Roll No. .....

OLE-3038

B. Tech 3rd Semester (ECE) Examination – April, 2021

NETWORK THEORY

Paper :PCC-ECE-211-G

Time : Three Hours] ***[Maximum Marks :75***

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 : Question No. **1** is ***compulsory***. Attempt ***five*** questions in total selecting ***one*** question from each Section.

1. (a) Give Applications of Maximum power transfer theorem.

(b) Define cycle, frequency and time period.

(c) Discuss difference between series and parallel resonance.

(d) What is importance of power factor and how it is calculated ?

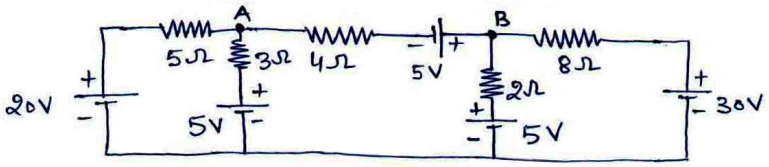
(e) Discuss prototype band reject filter.

(f) Give charactristics of two port network.

$2.5 \times 6 = 15$

SECTION – A

2. Find the current supplied by each battery in the circuit shown in fig. by using Node analysis. 15



3. Explain the following theorems : 15

(a) Norton's theorem

(b) Tallegen's theorem.

SECTION – B

4. Explain steady state response of a network to non-sinusoidal periodic inputs. 15

5. (a) Discuss properties of Laplace transform. 7.5

(b) Discuss wave form synthesis. 7.5

SECTION – C

6. Drive an expression for transient response in RLC circuit with DC excitation. 15

7. (a) Explain convolution theorem. 7.5

(b) Discuss sinusoidal response for pole-zero locations. 7.5

SECTION – D

8. (a) Discuss short - circuit Admittance parameters. 7.5

(b) Explain interconnection of two port networks. 7.5

9. Write short notes on : 15

(a) Analysis & design of prototype high pass filters.

(b) Graph matrices.