



BRAINWARE UNIVERSITY

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Brainware University
Barasat, Kolkata -700125

Term End Examination 2023

Programme – Dip.EE-2018/Dip.EE-2019/Dip.EE-2021

Course Name – Transmission and Distribution of Power

Course Code - DEE403

(Semester IV)

Full Marks : 60

Time : 2:30 Hours

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question)

1 x 15=15

1. *Choose the correct alternative from the following :*

- (i) Name the purpose of guard ring
 - a) Reduce the earth capacitance of the lowest unit
 - b) Increase the earth capacitance of the lowest unit.
 - c) Reduce the transmission line losses
 - d) None of these.
- (ii) Effect of temperature rise in overhead lines is to
 - a) Increase the sag and decrease the tension
 - b) Decrease the sag and increase the tension
 - c) Increase both
 - d) Decrease both
- (iii) Explain The function of steel wire in an ACSR conductor is to
 - a) Compensate for skin effect.
 - b) Take care of surges.
 - c) Provide additional mechanical strength.
 - d) Reduce inductance.
- (iv) Identify Why Steel poles for transmission lines need protection against
 - a) Borer
 - b) Termites
 - c) Corrosion
 - d) All of these
- (v) Express Corona is accompanied by
 - a) violet visible light
 - b) hissing sound
 - c) power loss and interference
 - d) all of the above
- (vi) State voltage regulation of a transmission line should be
 - a) Minimum
 - b) Maximum
 - c) Greater than 50 %
 - d) Less than 50 %
- (vii) Identify material for armouring on cable is usually
 - a) Steel tape steel wire
 - b) Galvanized
 - c) Any of the above
 - d) None of the above
- (viii) Which of the following is usually not the generating voltage?
 - a) 6.6 kV
 - b) 9.9 kV
 - c) 11 kV
 - d) 13.2 kV

- (ix) The main drawback of the underground system over the overhead system is
- | | |
|---|---|
| a) Exposure to lightning | b) Heavy initial cost |
| c) Exposure to atmospheric hazards such as smoke, ice, wind, etc. | d) Inductive interference between power and communication circuit |
- (x) In case of dc voltage, name colour beads are formed near the negative conductor?
- | | |
|-------------|------------|
| a) Reddish. | b) Bluish |
| c) Greenish | d) Violet. |
- (xi) Express overhead lines generally use
- | | |
|------------------------|----------------------|
| a) A.C.S.R. conductors | b) Copper conductors |
| c) Aluminum conductors | d) Any of the above |
- (xii) Explain for what voltage is Twin conductor bundle used in India
- | | |
|-----------|-----------|
| a) 220 kV | b) 500 kV |
| c) 750 kV | d) 330 kV |
- (xiii) The current distribution may not be uniform in a conductor, name the effect
- | | |
|---------------------|----------------------|
| a) Skin effect | b) Proximity effect. |
| c) Ferranti effect. | d) None of these |
- (xiv) Feeder is designed mainly from the point of view of
- | | |
|----------------------------------|------------------------|
| a) Its current carrying capacity | b) Voltage drop in it |
| c) Operating frequency | d) Operating frequency |
- (xv) Express the main purpose for guy wire in distribution
- | | |
|------------------------------------|--------------------------------|
| a) Provides emergency earth route. | b) Protects against the surges |
| c) Supports the pole | d) All of these. |

Group-B

(Short Answer Type Questions)

3 x 5=15

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|---|-----|
| 2. Name the applications of Transmission Line | (3) |
| 3. Explain the Ferranti effect. | (3) |
| 4. Explain the effect of rain on string efficiency. | (3) |
| 5. Explain The Purpose Of Fuse | (3) |
| 6. Define Sub-station | (3) |

OR

Define Characteristic impedence	(3)
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Group-C

(Long Answer Type Questions)

5 x 6=30

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| 7. Identify the type of Underground Cable | (5) |
| 8. Draw the converter station unit in the HVDC transmission system | (5) |
| 9. Differentiate the difference between ACSR and AAAC. | (5) |
| 10. Mention the factors that affect sag in the transmission line | (5) |
| 11. explain the proximity effect in transmission line | (5) |
| 12. Name the new modern trends in DC transmission. | (5) |

OR

Draw the converter station unit in the HVDC transmission system	(5)
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