2023
(DECEMBER)

ESTIMATION AND COSTING

Full Marks: 100
Pass Marks: 30
Time: Three hours

The figures in the margin indicate full marks for the questions.
*Answer **any five** questions.*

1)

(a) An old building has been purchased by a person at a cost of Rs. 30000 excluding the cost of the 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**

(b) Analyse the rate of I class brickwork in superstructure with 20X10X10 cum brick with 1:6 cement sand mortar, unit 1 cum, take 10 cum. **8**

(c) Define valuation. What are the purposes of valuation? **2+5=7**

2) Prepare a detailed estimate for the following items of a two roomed building from the given drawing (Rates are given in bracket) **20**

(a) Earthwork in excavation in foundation. (350 per %cum)

(b) Lime concrete in foundation. (220 per cum)

(c) 1st class brickwork in cement mortar 1:6 in foundation and plinth. (300 per cum)

(d) 2.5cm cement concrete damp proof course. (20 per sqm)

(e) 1st class brickwork in lime mortar in superstructure. (320 per cum)

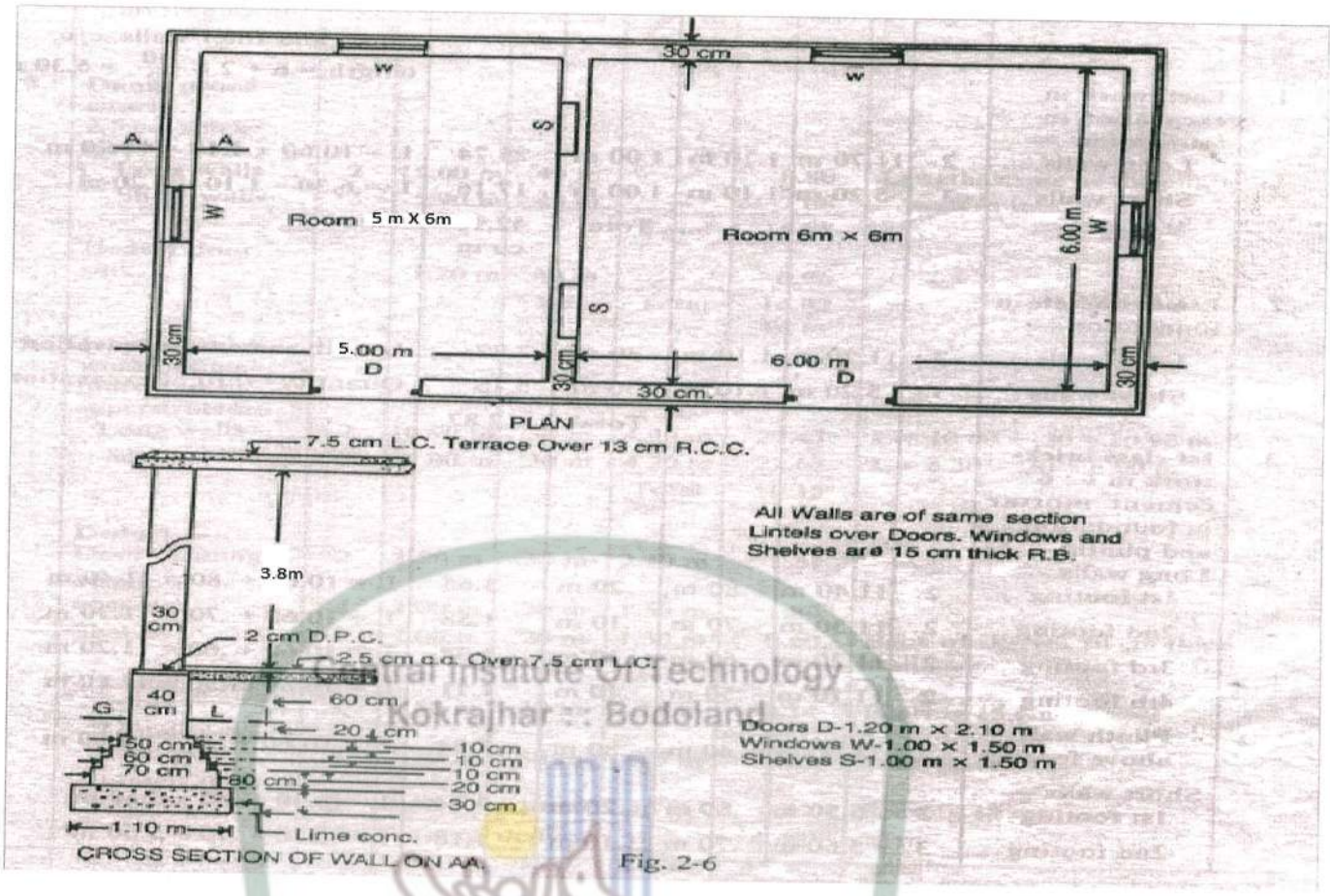
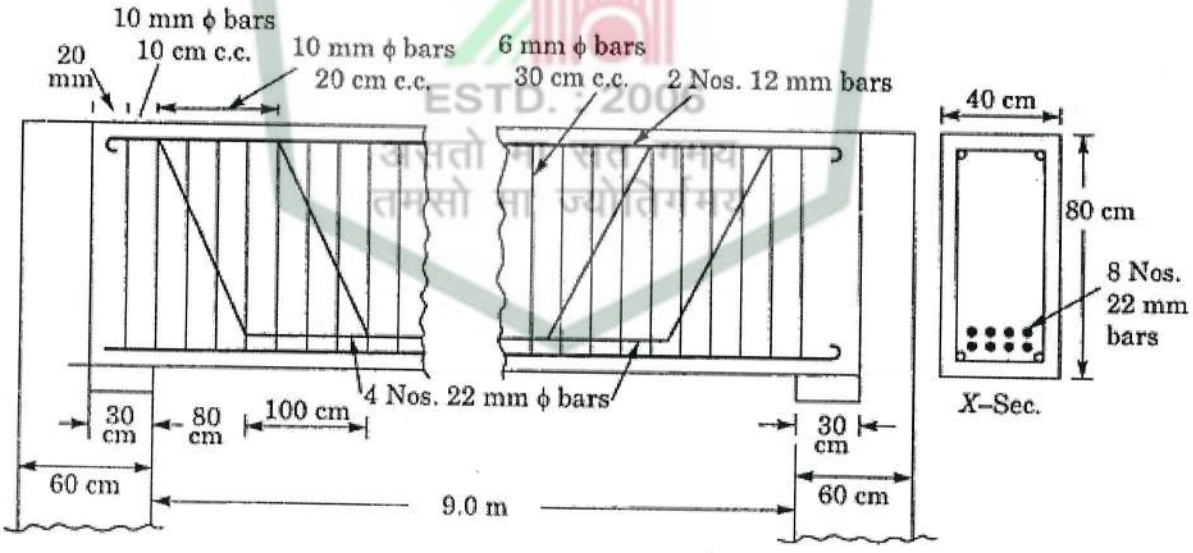


