Department of Electronics & Communication Engineering

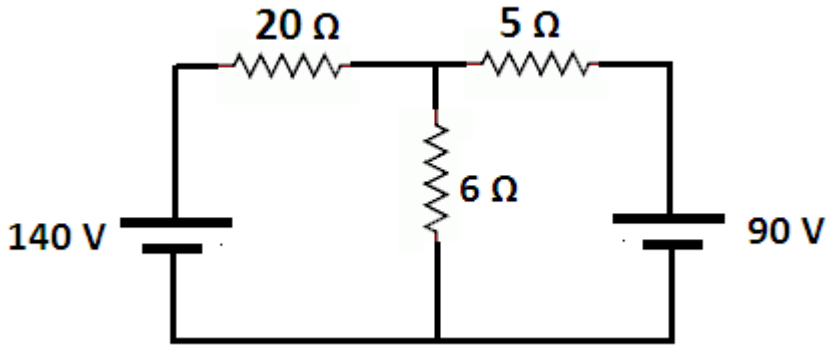
(Faculty of Technology, Dharmsinh Desai University, Nadiad)

Academic Year: 2022 - 2023

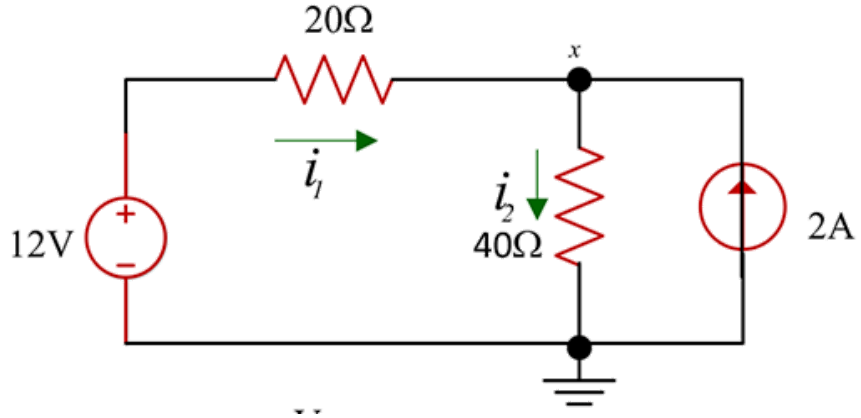
TUTORIAL – 1

Subject : *(ESC101) BASIC ELECTRICAL ENGINEERING*
Class : *B. Tech. Sem.I (EC/CE/IT)*
Topics :*Temperature dependance of resistance, Kirchhoff current and voltage laws*

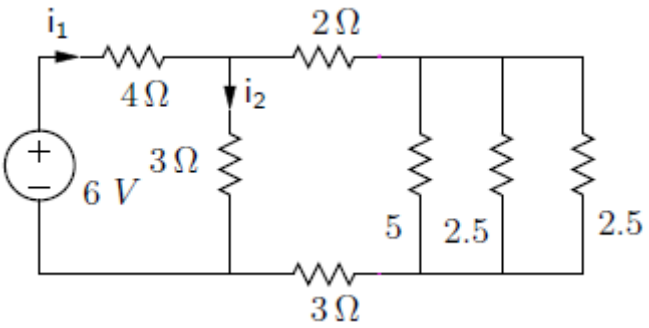
1. A coil has a resistance of 21.6 Ω when its mean temperature is 20°C and of24 Ωwhen its mean temperature is 50° C. Find its mean temperature rise, when itsresistance is 25.2 Ω and the surrounding temperature is 16° C.
2. The resistance of a field coil measures 55 Ω at 25° C and 65 Ω at 75° C. Findthe temperature co-efficient of conductor at 0° C.
3. A coil has a resistance of 18 Ω, when its mean temperature is20°C; and 20 Ω, when its mean temperature rise is 50°C. Find its mean temperatureΩrise when its resistance is 21 ohms and the surrounding temperature is 15°C.
4. Find current and voltages across all the resistors.



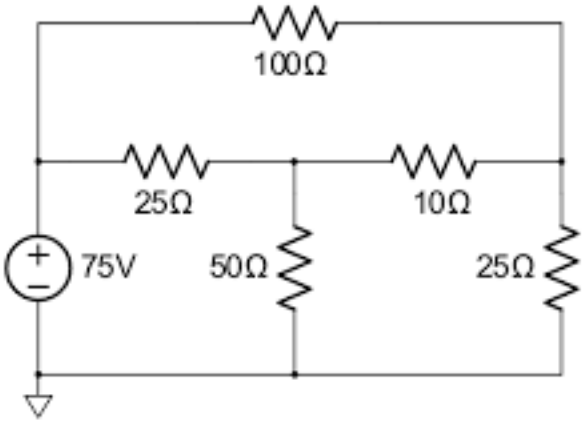
5. Find the current through 20 Ω and 40 Ω resistors.



6. Find current i_1 for the circuit shown in figure.



7. Find node voltages in the following circuit.



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