Total No. of Questions : 8] *[Total No. of Printed Pages : 1*

Roll No .....

BE-104 (GS)

B.E. I & II Semester Examination, June 2020

Grading System (GS)

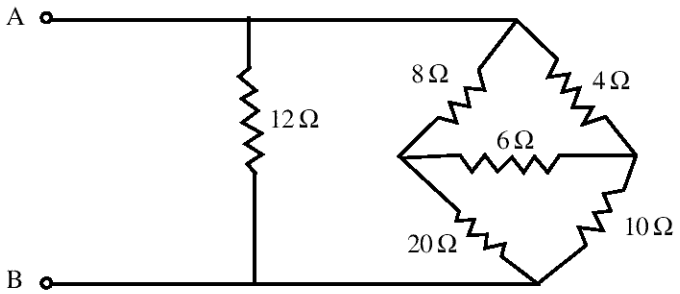
Basic Electrical and Electronics Engineering

Time : Three Hours

Maximum Marks : 70

Note: i) Attempt any five questions.
ii) All questions carry equal marks.

1. a) Define 3-phase balanced supply with phasor diagram.
   b) Find the resistance R_{AB} in the figure using star-delta transformation.



2. Explain.
   i) Apparent power
   ii) Active power
   iii) Reactive power in a.c. circuit

3. Explain the half and full adder circuits with their logic tables.

4. Draw and explain VI characteristics of diode.

5. Explain different operating regions of a Bipolar Junction Transistor.

6. Simplify the Boolean function $Z = AB+\bar{A}C+BC$, therefore design the logic circuit using AND and OR logic gates.

   OR

   Derive the expression for EMF of transformer. What is transformation ratio?

7. Write a short notes on any two:
   a) Super position theorem
   b) Voltage regulation and efficiency
   c) J-K flip-flop

8. Write short notes (any two)
   a) Star-Delta transformation
   b) Equivalent circuit of a transformer
   c) Losses in electrical machines

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