Fig. 2-6

(3) Figure below gives details of a R.C.C. beam 9 metre clear span and 80 cm X 40 cm section. Estimate the R.C.C. work for the beam. Steel in detail and R.C.C. work shall be calculated separately. Also prepare a schedule of bars. **20**



Rates:

i) R.C.C. work 1:2:4 excluding steel and its bending but including centering and shuttering and binding of steel @Rs. 675.00 per cum

ii) Steel bars including bending (mild steel) in R.C.C. work @ 515.00 per quintal.

(4) Prepare an estimate for the portion of a road from chainage 14 to 22 from the data given below. Draw 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. 7.00 per cum. The formation width of the proposed road is 12 m, side slopes 1.5:1 in cutting and 2:1 in banking. **20**

Chainage (30m):	14	15	16	17	18	19	20	21	22
R.L. of G.L.:	108.6	109.25	109.4	108.85	108.5	107.25	106.8	107.15	107.2

The road formation is proposed at uniform falling gradient 1 in 200 passing through G.L. at chainage14. Length of one chain = 30 m.

(5)

(a) Analyse the rate of R.C.C. work in column 1:1.5:3 and steel @ 2% of concrete work, unit 1 cum. Take -10 cum. **10**

(b) A concrete mixture was purchased at Rs. 8000.00. Assuming salvage value to be Rs. 1000.00 after 5 years, calculate depreciation for each year adopting (i) straight line method and (ii) constant percentage method considering 6% interest. **10**

