

[6402]-24

S.E. (Electronics /E&TC)

ELECTRICAL CIRCUITS

(2019 Pattern) (Semester - III) (204183)

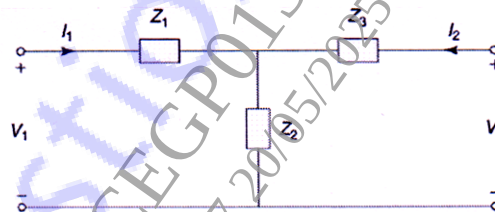
Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates :

- 1) Attempt Q.1 or Q.2, Q.3 or Q.4, Q.5. or Q.6 and Q.7 or Q.8.
- 2) Figures to the right indicate full marks.
- 3) Assume Suitable data if necessary.

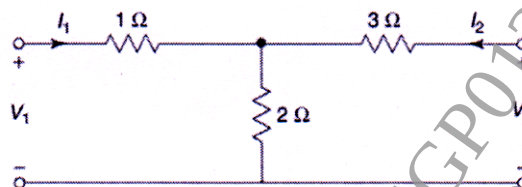
- Q1) a) What are the short circuit admittance parameters? [6]
 b) Find the Z parameters following network. [6]



- c) What is the condition for reciprocity in two port network in terms of Z parameters? [6]

OR

- Q2) a) What are the hybrid parameters-define the parameters. [6]
 b) Find the Y parameters for following network. [6]



- c) What is the condition for symmetry in two port network in terms of Y parameters? [6]

P.T.O.

- Q3)** a) Explain the construction of DC machine with suitable diagram. [6]
b) What are the speed control methods in dc series motor. [6]
c) Derive torque equation of DC motor. [5]

OR

- Q4)** a) What are the advantages and disadvantages of permanent magnet DC motor. [6]
b) What are the different types of starters for dc shunt motor? Explain any one. [6]
c) What is power flow diagram in DC motors and generators. [5]

- Q5)** a) Explain the construction and working of 3 phase induction motor. [6]
b) What do you mean by slip? What is its effect on rotor parameters? [6]
c) Derive torque equation for 3 phase induction motor and state the condition for maximum torque. [6]

OR

- Q6)** a) Explain the construction and working of 1 phase induction motor. [6]
b) What is need of starter? explain any one starter in detail induction motor. [6]
c) Explain speed control of 3 phase motor using v/f method. [6]

- Q7)** a) Explain the construction and working principle of BLDC motor. [6]
b) Explain the torque speed characteristics of BLDC motor and give any three applications. [6]
c) Write a short note on electrical vehicle. [5]

OR

- Q8)** a) Explain the construction and working of stepper motor. [6]
b) What are the different modes of operation of stepper motor? [6]
c) Explain electrical vehicle with neat block diagram. [5]

