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CE 131704

Roll No. of candidate

2017

B.Tech. 7th Semester End-Term Examination

Civil

QUANTITY SURVEY AND ESTIMATION

Full Marks – 100   Time – Three hours

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

Answer Question No.1 and any six from the rest.

1.   Multiple choice questions :(Answer all the questions)

$(10 \times 1 = 10)$

(a)   The number of standard modular bricks required to make one cubic meter of masonry is

(i)   480

(ii)   450

(iii) 550

(iv) 500

(b)   Revised estimate is required due to

(i)   Changes of quantity of materials, rate

(ii)   Changes of design

(iii) Addition of new works

(iv) All of above

[Turn over

(c) For plinth area measurement, balcony is

    (i) Included

    (ii) Not included

    (iii) Included only for residential building

    (iv) Included only for office building

(d) Along with tender a contractor has to deposit

    (i) Security deposit

    (ii) Earnest money

    (iii) Registration fees

    (iv) All of above

(e) The volume of one bag of cement is

    (i) $0.0214 \ m^3$

    (ii) $0.0347 \ m^3$

    (iii) $0.0434 \ m^3$

    (iv) $0.0036 \ m^3$

(f) Soling stone, boulder or rubble is measured after making a deduction from stack measurement for voids by

    (i) 5%

    (ii) 10%

    (iii) 15%

    (iv) 20%

(g) The volume of coarse aggregate required to make $100 m^3$ of concrete of proportion 1:2:4 is

    (i) $84 \ m^3$

    (ii) $88 \ m^3$

    (iii) $92 \ m^3$

    (iv) $82 \ m^3$

(h) The overhead costs includes

    (i) Travelling expenses

    (ii) Amenities of labour

    (iii) Depreciation of T&P

    (iv) All of above

(i) To calculate the volume of earth work from contour plan, for filling a pond or depression, the following method/formula is used conveniently

    (i) Mid-section area method

    (ii) Trapezoidal formula

    (iii) Prismoidal formula

    (iv) All of above

(j) The unit of lift for earthwork is

    (i) 10 m

    (ii) 1.25 m

    (iii) 1.5 m

    (iv) 2.0 m

2. Mention the difference of the following   (5 × 3 = 15)

(a) Supplementary estimate and Revised estimate.

(b) Administrative approval and Technical sanction.

(c) Building lease and occupational lease.

(d) Salvage value and Scrap value.

(e) Units of measurement and Units of payment.

3. (a) What are the different methods of computation of earth work? Briefly explain each method. Which method do you consider best and why? (10)

   (b) Discuss briefly prismoidal correction applied in estimation of earthwork. (5)

4. (a) What do you mean by specification and what are its necessities? Discuss different types of specification. (10)

   (b) Write the general specification of a second class building. (5)

5. (a) Define cost, value and price. (5)

   (b) Work out the percentage rate of annual depreciation by constant percentage method for a property assuming P = rate of annual depreciation, C = annual cost, S_c = Scrap value, n = life of the property in years. (5)

   (c) Explain the rental method of valuation of a building. (5)

6. (a) List the difference between market and book value. (5)

   (b) An old building has been purchased by a person at a cost of Rs. 30000.00 excluding the cost of land. Calculate the amount of annual sinking fund at 4% interest assuming the future life of the building as 20 years and the scrap value of the building as 10% of the cost of purchase. (5)

   (c) A lease hold property is to produce a net income of Rs. 12000.00 per annum for the next 60 years. What is the value of the property? Assume that the landlord desires a return of 6% on his capital and the sinking fund to race the capital is also to accumulate at 6%. (5)

7. (a) Briefly describe the factors effecting the rate analysis. (3)

   (b) What is Schedule of Rate? How it is prepared? (3)

   (c) Write a scheduled item for earthwork in excavation for foundation of a building. (3)

   (d) Analyze the rate for cement concrete $1:1\frac{1}{2}:3$, taking 10 cubic meters. (6)

   Assume the rate as under

   Coarse Aggregate 40 mm gauge-Rs. 1800/- per cum,

   Sand   -Rs. 360/- per cum,

   Cement   -Rs. 360/- per bag,

   Head Mason   -Rs. 500/- per day,

   Mason   -Rs. 400/- per day

   Skilled Labour -Rs. 300/- per day

   Ordinary Labour -Rs 250/- per day

   Water man   -Rs. 200/- per day

8. (a) Estimate the quantity and cost of earth work for a road between two stations A to B with the following data. (10)

   Width of road is 10 m at formation surface and side slope 2:1. Rate of earth work in banking and cutting may be taken as Rs. 50/-per cu m including a lead up to 150 m with a condition

that portion of earthwork available from cutting is to be utilized for banking within the same lead of 150 m. The data of field book for the portion of road are given below.

Chainage	Reduced level	Formation level
0	123.90	123.30
1	125.00	123.60
2	124.60	124.00
3	122.90	123.60
4	121.60	123.20
5	121.00	122.80
6	120.40	122.40

(One Chain=30 m)

(b) What is a Detailed Project Report? List some important items that DPR of a building project should consist of (5)

9. (a) What are the differences between 'Center Line Method' and 'Long and Short Wall Method' of estimating? (3)

(b) Estimate for the following items of the building shown in the accompanying 12 sketch. (12)

(i) Earthwork in excavation

(ii) CR Masonry in cement mortar (1:6) in the basement

(iii) Laterite stone masonry in cement mortar (1:5) in the super structure

(iv) RCC (1:2:4) in Chajja, lintel and roof slab Rate may be taken as
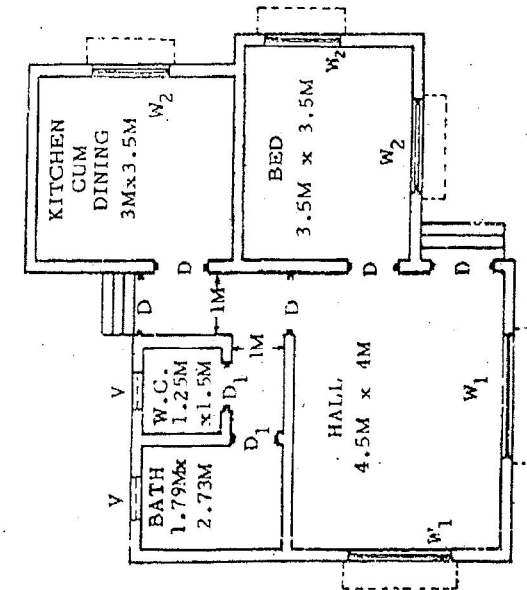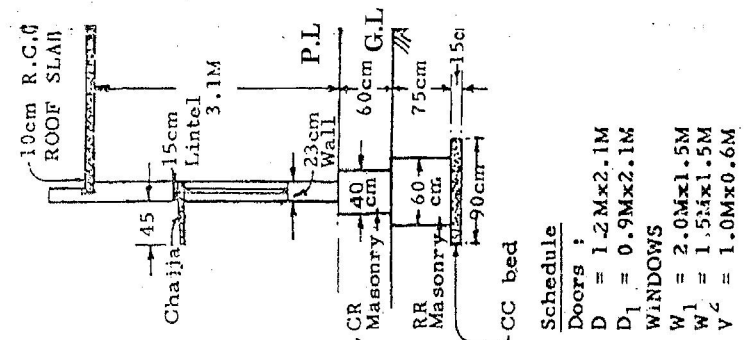
Rs. 65/- per cum for earthwork in excavation

Rs. 2000/- per cum for CR masonry

Rs. 3000/- per cum of laterite stone masonry

Rs. 5000/- per cum of RCC (1:2:4).