Roll No.:.....

National Institute of Technology, Delhi

Name of the Examination: B. Tech.

Branch	: EEE and ECE.	Semester	: 1st
Title of the Course	: Introduction to Electrical & Electronics Engineering	Course Code	: EEB100

Time: 2 Hours | Maximum Marks: 25

Note : 1. This paper contains 6 questions in 2 printed pages.

2. Answer all the questions.

3. Do not write anything on the question paper except Roll number

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1. Evaluate R_{AB} of the network shown in Fig.1. [4]

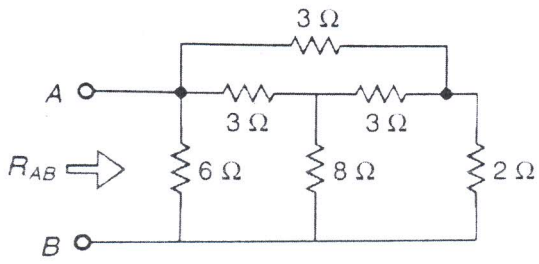

Fig. 1

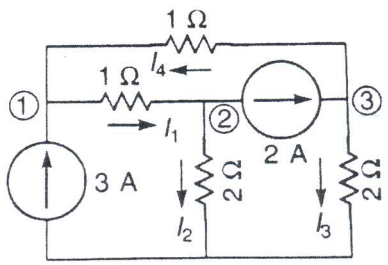

Fig. 2

2. Find different branch currents in the circuit shown in Fig. 2 using nodal analysis [4]

3. Determine the current through $R_L = 2\Omega$ in the circuit of Fig. 3 using superposition theorem. [4]

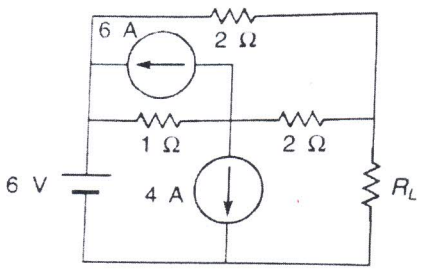

Fig. 3

4. A balanced three-phase system supplies an unbalanced delta connected load made up of two resistors of 100Ω, 200Ω and a coil having an inductance of $0.3H$ with negligible resistance. The line to line voltage is $100V$ and supply frequency is $50Hz$. Calculate (i) total power in the system, and (ii) the total reactive volt amperes. [4]

5. The input power to a $1.6kV, 50Hz$, three-phase motor is measured by using 2 wattmeter method. The motor is running on full-load and efficiency is 86%. The readings are $255kW$ and $85kW$, respectively. Determine: (i) input power, (ii) power factor, (iii) line current, and (iv) output power. **[4]**

6. Explain the working of half wave rectifier and full wave bridge rectifier. **[5]**