Course Name & Code: Digital Logic and Design & CSE1003

Class Number: 11125/11474/12497/13306/13587/14499/15249/15838/16191/16214/16386

Slot: C1+TC1

Exam Duration: 90 minutes

Maximum Marks: 50

Answer all the questions (5 X 10 =50)

S.No.	Question	Marks
1.	i. Find out the following problem answer as overflow / underflow / correct result?	2
	a. Let A=69 and B=90. If A and B are unsigned decimal 8-bit integers, then what is the result of A-B?	
	b. Let A=69 and B=90. If A and B are sign and magnitude 8-bit integers, then what is the result of A+B?	
	(Note: Need Justification for the your result)	
	ii. What is the radix of the number hold by the equation $$312/20 = 13.1?$$	2
	iii. Compute $(FACE)_{16} / (12)_{16}$	2
	iv. Convert to base 6: $3BA.25_{14}$	2
	v. The state of a 12-bit register is 1000010010111. What is its content if it represents a. Three decimal digits in the excess-3 code? b. Three decimal digits in BCD?	2
2.	I. A burglar alarm is designed so that it senses four input signal lines. Line A is from the secret control switch, line B is from a pressure sensor under a steel safe in a locked closet, line C is from a battery-power clock, and line D is connected to a switch on the locked closet door. The following conditions produce logic 1 voltage on each line. A : The control switch is closed. B : The safe is in its normal position in the closet. C : The clock is between 10:00 and 14:00 hours. D : The closet door is closed. Write the expression and draw the logic circuit using only minimal NAND Gate for the burglar alarm that produces a logic-1 (rings a bell) when the safe is moved and the control switch is closed, or when the closet is opened after banking hours, or when the closet is opened with the control switch open.	6

(P.T.O)