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Brainware University
398, Ramkrishnapur Road, Barasat
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BRAINWARE UNIVERSITY

Term End Examination 2025-2026

Programme – Dip.EE-2022/Dip.EE-2023

Course Name – Electrical Design Estimation and Costing

Course Code - DEEPC601

(Semester VI)

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) Identify Candela is the unit of
 - a) Luminous flux
 - b) Luminous intensity
 - c) Wavelength
 - d) None of these
- (ii) Tell the IE rule is applicable to service mains
 - a) Rule 30
 - b) Rule 33
 - c) Rule 77
 - d) All of these
- (iii) State energy conservation act was formed in the year
 - a) 1998
 - b) 1999
 - c) 2000
 - d) 2001
- (iv) State the Indian Electricity Rule that deals with periodical inspection and testing of consumer's installation.
 - a) Rule 56
 - b) Rule 54
 - c) Rule 46
 - d) Rule 31
- (v) According to the IS code, identify the color of Earth Wire is Usually
 - a) Red
 - b) Yellow
 - c) Black
 - d) Green
- (vi) Identify the Indian Electricity rule is applicable to Service Mains?
 - a) Rule 30
 - b) Rule 39
 - c) Rule 73
 - d) Rule 51
- (vii) Tell which of the following is a major benefit of standardization.
 - a) Higher manufacturing defects
 - b) Difficulty in maintenance
 - c) Reduction in production cost
 - d) Increase in raw material wastage
- (viii) Select the IE rule deals with the supply to X- rays and high frequency installations
 - a) Rule 30
 - b) Rule 39
 - c) Rule 73
 - d) Rule 51

- (ix) Choose the application where carbon arc lamps are commonly used.
- Domestic lighting
 - Street lighting
 - Cinema Projector
 - Photography
- (x) Choose which of the pipe material has maximum modulus of elasticity
- Concrete
 - Mild steel
 - Cast iron
 - PVC
- (xi) Select the minimum insulation resistance of a 11 kV line when tested with a 1000 V Megger
- 10 kV
 - 50 kV
 - 33 kV
 - 120 kV
- (xii) Choose lumens radiated by a point source of light of 120 cd is approximately
- 1500 lm
 - 750 lm
 - 480 lm
 - 240 lm
- (xiii) After the inspection at the site, you found everything is in good condition. Choose the reason behind that?
- Proper care is taken by the manufacturer
 - proper packages
 - Good transportation
 - All of these
- (xiv) Select the maximum rating of distribution transformer as per I.S.S. is
- 200 kVA
 - 500 kVA
 - 1000 kVA
 - 2000 kVA
- (xv) Express the benefit of standardization related to manufacturing.
- Increased production time
 - Reduced interchangeability
 - Economies of scale
 - Increased inventory cost

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Group-B

(Short Answer Type Questions)

3 x 5=15

- Explain the modes of Tendering. (3)
- State and explain importance of lightning arrester. (3)
- Describe the construction of Single core V.I.R Cable. (3)
- Explain the advantages of Earthing. (3)
- Explain about Overhead charges. (3)

OR

Illustrate the procedure of load calculation for a commercial complex. (3)

Group-C

(Long Answer Type Questions)

5 x 6=30

- State and explain any three IE rules that are most important. (5)
- Explain the different circuits involved, the maximum rating of each circuit and how the number of sub-circuits are calculated. (5)
- Explain the main features of residential electrification. (5)
- Explain important considerations regarding power circuit of motor wiring. (5)
- Analyze the design considerations for air-conditioned shopping malls. (5)
- Explain the guidelines of industrial electrification. (5)

OR

Explain the guidelines of non-industrial electrification. (5)
