

T.E. ELEC SEM V C-Scheme June 2026.

Duration : 03 hrs

Maximum Marks = 80

05/06/26.

NOTE

1. Question No 1 is Compulsory.
2. Attempt any three questions out of the remaining five questions.
3. Assume the suitable data if necessary and justify the same.

Question no.	Question	Marks
Q.1 A	What is the fault ? Why do faults occur ? What is the effect of faults ?	05
Q.1 B	What is the current chopping phenomenon ?	05
Q.1 C	Draw and explain Use of ground wires in transmission lines	05
Q.1 D	State and Explain factors affecting corona loss	05
Q.2 A	Describe the short circuit of a synchronous machine at no-load condition.	10
Q.2 B	Explain and draw the zero sequence networks for following types of connections of a three phase transformer i) Delta-Delta ii) Delta-Star(ungrounded) iii) Delta-Star(Grounded) iv) Star(Grounded)- Star(Grounded) v) Star(ungrounded)- Star(ungrounded)	10
Q.3 A	Derive the equation for fault current for Double line to Ground (LL-G) fault. State the various assumptions. Draw the sequence network for the same.	10
Q.3 B	Discuss the lightning phenomenon is step by step manner	10
Q.4 A	Describe the Z- Bus formulation.	10
Q.4 B	The line currents in a 3 phase system are $I_a = 60 + j40$, $I_b = (-80 + j20)$, $I_c = 20 - j60$. Find the symmetrical components of line current. The line to neutral voltages in a 3 phase system are $V_{an} = 200 \angle 0^\circ$, $V_{bn} = 600 \angle 100^\circ$, $V_{cn} = 400 \angle 270^\circ$. Find V_{a1} , V_{a2} and V_{a0}	10

- Q.5 A Why is insulation coordination required ? Explain the following : 1. Surge Reactor 2. Surge capacitor 3. Lightning Rod 10
- Q.5 B Discuss the phenomenon of transient generation due to capacitance switching. 10
- Q.6 A Discuss the generation and formation of corona ring. 10
- Q.6 B Derive the Fortescue theorem for symmetrical fault analysis 10
