B as an output Port in Mode 1 c) Port C-Upper as an Input port and Port C-Lower as an output port d) Output the result to CWR-Control Word Register by assuming Port A is connected to 71506 e) Read the data from Port A and Port B and perform AND operation between Port -A and Port- B f) Output the result to Port- C	(7)
Q4(a)	Show the sequence of operations of Programmable Interrupt Controller with 8086 microprocessor.	(4)
Q4(b)	Describe the functions and working of CLK, GATE and OUT pins for Counter 0, Counter 1, and Counter 2 in PIT.	(3)
Q5	Differentiate between the following: a) 80386, 80486 and Pentium Processors through address, data bus and speed b) Synchronous and Asynchronous data transfer for 8251 (USART) c) LOOP and REPEAT (REP) in 8086 along with example	(3+2+2)

Roll No. _____

Name _____

Group _____

Computer Science & Engineering Department
Thapar Institute of Engineering & Technology, Patiala
Microprocessor Based Systems Design (UCS617)
Theory Quiz-2 [May 25, 2022]

Time: 10 min [11:15AM - 11:25AM]**Max Marks: 10****Instructions for students:**

- Any cutting or overwriting will be considered as a wrong answer.
- Missing roll number or name will be considered as an absent.
- No Negative marking is there and No extra material is allowed.

1. What is the output of following code?
X DB 90
start:
 CMP AX, X
 JG exit
 MOV BL, 55
 HLT
exit:
 HLT
a. 0000 in AX while 0000 in BX
b. 0000 in AX while 0037 in BX
c. 90 in AX while 0000 in BX
d. Error
2. Consider the following program for moving a block of data from one memory location to another memory location. Fill in the blank with the instruction that should come at that place.
MOV SI, 2000
MOV DI, 2008
MOV CX, 0008
REP

HLT
a. MOV
b. MOVS
c. MOVSB
d. MOVSW
3. What is the output of following code?
X DB -8
MOV AL, 0FFh
IDIV X
HLT
a. Generates 07E1 in AX and 0000 in DX
b. Generates 07E1 in AX and 0001 in DX
c. Generates 70E0 in AX and 0000 in DX
d. Error in the code
4. When Divide by zero error occurs which Interrupt will takes place?
a. INT0
b. INT1
c. INT2
d. INT3
5. Which of the following is a Processor Control Instructions
a. CLC
b. STC
c. CMC
d. All of the above
6. What will be the value of DX after executing the following code
MOV AX, 1114H
MOV DX, 1116H
PUSH AX
PUSHF
a. 1114
b. 1111
c. 1116
d. All of the above
7. In mode 3 of 8254, when count N loaded in counter is even, then:
a. Output remains high for N/2 count and low for N/2 count
b. Output remains high for (N+1)/2 count and low for (N-1)/2 count
c. Output does not depend on the value of N
d. None of the above
8. Which of the following signal indicates that the output register is empty and USART is ready to accept the next data byte?
a. T x D
b. $\overline{T \times C}$
c. T x RDY
d. T x E
9. In non-buffered mode, \overline{SP} pin of master 8259 is:
a. Grounded
b. Kept high
c. Connected to Vcc
d. Both b and c
10. A high on A₀ pin of 8279 indicates the transfer of _____ over the data bus:
a. Command or status information
b. Data
c. Address
d. None of the above