

Th.4-AB BASIC ELECTRICAL & ELECTRONICS ENGINEERING

Full Marks: 80

Tim: 3 Hours

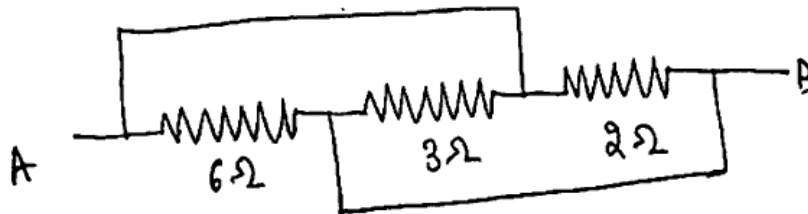
Answer any FIVE Questions including Q No. 1 & 2

Figures in the right hand margin indicates marks

1. Answer ALL the questions

a. Find the equivalent resistance between A & B of the following network.

[2x10]



b. Differentiate between AC and DC?

c. What are the different types of wiring in domestic installation?

d. State Ohm's law

e. Define power factor.

f. Define knee voltage & breakdown voltage.

g. Define and classify Modulation.

h. What is the difference between analog and digital multimeter?

i. What is transducer? State its types.

j. What is the necessity of doping?

2. Answer any SIX questions.

a. Explain briefly AC through RL circuit with phasor diagram.

b. Describe the construction and working of filament lamp.

c. What are the types of single phase induction motor and write their application?

d. Explain working principle of LED. State its application.

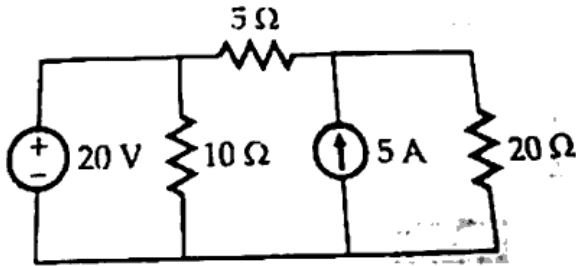
e. What is electron emission & discuss each type of emission?

f. What is filter? Explain its various types.

g. Write the differences between AC and DC.

[5x6]

- 3.a. What are the different configurations of BJT? Explain each with suitable diagram. [5]  
b. Calculate the power loss across  $5\Omega$  resistor. [5]



- 4.a. A resistance of  $10\Omega$ , inductance of  $0.1\text{H}$  & capacitance of  $50\mu\text{F}$  are connected in series across a  $230\text{V}$ ,  $50\text{Hz}$  supply. Find  $Y$ , power factor, active power, reactive power and apparent power. [5]  
b. With neat diagram Explain working of a full wave bridge rectifier. [5]  
5.a. Explain the working of Nuclear Power Plant with neat block diagram. [5]  
b. Explain forward bias & reverse bias mode of operation of P-N junction. [5]  
6.a. A building has the following electrical appliances. [5]  
1. 4 tube lights of 40 watt each running for 15 hours per day  
2. 3 fans each of 80 watt running for 10 hours per day  
3. A 1 HP motor running for 5 hours per day  
Calculate the total units of energy consumed for the month of October.  
b. Classify solids according to their energy band. [5]  
7.a. Briefly explain different parts of DC machine. [5]  
b. Explain working of CRO with block diagram. [5]

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