2024
(JUNE)

ESTIMATION AND COSTING
Full Marks: 100
Pass Marks: 30
Time: Three hours
The figures in the margin indicate full marks for the questions.
*Answer **all** questions.*

1) 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.

2)   **10X2=20**

   a) Analyse the rate of reinforced cement concrete for beam @ 1.5% steel at 1:1.5:3, unit 1 cum, take 10 cum.

   b) Analyse the rate of 2.5 cm thick cement concrete 1:1.5:3 damp proof course- unit 1 sqm, take 100 sqm.

3) Prepare the detailed estimate of the masonry water tank of 6.5m X 5.5m from the given drawing and specification **20**

Specifications

Foundation – Lime concrete.

Masonry- 1st class brickwork in cement mortar 1:6.

Wall finishing- Inside 12 mm cement plastered 1:2 with coarse sand
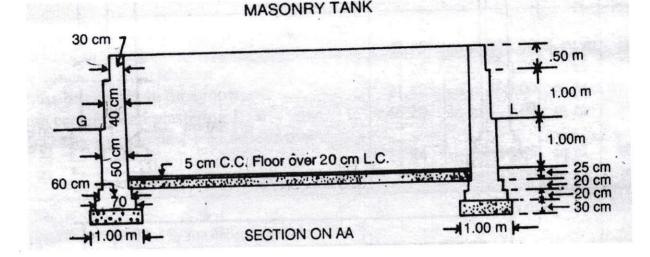
               Top and outside 12 mm cement plastered 1:4 with local sand

Flooring- 5 cm cement concrete 1:1.5: 3 over 20 cm lime concrete with neat cement finishing.

Rates

a) Earthwork in excavation @ Rs. 350 per % cum
b) Lime concrete in foundation and floor @ Rs 220 per cum
c) 1st class brickwork in 1:6 cement mortar@ Rs 320 per cum
d) 12 mm cement plaster 1:2 with coarse sand @ Rs 8.50 per sqm
e) 12 mm cement plaster 1:2 with local sand @ Rs 8.30 per sqm
f) 5 cm cement concrete 1:1.5:3 floor @ Rs 55 per sqm

MASONRY TANK

SECTION ON AA

4)

a) The present value of a machine is Rs. 45000. Workout the depreciation cost at the end of every five year interval by constant percentage method, if the salvage value is 10% of machine value. Assume life of machine is 20 years.
10

b) Prepare an approximate estimate of building with total plinth area of all building is 800 sqm and from following data

c) (i) Plinth area rate Rs 4400 per sqm

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

e) (iii) Cost of sanitary and electrical installation @ 7.5% of cost of building

f) (iv) Cost of architectural features @ 1.5% of Cost of building

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

h) (v) Cost of PS and contingencies @ 4% of Cost of building

i) Determine total cost of building project.
10

5) Prepare estimate of a RCC roof slab of 5m clear span and 6 m long from given drawing. Also show the schedule of bars. **20**

R.C.C. ROOF SLAB

CROSS SECTION