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B TECH
(SEM V) THEORY EXAMINATION 2021-22
ELECTRICAL STANDARDS AND ENGINEERING PRACTICES

Time: 3 Hours

Total Marks: 100

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A1. Attempt *all* questions in brief.

2 x 10 = 20

Q no.	Question
a.	Give important remarks on engineering design practices.
b.	Give the overview of IS standards for cables? Explain.
c.	What is NEMA? Is it generalized or specified? Explain.
d.	What are the IS standards for motors? Are IS standards same for motor and generator? Explain
e.	What are the IS standards for transformer? Explain
f.	Narrate HV switchgears.
g.	Differentiate earthing and lightning protection system.
h.	What do you mean by load estimation? How mathematical modelling helps us to estimate load conditions? Explain.
i.	Differentiate touch and step potentials.
j.	Explain different losses in current transformers.

SECTION B2. Attempt any *three* of the following:

10X3=30

Q no.	Question
a.	How Hazardous area is classified? What are the important terms which are used in the same? Explain
b.	What are electrical equipments for different hazardous zones? Illustrate some practical examples.
c.	Write an essay on safety and installation guidelines.
d.	With neat sketches, explain Instrument transformers which are readily available in power sector.
e.	Differentiate IS-10322 and IS-6665.

SECTION C3. Attempt any *one* part of the following:

10X1=10

Q no.	Question
a.	Explain thermal and electrical resistivity of soil.
b.	With proper table, explain different electrical standards & codes.

4. Attempt any *one* part of the following:

10X1=10

Q no.	Question
a.	Differentiate IS-8130, IS-10810, and IS-1554.
b.	Differentiate 'type test' and 'routine tests.' Is transformer test comes in routine test or type test? Explain.



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5. Attempt any *one* part of the following:

10X1=10

Q no.	Question
a.	Explain the types of a transformer with neat sketches. Enlist the important losses which are encountered.
b.	Explain the following terms-Instrument safety factor, VA burden, knee point voltage and accuracy.

6. Attempt any *one* part of the following:

10X1=10

Q no.	Question
a.	What are rating factors and bonding methods in electrical engineering which are used by the power industry?
b.	Discuss National Building Code of India, and cable types.

7. Attempt any *one* part of the following:

10X1=10

Q no.	Question
a.	Explain sizing and selection of transformers. What are the key elements which plays important role in the reduction of transformer losses in the context of site selection/ or other parameters?
b.	Narrate the CEA Regulations 2010 and important amendments which are taken by authority.