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CE 181701

Roll No. of candidate

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1512 / 22 2021

BINA CHOWDHURY CENTRAL LIBRARY
(IIMT & RIPS)
Azara Hatikawapara,
Gowahati - 781017

B.Tech. 7th Semester End-Term Examination

CE

QUANTITY SURVEYING

(New Regulation w.e.f. 2017-18 & New Syllabus w.e.f. 2018-19)

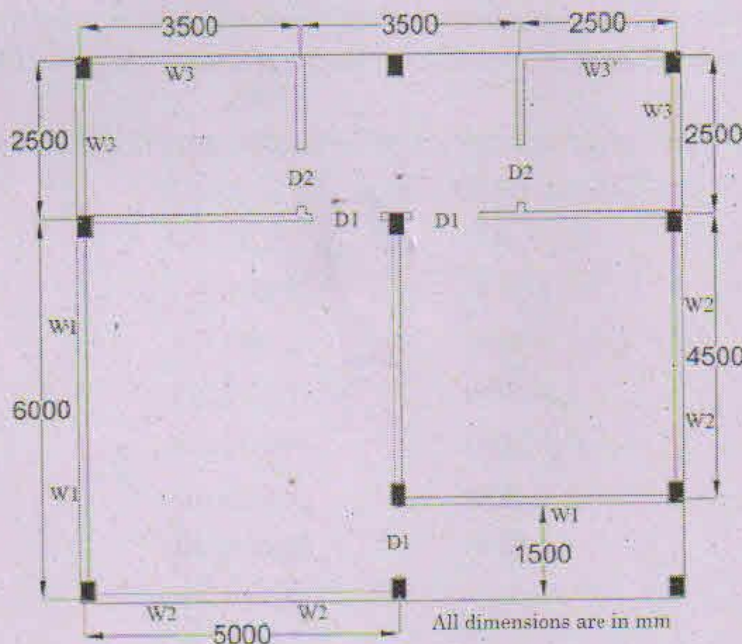
Full Marks – 70

Time – Three hours

The figures in the margin indicate full marks for the questions.

Answer question No. 1 and any *three* from the rest.

1. (a) The Plan of a Flat Roof R.C.C Residential Building showing position of Columns, Doors, Windows and Steps is given below: (5 × 4 = 20)



- (i) Plinth Height is 0.75 m and height of the building above plinth as 3.3 m, excluding parapet wall of height 0.75 m
- (ii) Consider Full Brick Wall (250 mm thick) up to Plinth Level from the Tie Beam of 250 mm × 400 mm, top surface of the Tie Beam is 200 mm above Ground Level and resting over flat brick soling of 75 mm and Half Brick Wall (125 mm) for Superstructure above Plinth.

[Turn over

(iii) Columns of Size: 400 mm × 250 mm; Roof Beam size = 250 mm × 400 mm; Slab thickness = 125 mm; Lintel size = 125 mm × 150 mm

(iv) Doors and Windows frame sizes:

D1 = 1.1 m × 2.1 m; D2 = 0.9 m × 2.1 m;

W1 = 1.2 m × 1.5 m; W2 = 1.0 m × 1.5 m; W3 = 0.6 m × 0.6 m

(v) Depth of column footing (1.8 m × 1.4 m) = 2.0 m;

Consider flat brick soling of 75 mm and Cement Concrete (1:3:6) of 100 mm underneath each footing.

Estimate the Quantities for:

(1) Earthwork in Excavation

(2) Brick Work upto plinth

(3) Plastering Works on Inside Wall (12 mm thick)

(4) R.C.C. works in Footing of Column

(b) Differentiate Long wall – short wall method and Centre line method of estimating. (5)

2. (a) Reduced Level of ground along the centre line of a proposed road from chainage– 0.0m to 1000m is given below. The formation level at the chainage–0 is 108.0 m and the road is in downward gradient of 1 in 300 up to a chainage-5 band then the gradient changes to 1 in 100 upward. Formation width of the road is 10.0 m and side slopes of banking are 2H:1V.

R.L. of the existing ground for the longitudinal profile are given below: (12)

| Distance in metre | R.L. at G.L. |
|-------------------|--------------|
| 0 | 106.20 |
| 100 | 106.85 |
| 200 | 106.50 |
| 300 | 106.15 |
| 400 | 105.28 |
| 500 | 105.50 |
| 600 | 106.00 |
| 700 | 107.88 |
| 800 | 109.25 |
| 9 | 110.15 |
| 10 | 110.50 |

Prepare the estimate for the quantity of Earthwork.

(b) Explain – supplementary estimate. (3)

3. (a) Analyse the rate for the following items: use PWD Building Schedule (any two) : $(2 \times 6 = 12)$

(i) R.C.C. Slab 125 mm thick with 1% reinforcement using M-20 concrete with nominal mixing

(ii) 12 mm thick 1:3 cement-sand mortar plastering

(iii) Half brick wall with 1:4 cement sand mortar in superstructure

(b) Choose the correct answer : $(3 \times 1 = 3)$

(i) Specifications for hold fasts are given in terms of

(1) Weight

(2) Volume

(3) Length

(4) Diameter

(ii) A revised estimate is prepared if the sanctioned estimate exceeds

(1) 2 %

(2) 5 %

(3) 10%

(4) 20%

(iii) Damp proof course is measured in

(1) Cubic metre

(2) Sq. metre

(3) metre

(4) kilogram

4. (a) Distinguish [- Price, Value and Cost. Explain how the price of a commodity is determined by the supply and demand. $(3+4 = 7)$

(b) The economic life of a structure is 70 years. Calculate the value of the property after 5 years and 15 years of depreciation adopting following methods— (Take present value of the property is Rs. 75,000,00/-) (8)

(i) Constant percentage method at 2.25%

(ii) Sinking fund method at 4.5%

5. The co-ordinates of a plot of land ABCDEFA are given below:

| Coordinates (metres) | Points | | | | | | | | | |
|----------------------|--------|----|----|-----|-----|-----|-----|-----|-----|----|
| | A | B | C | D | E | F | P | Q | R | S |
| Along X-axis | 80 | 80 | 10 | 10 | 110 | 110 | 90 | 110 | 110 | 90 |
| Along Y-axis | 0 | 40 | 60 | 120 | 120 | 0 | 100 | 100 | 90 | 90 |

The plot PQRS is a pond area. If the land to a depth of 40 m in the locality is found to have been valued at Rs. 1500 per sq.m, estimate the value of the plot of land ABCDEFA. The face AF is on a roadway. (15)

6. (a) A property consist of a house and one bigha land and it yields a gross rent of Rs. 8,500 p.m. inclusive of taxes. It is expected that the property will produce a gross rent of Rs. 8,000 p.m after 18 years for 7 years and then Rs. 7,500 p.m for next 15 years. Cost of land is Rs. 8,00,000 and it is expected to remain constant. Take salvage value = 10% of the present value of the building. (10)

(b) Define – Deferred annuity, Rack rent. (2 + 3 = 5)

Find an expression for Annual Sinking Fund.

7. (a) Differentiate between (3 ½ × 2 = 7)

(i) Book value and Market value.

(ii) Lease hold property and Free hold property

(b) Write short notes on (any two) : (2 × 4 = 8)

(i) Unsecured ground rent

(ii) Access value and Distress value

(iii) Sum of the digits method of depreciation.

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