CEM44 Estimating and Costing - I

547

REG. NO

OCTOBER 2021

Time: Three hours Maximum Marks: 75

Note:
1. Answer ALL the questions in PART-A (1 mark each)
2. Answer any ONE question from each unit in PART-B (3 marks each)
3. Answer any ONE question from each unit in PART-C (10 marks each)
4. The question paper contains THREE Pages and TWO sketches.

PART-A (1x10=10)

1. Define estimate.
2. Define Plinth area method.
3. State the painting co-efficient for (i) Panelled door (ii) Glazed window.
4. What is one level section?
5. Define prismoidal rule.
6. Write short notes on schedule of rate.
7. What do you mean by framed structure?
8. How you calculate the length of lintel?
9. What is group system?
10. What is billing?

PART-B (3x5=15)

UNIT-I

11. List any five requirements of good quantity surveyor.
12. Calculate the approximate cost of the building of plinth area $80m^2$ and the rate may be assumed as Rs.$850/m^2$ for civil works only?

UNIT-II

13. How volume is calculated by using average area rule?
14. What is mid ordinate rule?

UNIT-III

15. What do you meant by analysis of rates?
16. What are the steps included in preparation of data?

UNIT-IV

17. Why rounding of quantities are necessary?
18. Write brief specifications for any six items of works to be executed in sequence.

UNIT-V

19. State the various columns in dimension paper.
20. Explain about casting and resucing the abstract.

PART-C (10x5=50)

UNIT-I

21. Write short notes on (a) Revised estimate (b) Supplementary estimate (c) Sub estimate.

22. The actual expenditure incurred in the construction of a residential building having plinth area $72m^2$ and a height 3.6m is Rs.3,50,000. It is proposed to construct a similar building in the same location with a plinth area of $93m^2$ and height of building is 3.2m. Estimate the approximate cost of the proposed building if cost in construction material and labour vary by 10%.

UNIT-II

23. The offsets were taken at 20m intervals from a chain line of a land survey to a edge as 5m, 3.8m, 4.2m, 5.6m, 6.4m, 7.5m,8.1m, 6.9m and 5.2m. Calculate the area by (a) End area rule (b) Average area rule (c) Trapezoidal rule (d) Prismoidal rule.

24. (i) A road embankment is 11m wide at the formation level. The center line of the embankment is 3m above the ground level surface. If the ground slope is 1 in 22 at right angles to the center line and side slopes is 2:1. Calculate the area of cross section.

(ii) The heights of an embankment of formation width 10m with side slopes 2:1 are found to be 3m, 4m and 5m at 0m, 30m and 60m changes respectively. Find the volume of the embankment is 60m length by trapezoidal rule and prismoidal rule.

UNIT-III

25. (i) Pointing with lime mortar 1:1.5 flush pointing brick work – $10m^2$

Plastering with lime mortar 1:2 one coat 12mm thick – $10m^2$

Lime mortar (1:2)	0.14 m^3
Mason I class	1.1 nos
Mazdoor I grade	0.5nos.
Mazdoor II class	1.1 nos.

Plastering with cement mortar 1:3 20mm thick – $10m^2$

Cement mortar (1:3)	0.22m^3
Mason I class	2.2 nos
Mazdoor I class	0.5nos.
Mazdoor II class	3.2 nos.

Pointing with lime mortar 1:1.5 flush pointing brick work – $10m^2$

Lime mortar (1:1.5)	0.06 m^3
Mason II class	1.6 nos
Mazdoor I grade	0.5nos.
Mazdoor II class	1.1 nos.

Cost of materials at site

Lime Rs.750/m^3
Sand Rs.200/m^3
Cement Rs.6000/tonne

Cost of labors

Mason I class	Rs.180.00/each/day
Mason II class	Rs.160.00/each/day
Mazdoor I grade	Rs.180.00/each/day
Mazdoor II class	Rs.99.00/each/day

(ii) Prepare data for brick work in cm 1:5 using grade 7.5 bricks for $1m^3$

MATERIALS AND LABOUR REQUIRED:

Brickwork in cm 1:5 using grade 7.5 bricks for $10m^3$

Bricks (190 x 90 x 90mm)	….. 5000 nos.
Cm 1:5	…. 2.2 m^3
Mason I class	….3.5 Nos.
Mason II class	….10.6 nos.
Mazdoor grade I	….7.1 nos.
Mazdoor grade II	….21.2 nos.