Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

		PDDC - SEMESTER-III • EXAMINATION – SUMMER • 2014	
Subject Code: X 30902 Date: 20-06-		Code: X 30902 Date: 20-06-2014	
Subj	ect Ne: 02:	Name: Analog and Digital Electronics :30 pm – 05:00 pm Total Marks: 70	
	2.	Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks.	
Q.1	(a)	What are the feedback configurations? Draw an Op-amp Inverting amplifier circuit and	07
	(b)	obtain the frequency response curve for it. Derive an expression for it. List and Discuss all ideal characteristics of an Op Amp.	07
Q.2	(a)	Define the following parameters as applied to an OP-AMP	07
	(b)	A). CMMR B). PSRR C). Slew Rate D). Input Offset Voltage Sketch the circuit of Op-amp as Differentiator and explain with necessary waveforms. OR	07
	(b)	Discuss universality of NOR gate. Also Derive all gates with the help of NOR gate.	07
Q.3	(a)	Minimize the following Boolean expression using K-map and realize it using AOI gates. $Y = \Sigma m (0,2,7,8,9,10,12,13,14)$	07
	(b)	Explain the full adder with help of circuit diagram using NAND gate write the truth table.	07
Q.3	(a)	OR Explain De'Morgans theorem's giving necessary logic expressions and diagrams	07
	(b)	Explain the working of Master-Slave J-K flip-flop	07
Q.4	(a)	Sketch the diagram of 555 timers as an astable Multivibrator. Explain its working and derive equation for frequency of output waveform.	07
	(b)	What do you mean by a K map? List it's advantages and disadvantages.	07
Q.4	(a)	OR With sketch realize the expression X = AB + CD using (i) NAND gates only and (ii) NOR gates only	07
	(b)	Write short notes on: (i) BCD to 7-segment decoder (ii) Gray code	07
Q.5	(a) (b)	Draw functional block diagram of IC 555 & discuss function of each pin. Discuss multiplexers & demultiplexers with suitable diagram.	07 07

(b) List various specifications of ADC and Explain the dual slope A/D converter technique

(a) Discuss PLL with necessary diagrams.

with the help of block diagram.

Q.5

OR

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