Total number of printed pages: 1

## 2024 (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 all five questions.

1)

(a) Explain the different methods of earthwork with figures.

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(b) Analyse the rate of I class brickwork in superstructure with 20X10X10 cum brick with 1:4 cement sand mortar, unit 1 cum, take 10 cum. 8

(c) Define valuation. What are the purposes of valuation?

2+5=7

2) Prepare the estimate of the masonry water tank 4mX5m from the given drawing and specification

<u>Specifications:</u> Foundation – Lime concrete. Masonry- 1<sup>st</sup> 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 cements concrete 1:1.5: 3 over 20 cm lime concrete with neat cement finishing.

<u>Rates</u>: Earthwork in excavation @ Rs.350 per % cum, Lime concrete in foundation and floor @ Rs 220per cum, 1<sup>st</sup> class brickwork in 1:6 cement mortar @ Rs 320 per cum, 12mm cement plaster 1:2 with coarse sand @ Rs 8.50 per sqm, 12mm cement plaster 1:4 with local sand @ Rs 8 per sqm, 5mm cement concrete 1:1.5:3 floor @ Rs 55 per sqm



(3) 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



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** 

17 19 20 Chainage (30m): 14 15 16 18 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. तमसो मा ज्योतिर्गमय

(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) 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