Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–1st / 2nd (SPFU) EXAMINATION– WINTER 2015

Subject Code: TEE011 **Date:28/12/2015**

Subject Name: BASIC ELECTRONICS

Time: 02:30pm to 05:00pm **Total Marks: 70**

Instructions:

1. **Attempt any five questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks**

Q.1	**(a)**	Define active circuit element and passive circuit element. Explain Kirchhoff's Law with example.	**07**
	(b)	For given circuit diagram, find the current i_1 and i_2 as indicated. (See Fig. 1)	**07**
Q.2	**(a)**	Explain in brief superposition theorem.	**07**
	(b)	Find the power loss in the R_L=1 Ω Resistor by Thevenin's Theorem.(See Fig. 2)	**07**
Q.3	**(a)**	Explain Wye –Delta transformation with suitable example.	**07**
	(b)	For the given circuit diagram, When V_0 = 0, I=2A; Determine the value of current I when V_0=10 using superposition theorem.(See Fig. 3)	**07**
Q.4	**(a)**	Draw the typical block diagram of Op-Amp and explain the functionality of each block.	**07**
	(b)	Draw the schematic symbol for the Op-Amp. Also Define the followings: 1) Input bias current 2) Common Mode Rejection Ratio 3) Slew Rate 4) Large signal voltage gain	**07**
Q.5	**(a)**	Draw the equivalent circuit of an Op-Amp and list the electric characteristics of the Ideal Op-Amp.	**07**
	(b)	Write a brief note on Summing and Averaging amplifier with circuit diagram inverting configuration.	**07**
Q.6	**(a)**	Draw the basic block diagram of computer system. Explain each block with its function.	**07**
	(b)	List the different digital system components. Explain any two with application point of view.	**07**
Q.7	**(a)**	What is OSI Model and explain the functioning of different layers of OSI Model.	**07**
	(b)	What are the different types of computer networks & explain in brief.	**07**

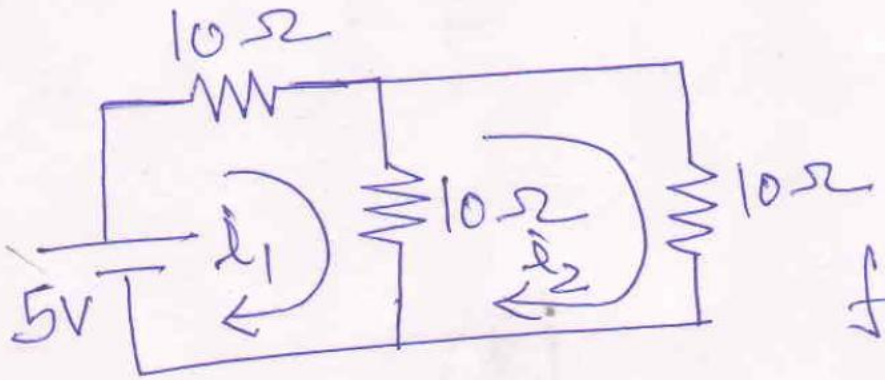

fig. 1

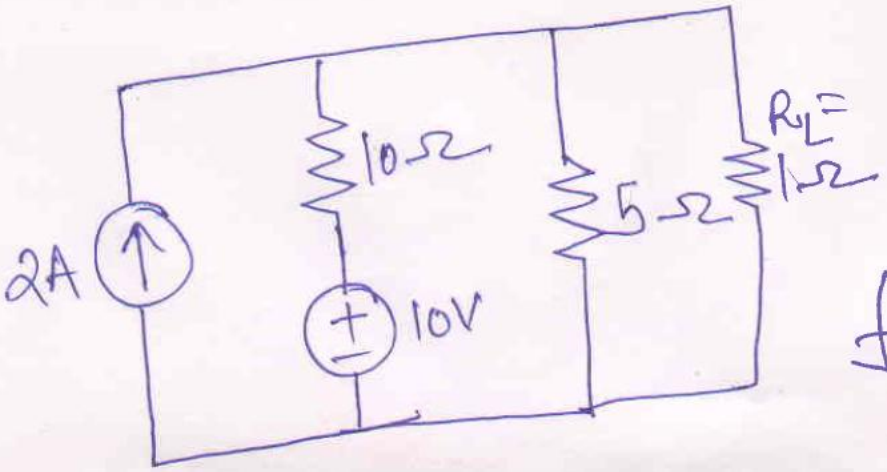

fig. 2

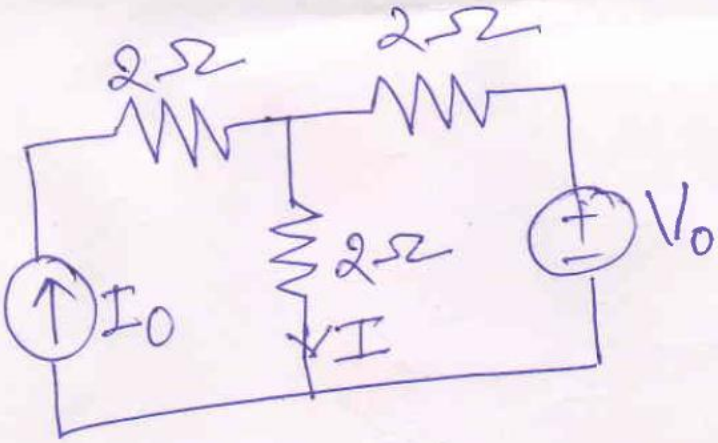

fig. 3

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