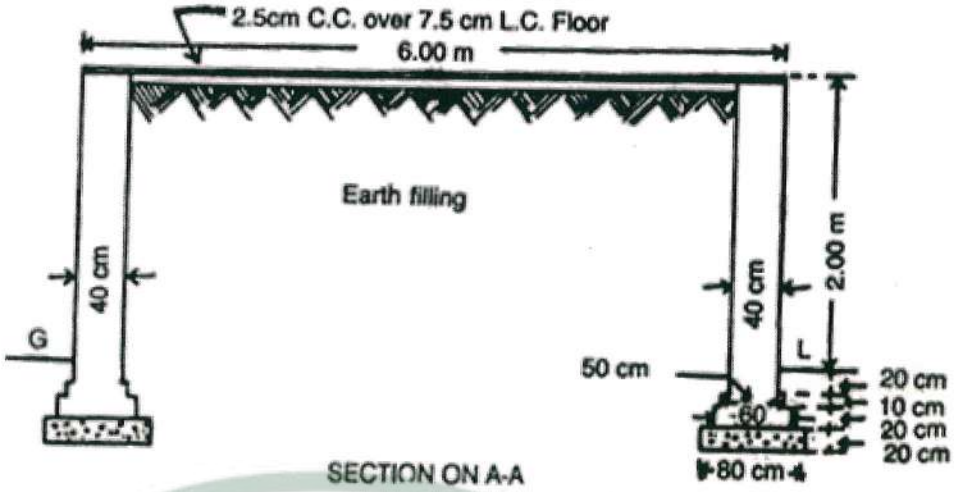
(6) Prepare the estimate of the masonry platform 6mX5m from the given drawing and specification **20**

Specifications

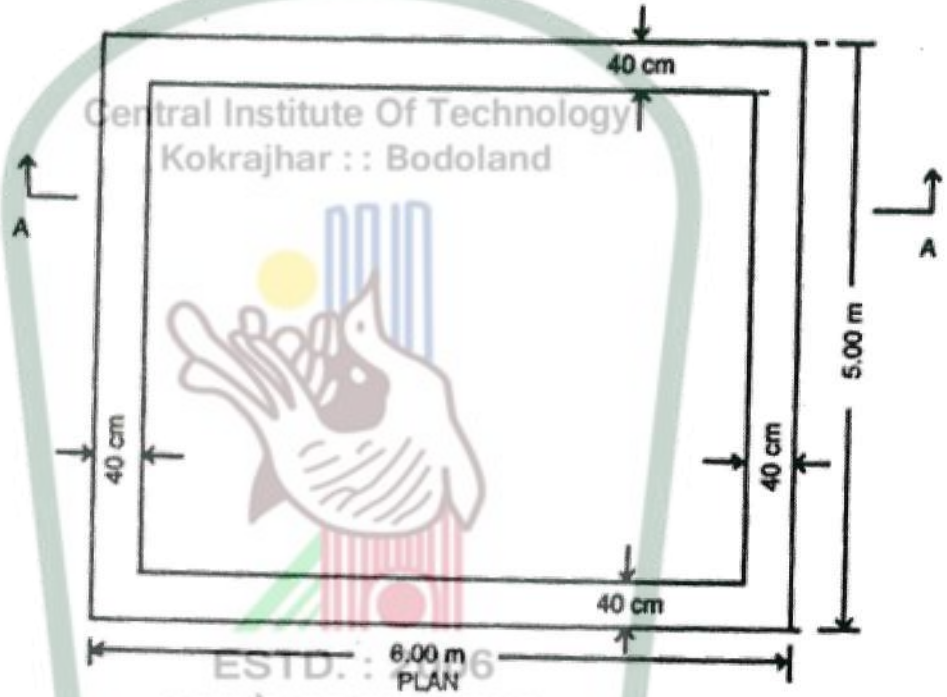
Foundation – Lime concrete.
Masonry- 1st class brickwork in cement mortar 1:6
Wall finishing- outside walls are 12 mm cement plastered 1:6
Flooring- 2.5 cm cement concrete over 7.5 cm lime concrete, over wall only 2.5 cm cement concrete with neat cement finishing.
Rates:

i) Earthwork in excavation @ Rs.350.00 per % cum
ii) Earthwork in filling @ Rs. 275.00 per % cum
iii) Lime concrete in foundation and floor @ Rs.220.00 per cum
iv) 1st class brickwork in 1:6 cement mortar @ Rs. 320.00 per cum
v) 12 mm cement plastering 1:6 with coarse sand @ Rs. 7.00 per sqm
vi) 2.5 cm cement concrete 1:2:4 floor over and including 7.5 cm lime concrete @ Rs.1 8.65 per sqm
vii) 2.5 cm cement concrete 1:2:4 floor @ Rs. 18.00 per sqm.

MASONRY PLATFORM



SECTION ON A-A



PLAN