53 (CE 701) ESCS

2018

ESTIMATION AND COSTING

Paper : CE 701

Full Marks : 100

Time : Three hours

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

*Answer **any five** questions.*

1. Analyse the rate of : 10×2=20

   (a) R.C.C. work in beam 1 : 2 : 4, unit 1*cum*, take = 10*cum*.

   (b) 2·5*cm* thick cement concrete 1 : 1·5 : 3, Damp Proof Course (DPC), unit-1 *sqm*, take = 100 *sqm*.

2. *(a)* Define depreciation. What are the methods of calculating depreciation ? 5

(b) A person has purchased an old building at a cost of Rs. 90,000.00 on the basis of that the cost of land is Rs. 50,000 and cost of building structure Rs. 40,000.00. Consider the future life of the building structure be 20 years, work out the amount of annual sinking fund at 4% interest, when scrap value is 10% of the cost of the building. 5

(c) Prepare a preliminary estimate of a 4 storeyed office building having a carpet area of 2000 *sqm* for obtaining administrative approval of the govt. given the following data. It may be assumed that 30% of built up area will be taken up by the corridors, verandah, lavatories, staircases etc and 10% of built up area will be occupied by walls.

(i) Plinth area rates = 950 per *sqm*

(ii) Deep foundation at site = 1% of building cost

(iii) Architectural treatment = 0·5% of building cost

(iv) Water supply and sanitary installation = 6% of building cost

(v) Electrical installation = 12·5% of building cost

(vi) Services = 5% of building cost

(vii) Contingencies = 2½%

(viii) Supervision charges = 8%. 10

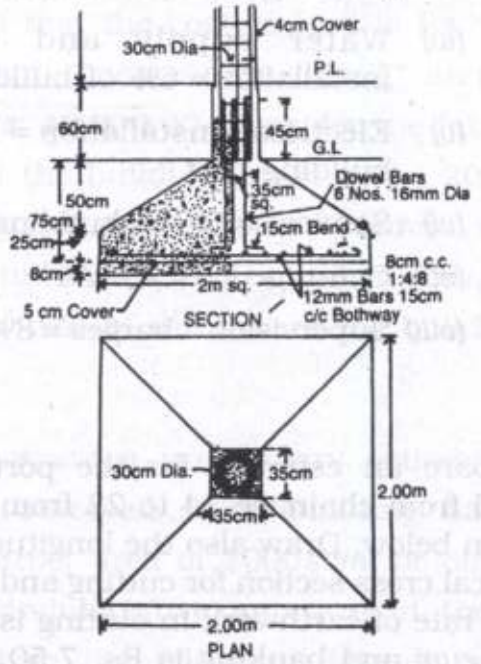
3. Prepare an estimate for the portion of a road from chainage 14 to 22 from the data given below. Draw also the longitudinal and typical cross section for cutting and banking. The rate of earthwork in cutting is Rs. 8.50 per *cum* and banking is Rs. 7.50 per *cum*. The formation width of the proposed road is 12*m*, side slopes 1½ : 1 in cutting and 2 : 1 in banking

Chainage (30m) :	14	15	16	17	18	19	20	21	22
RL of ground :	108·6	109·25	109·4	108·85	108·50	107·25	106·80	107·15	107·20

RL of formation : 108·6

The road formation is proposed at uniform falling gradient 1 in 200. Length of 1 chain = 30*m*. 20

4. Prepare a detailed estimate of a R.C.C. foundation footing from the given drawing :



Rates :

(i) Earthwork in excavation in foundation @ Rs. 350 per % *cum.*

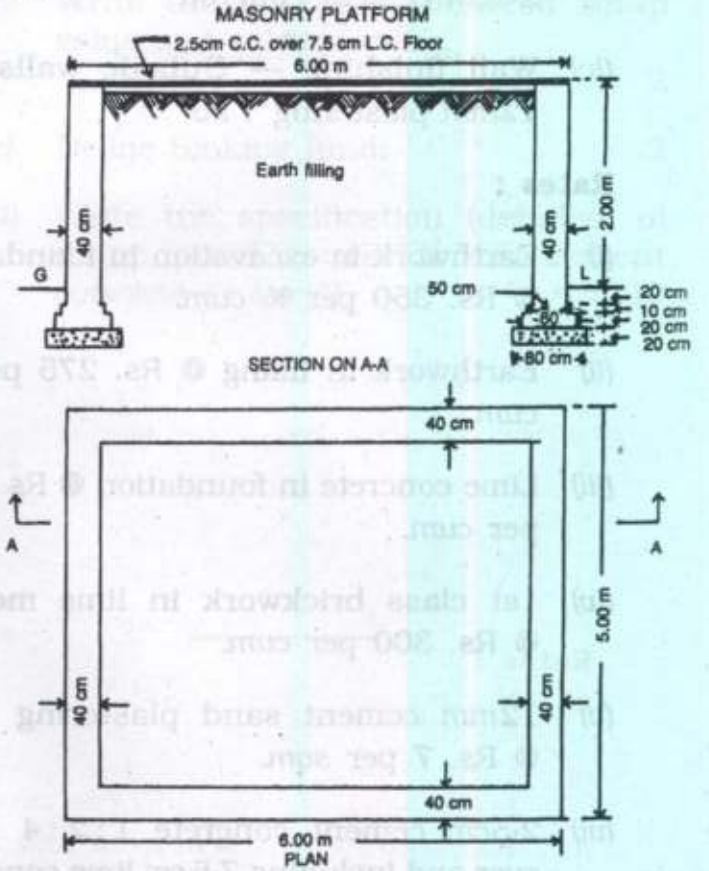
(ii) Cement concrete 1 : 4 : 8 in base with brick ballast @ Rs. 300 per *cum.*

(iii) R.C.C. work 1 : 2 : 4 in footing excluding steel and its bending but including centering and shuttering and binding steel @ Rs. 625 per *cum.*

(iv) Steel reinforcement bars including bending @ Rs. 515 per '*q*'.

Prepare schedule of bars of also. 20

5. Estimate the cost of a Masonry Platform $6m \times 5m$ from given drawing and specification



General Specification :

(i) Foundation – Lime concrete

(ii) Masonry – 1st class brickwork in lime mortar

(iii) Flooring — 2·5*cm* cement concrete over 7·5*cm* lime concrete, over wall only 2·5*cm* cement concrete

(iv) Wall finishing — Outside walls are 12*mm* plastering 1 : 6.

Rates :

(i) Earthwork in excavation in foundation @ Rs. 350 per % *cum.*

(ii) Earthwork in filling @ Rs. 275 per % *cum.*

(iii) Lime concrete in foundation @ Rs. 220 per *cum.*

(iv) 1st class brickwork in lime mortar @ Rs. 300 per *cum.*

(v) 12*mm* cement sand plastering 1 : 6 @ Rs. 7 per *sqm.*

(vi) 2·5*cm* cement concrete 1 : 2 : 4 floor over and including 7·5*cm* lime concrete @ Rs. 18.65 per *sqm.*

(vii) 2·5*cm* cement concrete 1 : 2 : 4 floor @ Rs. 18 per *sqm.* 20

6. (a) Define Valuation. What are the purpose of valuation ? 6

(b) Write the difference between scrap value and salvage value. 2

(c) Define Sinking fund. 2

(d) Write the specification (detailed) of damp proof course 2·5*cm* cement concrete 1 : 1½ : 3. 10
