SCHOOL OF ENGINEERING AND TECHNOLOGY
II MID TERM THEORY EXAMINATIONS: JANUARY 2022
B.Tech. Semester-I

Fundamental of Electrical Science
BTEBE105

TIME-2:00Hrs.   Max Marks: 20

Note: All questions are compulsory.

Q1-   **Attempt Any Eight Questions-**   (1x8=8)

   a) Define Active and Reactive power along its formula.

   b) Define Fleming right hand Rule

   c) What is apparent power?

   d) What is the disadvantage of using one wattmeter method?

   e) What is the disadvantage of using three wattmeter method?

   f) Write the formula for power factor by measurement of power by two wattmeter method.

   g) What will be the reading of two wattmeter when the power factor is zero?

   h) What will be the reading of two wattmeter when the power factor is unity?

   i) How will you take the reading of wattmeter when one of the reading is negative

   j) Write application of DC motor

   k) Write applications of three phase induction motor

   l) Define transformer

Q.2

a) Derive the relation between line and phase quantity in case of star connected system. (2)

b) Discuss the working principle of Transformer. (2)

c) Explain with neat diagram working of Transformer. (2)

OR

a) Derive the formula for power in case of two wattmeter method. (2)

b) Derive voltage and current relationship and efficiency in case of Transformer. (2)

c) Three equal impedances each consisting of R and L in series are connected in star and are supplied from 400v,50 Hz three phase three wire balance supply system. The power input to the load is measured by two wattmeter method and two wattmeter reads 3kw and 1 kw.Determine the power factor of the complete circuit. (2)

Q.3

a) Explain with diagram working principle of DC Generator. (2)

b) With the help of neat diagram explain construction of DC machine. (2)

c) With the help of diagram describe the construction of induction motor. (2)

OR

a) Derive the EMF Equation of DC Generator. (2)

b) Explain the principle of operation of three phase induction motor. (2)

c) Compare wound rotor and squirrel cage three phase induction motor. (2)