53 (CE 701) ESCS

2018

ESTIMATION AND COSTING

Full Marks : 100

Time : Three hours

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

*Answer **any five** questions.*

1. *(a)* Prepare an approximate estimate of building project with total plinth area of all building is 800*sqm* and from the following data — 10

   (i) Plinth area rate Rs. 4500 per *sqm*

   (ii) Cost of water supply @ 7·5% of cost of building

   (iii) Cost of sanitary and electrical installations each @ 7·5% of cost of building

   (iv) Cost of architectural feature @ 1% of building cost

(v) Cost of roads and lawns @ 5% of building cost

(vi) Cost of PS and contingencies @ 4% of building cost. Determine the total cost of building project.

(b) Define valuation. What are the purpose of valuation ? 2+3=5

(c) Write the definitions — 2½×2=5

(i) Scrap value

(ii) Salvage value.

2. (a) Analyse the rate of RCC work of 2·5*m* cement concrete floor 1:1·5:3, unit 1*sqm*, take 100*sqm*.

(b) Analyse the rate of cement concrete of 1:5:10 in foundation with brick ballast 40*mm* thick gauge - unit 1*cum*, take - 10*cum*.

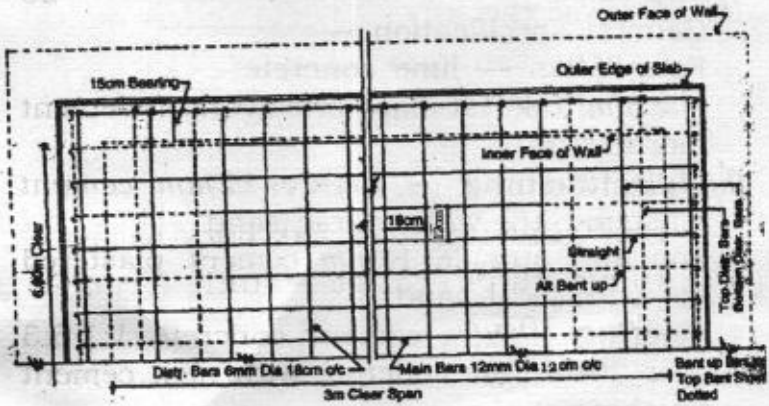
10×2=20

3. Prepare a detailed estimate of a R.C.C. roof slab of 3*m* clear span and 6*m* long from the given drawing R.C.C. work including centering and shuttering and steel reinforcement in detail shall be taken separately. Also prepare a schedule of bars. 20

Rate :

(i) R.C.C. work 1:2:4 excluding steel and its bending but including centering and shuttering and bending of steel @ Rs. 675 per *cum.*

(ii) Steel bars including bending in R.C.C. work @ Rs 515 per quintal.

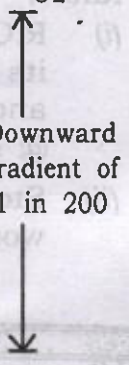


PART PLAN SHOWING ARRANGEMENT OF REINFOREMENT BARS

4. Estimate the cost of earthwork for a portion of road for 400*m* length from the following data :

Formation width of road is 10*m*, side slopes are 2:1 in banking, 1·5:1 in cutting. 20

Station	Distance	RL of Ground	RL of formation
25	1000	51	52
26	1040	50·9	
27	1080	50·5	
28	1120	50·8	
29	1160	50·6	Downward
30	1200	50·7	gradient of
31	1240	51·2	1 in 200
32	1280	51·4	
33	1320	51·3	
34	1360	51	
35	1400	50·6	



5. Prepare a detailed estimate of a masonary water tank from given drawing, specification and rates — 20

General specification —

Foundation — lime concrete

Masonary — 1st class brickwork in cement mortar 1:6

Wall finishing — Inside 12*mm cement* plastered 1:2 with coarse sand

Top and outside 12*mm* cement plastered 1:4 with local sand

Flooring — 5*cm* cement concrete 1:1·5:3 over 20*cm* lime concrete with neat cement finishing —

Rates —

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

(ii) Lime concrete in foundation and floor @ Rs. 220 per *cum.*

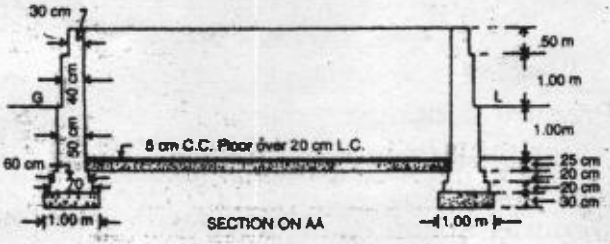
(iii) Ist class brickwork in 1:6 cement mortar @ Rs.320 per *cum*

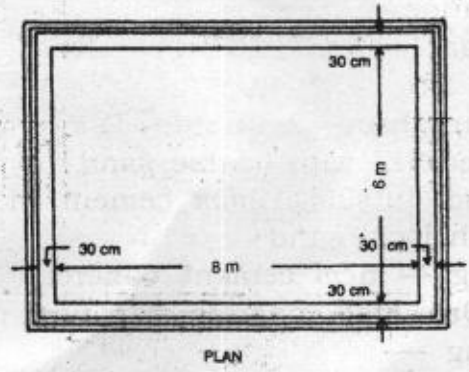
(iv) 12*mm* cement plaster 1:2 with coarse sand @ Rs.8·50 per *sqm.*

(v) 12*mm* cement plaster 1:4 with local sand @ Rs. 8·30 per *sqm.*

(vi) 5 *cm* cement concrete 1 : 1·5 : 3 floor @ Rs. 55 per *sqm.*

MASONRY TANK





PLAN

6. Write detailed specification : ***(any two)*** 10×2=20

(i) Damp proof course 2·5*cm* cement concrete 1:1·5:3

(ii) 1st class brickwork

(iii) Lime concrete in foundation.
