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SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY: PUTTUR
(AUTONOMOUS)

B. TECH II Year I Semester Supplementary Examinations December-2021

BASIC ELECTRICAL & MECHANICAL ENGINEERING

(Civil Engineering)

Time: 3 hours

Max. Marks: 60

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

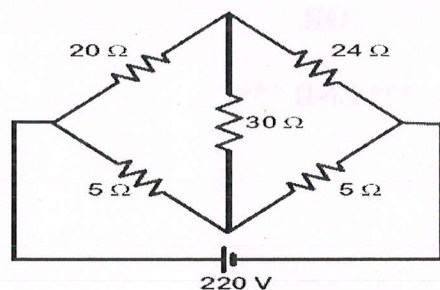
PART- A

UNIT-I

- 1 Explain the following in detail 10M
- Resistive networks
 - Inductive networks
 - Capacitive networks

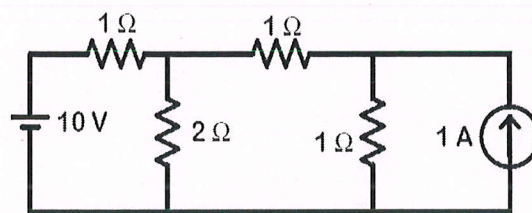
OR

- 2 Find the current delivered by the source for the circuit shown in figure. 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 a The given ABCD parameters are $A=2$, $B=0.9$, $C=1.2$, $D=0.5$. Find Y- parameters. 5M
b The given Y-parameters are $Y_{11}=0.5$, $Y_{12}=Y_{21}=0.6$, $Y_{22}=0.9$. Find the Impedance parameters. 5M

UNIT-III

- 5 a Explain about constructional details of dc motor. 5M
b A 6 pole lap wound shunt motor has 500 conductors, the armature and shunt field resistances are $0.05\ \Omega$ and $25\ \Omega$, respectively. Find the speed of the motor if it takes 120 A from dc supply of 100 V. Flux per pole is 20 mWb. 5M

OR

- 6 a Derive EMF equation of a transformer. 6M
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. 4M

PART - B

UNIT-IV

- 7 a Define manufacturing process? Classify the various manufacturing processes. 5M
- b Illustrate the importance of manufacturing process towards technology and social-economic development? 5M

OR

- 8 a List the various advantages and applications of casting? 5M
- b What is pattern? Explain various pattern materials are used to making pattern 5M

UNIT-V

- 9 a Name the different types of the lathes? 5M
- b Write the different types of lathe operations? 5M

OR

- 10 What is a shaper? Draw the block diagram of a shaper machine with principal parts and specifications. 10M

UNIT-VI

- 11 Examine the working of house hold refrigerator with line diagram. 10M

OR

- 12 Discuss the psychometric process. 10M

*** END ***