16004

BRAINWARE UNIVERSITY

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Brainware University
398, Ramkrishnapur Road, Barasat
Kolkata, West Bengal-700125

Term End Examination 2025-2026
Programme – Dip.CE-2022/Dip.CE-2023
Course Name – Estimating, Costing and Valuation
Course Code - DCEPC502
(Semester V)

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) List the uses of a Renovation Estimate.

a) To update the project schedule
b) To modify existing structures
c) To reduce project costs
d) To change the project scope

(ii) Identify the IS code relevant to modes of measurement in civil works.

a) IS:456
b) IS:1200
c) IS:800
d) IS:1893

(iii) Identify the method that calculates the estimated cost by multiplying the total length of a road by a unit rate per kilometer.

a) Plinth area method
b) Road length method
c) Kilometer rate method
d) Detailed estimate method

(iv) Select the approximate estimate type most suitable for a water supply project.

a) Per meter run method
b) Cubic rate method
c) Lump sum method
d) Unit rate method

(v) Classify the method of estimate that considers the per-square-meter rate of floor area.

a) Plinth area method
b) Cube rate method
c) Unit rate method
d) Lump sum method

(vi) Select the method involving a rough estimate based on past experiences.

a) Historical cost method
b) Empirical method
c) Analytical method
d) Detailed method

(vii) Select the data needed for a detailed estimate.

a) Project design and land cost
b) Civil cost, GST, Contingencies
c) Soil test results and market survey
d) Project duration and labor availability

(viii) Choose the correct provision that accounts for unforeseen expenses in a detailed estimate.

a) Contingencies
b) Prime cost
c) Provisional sum
d) Agency charges

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(ix) Write the term that describes the estimated amount reserved for adjustments in the cost estimate.

a) Provisional sum
b) Contingencies
c) Prime cost
d) Site items

(x) Select the correct method for estimating the volume of a community well.

a) Trapezoidal formula method
b) Mean sectional area method
c) Mid-sectional area method
d) Average depth method

(xi) State the main purpose of the trapezoidal formula method.

a) To calculate labor costs
b) To estimate excavation volumes in earthworks
c) To determine project duration
d) To measure material quantities

(xii) Identify the type of estimate where detailed quantities are abstracted from plans.

a) Preliminary estimate
b) Detailed estimate
c) Rough estimate
d) Abstract estimate

(xiii) Identify the document used as a reference for rate analysis in civil engineering.

a) PWD Schedule of Rate
b) Project design report
c) Material specification sheet
d) Site survey report

(xiv) Identify the type of labor categorized based on their skills and daily wages.

a) Skilled, semi-skilled, unskilled
b) Technical, non-technical
c) Administrative, operational
d) Permanent, temporary

(xv) Classify the type of rate analysis that incorporates transportation and equipment hire costs.

a) Building work analysis
b) Road work analysis
c) Material rate analysis
d) Equipment hire analysis

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Group-B

(Short Answer Type Questions) 3 x 5=15

2. A rectangular room measures 6 m × 4 m (internal dimensions), with wall thickness 0.3 m. Calculate the total center line length of the four walls. (3)
3. To prepare the rough cost estimate of a hostel building which accommodate 150 students. The cost of construction including all provisions are Rs. 15,000/- per student. Determine total cost of building. (3)
4. The plinth area and plinth area rate of a residential building are 100 sqm and Rs. 5000/- respectively. Determine the total cost of building assuming suitable provisions. (3)
5. Prepare an approximate estimate or rough cost estimate of a hospital building for 50 beds. The cost of construction altogether for each bed is Rs. 60,000/-. Determine the total cost of hospital building. (3)
6. Calculate the rate per metre for brickwork in cement mortar 1:6 for a half-brick partition wall. (3)

OR

A building has outer dimensions 8 m × 6 m. Thickness of wall is 0.25 m and height is 3 m. Calculate total volume of brickwork using long wall-short wall method. (3)

Group-C

(Long Answer Type Questions) 5 x 6=30

7. Calculate the rate per cubic metre for cement concrete (1:2:4) including materials and labour. (5)
8. Determine the rate per square metre for 12 mm thick plastering in cement mortar 1:4. (5)
9. Determine an approximate estimate of a town hall building having are = 1800 m2. a. Plinth area rate as Rs 5200/m2 for building. b. Special architectural treatment = 3% of cost of building. c. Electric Installation = 8% of cost of building. d. Other services = 6% of cost of building. (5)

10. Calculate an approximate estimate of bridge having 5 spans of 45m each using following data: 1. cost of existing bridge Rs. 1.25 crore 2. Existing bridge having 4 spans of 50m each. (5)
11. Determine the approximate estimate for small residential building using plinth area rate Rs. 15000/- square meter. 1. Drawing Hall (3.6 x 5.0) m - 1 number 2. Bedroom (2.7 x 5.5) m - 1 number 3. Kitchen (2.7 x 5.5) m - 1 number 4. Toilet Block (2.8 x 3.0) m - 2 numbers (5)
12. Analyze the significance of prime cost and provisional sums in the budgeting of a construction project. (5)

OR

Evaluate the advantages and limitations of using the Long Wall and Short Wall method for estimating quantities in a large-scale project. (5)

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