**Subject Code**: **ES103** **Enrollment No..……**

# MID TERM EXAMINATION-Dec 2022(Re-minor)

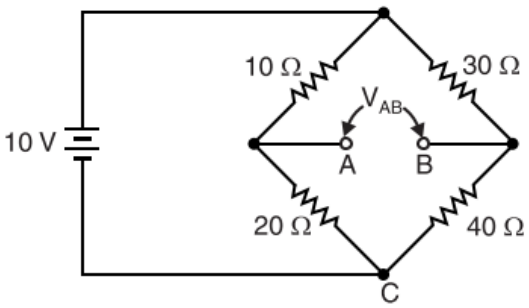
## Basic Electrical Engg., B. Tech-IT-1, IT-2, 1st Sem

**Time: 01:00 Hrs** **Maximum Marks: 30**

**Note: Attempt questions as per Instructions**

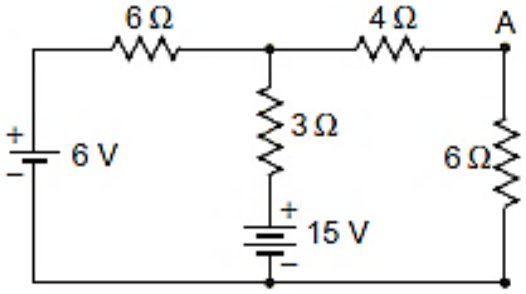
***SECTION-A (Attempt any two questions out of three, Each of 05 Marks)***

**Q.1.** Find the voltage $\mathbf{V_{AB}}$ in the circuit shown in Fig.



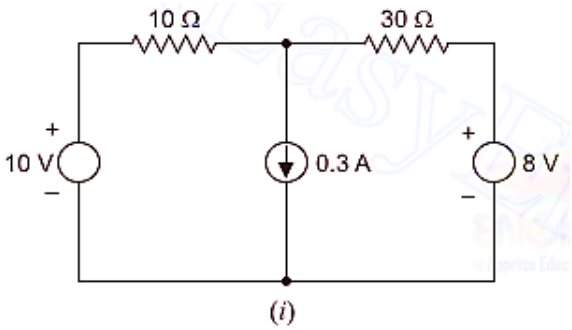

**Q.2.** State and maximum power transfer theorem and drive the condition for maximum power transfer. Also show that efficiency at maximum power transfer is 50%.

**Q.3.** Determine current through 6-Ω resistance connected across A–B terminals in the electric circuit shown in Figure using Thevenin's theorem.




***SECTION-B (Attempt any One question, out of two, Each of 10 Marks)***

**Q.4.** Use mesh current method to determine currents through each of the components in the circuit shown in Fig.




(*i*)

**Q.5.** Discuss in brief:

(a) Linear Circuit(s)

(b) Mesh and Loop

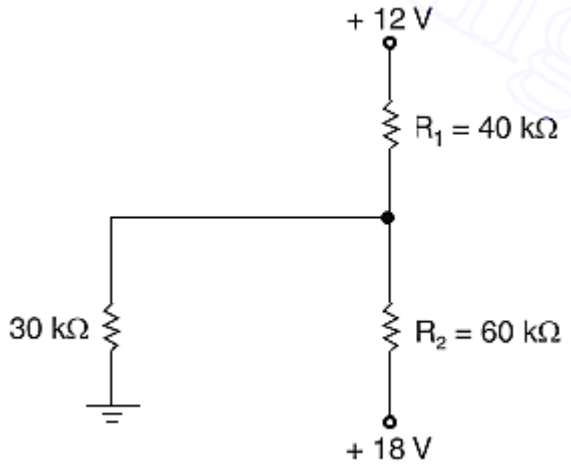
(c) Uni-lateral and Bi-lateral Network

(d) Voltage Drop & Potential Difference

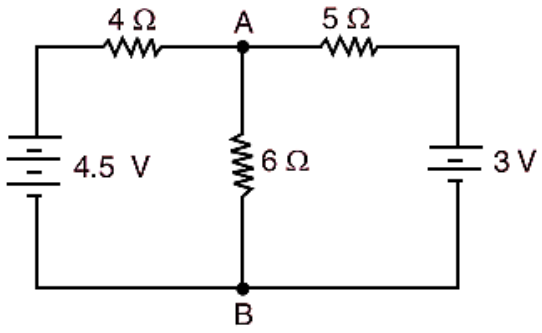
(e) Ohm's Law

***SECTION-C (Compulsory, 10 Marks)***

**Q.6**. (a) Use superposition principle to find the current through resistance $R_1$ (= 40 kΩ) in the circuit shown in Fig. **(05Marks)**




(b) Using Norton's theorem, find the current in the branch AB containing 6 Ω resistor of the network shown in Fig. **(05Marks)**

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