

Reg. No: 

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**SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR**  
**(AUTONOMOUS)**  
**B Tech II Year I Semester Regular Examinations Feb-2021**  
**BASIC ELECTRICAL & MECHANICAL ENGINEERING**  
**(Civil Engineering)**

Time: 3 hours

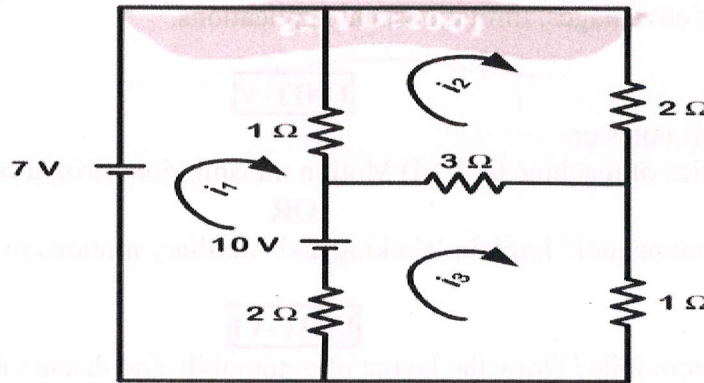
Max. Marks: 60

(Answer all Six Units 6 X 10 = 60 Marks)

**PART-A**

**UNIT-I**

- 1 a State and explain Ohm's law. 3M  
 b Find  $i_1, i_2, i_3$  for the given circuit by using Kirchoff's laws?



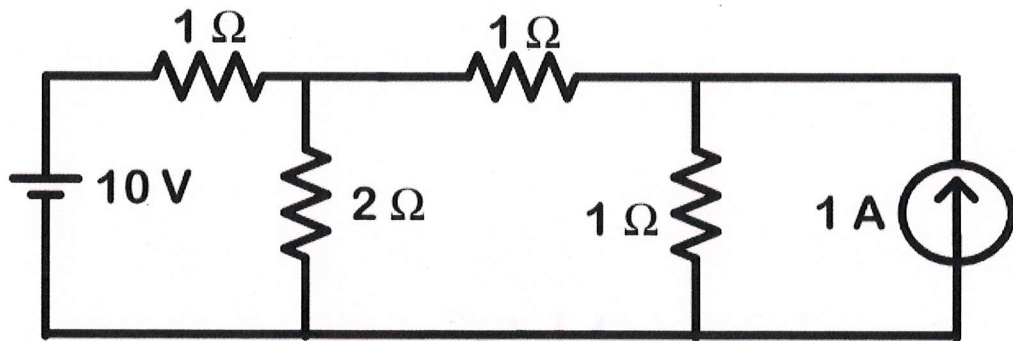
7 M

OR

- 2 Explain in detail about star to delta transformation of given resistive network. 10M

**UNIT-II**

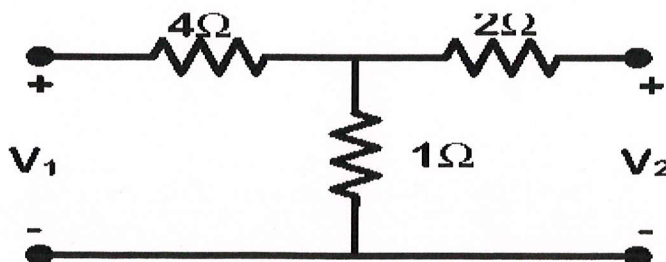
- 3 a State Super position theorem. 2M  
 b Calculate the current in 2Ω resistor in the given circuit using super position theorem.



8M

OR

- 4 Find the Open circuit parameters for the given circuit.



10M

**UNIT-III**

- 5 a Derive EMF equation of a transformer. 5M  
 b A 100 kVA, 11000/400 V, 50 Hz transformer has 40 secondary turns. Calculate the number of primary turns and primary and secondary currents. 5M
- OR**
- 6 a Explain constructional details of transformer. 5M  
 b Derive the condition for maximum efficiency of the transformer. 5M

**PART-B****UNIT-IV**

- 7 a What is pattern? Explain various pattern materials are used to making pattern. 5M  
 b What are the different pattern allowances? Explain with neat sketch. 5M
- OR**
- 8 Classify the welding types? Explain the working of arc welding with neat sketch and mention the advantages, limitations and applications. 10M

**UNIT-V**

- 9 Write a short notes on  
 (i) Kinematics of machine tool (ii) Motion transmission (iii) Automatic lathe 10M
- OR**
- 10 What is machine tool? Explain Working and Auxiliary motions in machine tools. 10M

**UNIT-VI**

- 11 What is Automobile? Draw the layout of automobile and discuss the functions of the automobile basic components. 10M
- OR**
- 12 Examine the working of house hold refrigerator with line diagram. 10M

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