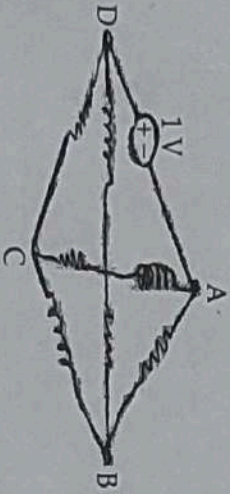


SECTION - D

8. Develop cut set matrix for the network shown below : 20



9. Derive the expression for synthesis of Z_{21} with 1-ohm termination and synthesize the network with suitable example. 20

Roll No.

24025

B. Tech. 3rd Semester (EEE)
Examination – March, 2021

NETWORK THEORY

Paper : EE-203-F

Time : Three Hours]

[Maximum Marks : 100

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt *five* questions in all, selecting *one* question from each Unit. Questions No. 1 is *compulsory*. All question carry equal marks.

1. (i) Determine the Laplace transform for the standard signal such as Ramp and Impulse function.
(ii) Drive the expression for series interconnection of two port network.
(iii) What are the properties of Hurwitz polynomial ?
(iv) Explain the concept of duality in network ? 20

24025-

-(P-4)(Q-9)(21) (4)

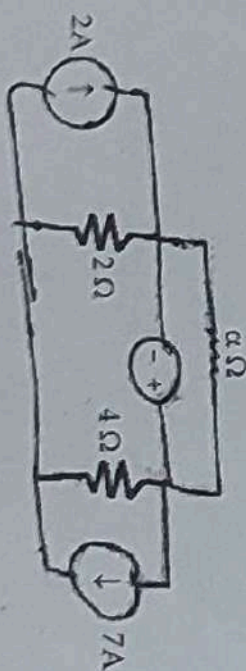
24025-

-(P-4)(Q-9)(21)

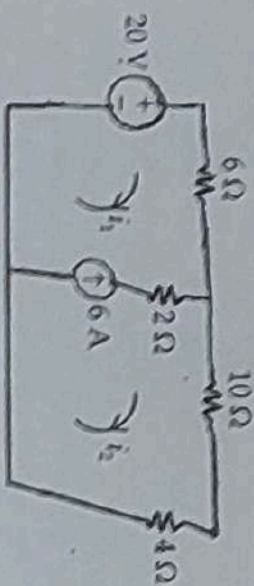
P. T. O.

SECTION - A

2. Find node Voltage for the circuit as shown below : 20

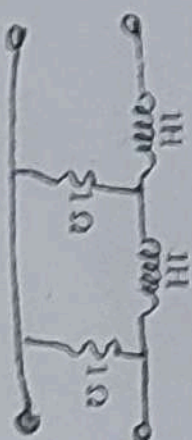


3. Determine I_1 and I_2 using mesh analysis for the circuit as shown below : 20



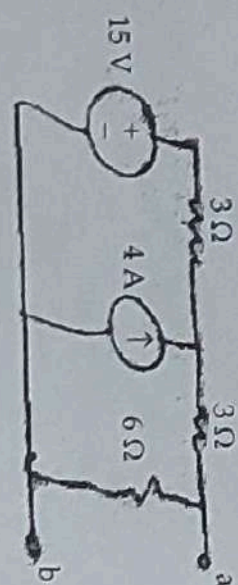
SECTION - B

4. Determine g-parameter in s-domain for the ladder network of the circuit as shown below : 20



24025- (P-4)/(Q-9)/(21) (2)

5. Using Norton theorem, find the equivalent circuit to the left of the terminal in circuit shown below and find the I_L . 20



SECTION - C

6. Synthesize the LC network for the impedance as given below : 20

$$Z(s) = (S^2 + 25)/S(S^2 + 36)$$

- (i) Foster-I
(ii) Foster-II

7. Check whether following function is p.r.f. or not? 20

$$F(s) = (S^3 + 5S^2 + 9S + 3)/(S^3 + 4S^2 + 7S + 9)$$

24025- (P-4)/(Q-9)/(21) (3)

P. T. O.