5. (a) Explain the behaviour of shunt RLC circuit for AC signal. **7.5**

(b) Differentiate between balanced and unbalanced 3-phase AC circuits. **7.5**

Unit III

6. (a) Draw the phasor diagram for a real transformer with capacitive load. **7.5**

(b) Derive EMF equation of a transformer. **7.5**

7. Describe construction, working principle and types of three-phase induction motors with suitable diagrams. **15**

Unit IV

8. (a) Explain different types of wires and cables which are used for connections in Electrical and Electronics appliances. **7.5**

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18A11

B.Tech. EXAMINATION, 2022

(First Semester)

(C Scheme) (Main & Re-appear)

(Common for all Branches)

EE101C

BASIC ELECTRICAL ENGINEERING

Time : 3 Hours] [*Maximum Marks : 75*

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

Note : Q. No. **1** is compulsory. Attempt *Four* more questions from the remaining questions, selecting *one* question from each Unit.

1. (a) What is the difference among resistance, reactance and impedance ? **2.5**

(b) Define Q-factor. **2.5**

(c) What is the difference between active and reactive powers ? **2.5**

(d) What is use of slip ring ? **2.5**

(e) What is difference between phase and line currents ? **2.5**

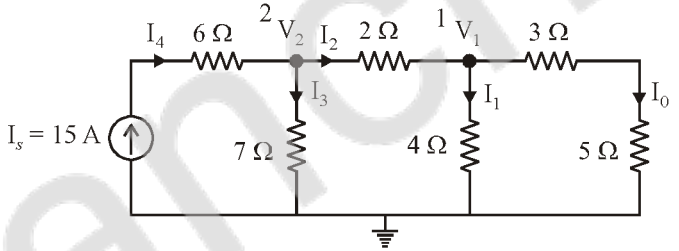
(f) Why power of a electric source is represented in VA instead of Watt ? **2.5**

Unit I

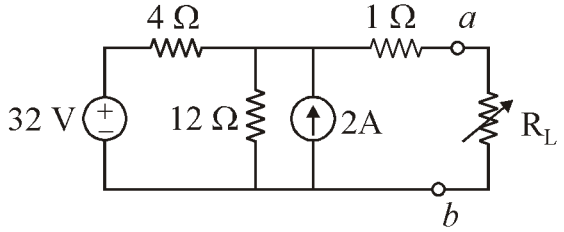
2. (a) Derive formulate for star to delta and delta to star conversion. **7.5**

(b) Explain superposition theorem. Explain its practical application also. **7.5**

3. (a) In the following circuit, find out the current across 4 Ω resistance using nodal analysis. **7.5**



(b) In the following circuit, using Norton's theorem, find out current across R_L. **7.5**



Unit II

4. (a) Calculate average value of a half wave rectified signal. **7.5**

(b) Derive Q-factor of series resonant circuit. **7.5**

(b) Explain different types of batteries. Also explain their specific applications. **7.5**

9. Write notes on the following :

(a) ELCB **7.5**

(b) MCCB. **7.5**

(b) Explain different types of batteries. Also explain their specific applications. **7.5**

9. Write notes on the following :

(a) ELCB **7.5**

(b) MCCB. **7.5**