National Exam of Higher National Diploma-New program – 2020 Session

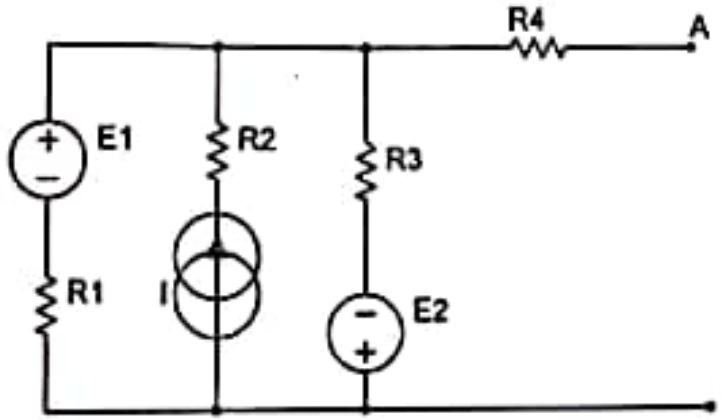
Specialty/option : TEL, NWS
Paper : Electronic Circuits
Duration : 4 hours

Credit : 5

SECTION A: Circuit Analysis (30mks)

Exercise 1: (10 mks)

Consider the circuit in figure 1 below.



The circuit parameters are as follows:

R1 = R2 = R3 = R4 = 4KΩ;

E1 = 12V; I = 9mA.

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Figure 1

1. The Thevenin's equivalent voltage seen to the left of the A – B terminals is 12V, calculate the value of E2; (4mks)
2. If a load RL is connected across the A – B terminals, determine the value of RL required to absorb maximum power; (3mks)
3. Calculate the maximum power absorbed by the load. (3mks)

National Exam of Higher National Diploma 2023

Spécialty/option : TEL, NWS
Paper :Electronic Circuits
Duration : 04 Hours

Credit : 05

ANSWER ALL QUESTIONS

SECTION A : CIRCUITS ANALYSIS (10 marks)

Consider the network in Figure 1,

1. Determine the THEVENIN equivalent circuit of the network seen from the a-b terminals. **(4 marks)**
2. If a load $R_L = 4\Omega$ is connected across the a-b terminals,
   a) Calculate the current flowing through R_L. **(2 marks)**
   b) Calculate the power dissipated by R_L. **(2 marks)**
   c) Is the power dissipated by the load maximum? Justify your answer. **(2 marks)**

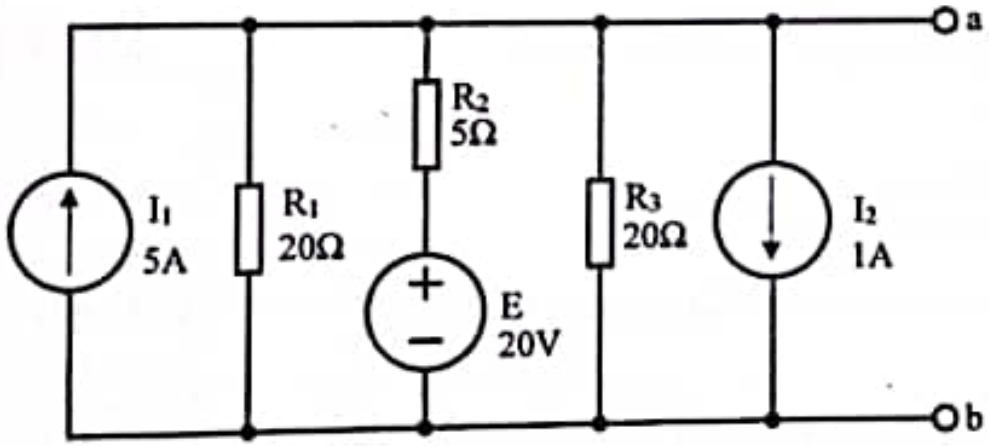

Figure 1