

KATHMANDU UNIVERSITY
End Semester Examination [C]
December, 2024

Marks Scored:

Level : B.ARCH
Year : III

Course : CIEG 342
Semester : II

Exam Roll No. :

Time: 30 mins.

F. M. : 10

Registration No.:

Date :

22 DEC 2024

SECTION "A"

[20 Q. × 0.5 = 10 marks]

Choose and encircle in the most appropriate option from each set of choices

- The unit of measurement of wood works in door and window frame is _____.
a. m b. m² c. m³ d. Lump-sum
- In the detailed estimate, the areas are worked out to the nearest _____.
a. 0.001 m² b. 0.01 m² c. 0.005 m² d. 0.05 m²
- No deduction is made in the masonry for the opening if the area of the opening does not exceed _____.
a. 0.5 m² b. 0.25 m² c. 0.15 m² d. 0.10 m²
- The unit of measurement of steel works in trusses is _____.
a. quintal b. m c. m³ d. m²
- The net annual letting out values of a property, which is obtained after deducting the amount of yearly repairs from the gross income is known as _____.
a. market value b. book value c. sinking value d. rateable value.
- Brick walls are measured in square meter if the thickness of the wall is _____.
a. 10 cm b. 15 cm c. 20 cm d. 25 cm
- Pick up the item of work not included in the plinth area estimate.
a. Wall thickness b. Room area c. Courtyard area d. Verandah area
- The unit of measurement of dressed stonework as in chajjas, jallies, shelves etc. is _____.
a. m² b. m c. m³ d. lump-sum
- In long and short wall method of estimation, the length of long wall is the center to center distance between wall and _____.
a. breadth of wall
b. half of the breadth of wall on each side
c. one fourth of the breadth of wall on each side
d. one sixth of the breadth of wall on each side
- The gradual accumulation of amount by way of annual periodic deposits which is meant for the replacement of the structure at end of its useful life period is known as _____.
a. annuity depreciation b. depreciation
c. sinking fund d. solatium

11. If 'i' is the rate of interest expressed in decimal and 'n' is the number of years, then the coefficient of annual sinking fund (I_c) is _____.
- a. $I_c = \frac{(1+i)^n - 1}{(1+i)^n}$ b. $I_c = \frac{i}{(1+i)^{n-1}}$ c. $I_c = \frac{i}{(1+i)^{n+1}}$ d. $I_c = \frac{i}{(1+i)^{n-1}}$
12. Which of the following is the most correct estimate?
- a. Plinth area estimate b. Cube rate estimate
c. Building cost index estimate d. Detailed estimate
13. The plan of a building is in the form of rectangle with centerline dimension of outer walls as 9.7 m x 14.7 m. The thickness of wall in superstructure is 0.30m. Then, its plinth area is _____.
- a. 150 m² b. 145 m² c. 160 m² d. 135.36 m²
14. When not specified, the volume of steel in R.C.C work is taken as _____.
- a. 1% to 1.6% of R.C.C volume b. 2% to 4% of R.C.C volume
c. 0.6% to 1% of R.C.C volume d. 4% to 6% of R.C.C volume
15. Plinth area estimate is approximate estimate mostly used for the estimation of _____.
- a. irrigation channel b. building c. road d. bridge
16. The value of the property that can be obtained at any particular time from the open market if the property is put for sale is known as _____.
- a. market value b. book value c. current value. d. obsolescence.
17. Work charged establishment cost is taken as _____.
- a. 0 to 0.5% of estimated cost. b. 0.5 to 1% of estimated cost.
c. 1 to 1.5% of estimated cost. d. 1.5 to 2% of estimated cost.
18. Scrap value of any property is generally _____.
- a. 8% of total cost of construction b. 10% of total cost of construction
c. 15% of total cost of construction d. 20% of total cost of construction
19. The capitalized value of a property fetching a net annual rent of Rs. 1500 and the highest rate of interest prevailing being 6% will be _____.
- a. Rs. 15000 b. Rs. 20000 c. Rs. 25000 d. Rs. 10000
20. The document in which the quality of work or material is mentioned is called _____.
- a. specification b. detailed estimate c. bill of quantity d. valuation

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SECTION "B"
[4Q. × 4 = 16 marks]

Attempt **ANY FOUR** questions. Assume suitable data wherever necessary.

1. Explain that estimated cost is never the actual cost. Describe the various data which are required for preparing detailed estimate. [2+2]
2. Explain with suitable example under which circumstances the following estimates are prepared. [4 × 1=4]
 - a. Revised estimate.
 - b. Supplementary estimate.
 - c. Annual repair estimate.
 - d. Complete estimate.
3. Explain briefly essential requirement of specification. Write down the general specification for brick work in the foundation and plinth. [2+2]
4. Describe briefly factors affecting rate analysis. Calculate the quantities of material required for 115 m² of 75 mm thick PCC (1:2:4) in floor. [2+2]
5. Prepare a preliminary estimate of a 4 storied office building having carpet area of 2000 m² for obtaining the administrative approval of the government given the following data. It may be assumed that 30% built up area will take up by corridors, verandah, toilets, staircase etc. and 10% of the built up area will be occupied by wall. [4]
 - a. Plinth area rate = Rs. 1000 per m²
 - b. Extra for special architectural treatment = 1.5% of building cost.
 - c. Extra for electric installation = 8% of building cost.
 - d. Contingencies = 5% of total cost.
 - e. Work charged establishment = 2.5% of total cost.
 - f. Supervision charges = 10% of total cost.

SECTION "C"
[4Q. × 6 = 24 marks]

Attempt **ALL** questions. Assume suitable data wherever necessary.

6. Estimate the quantity of earthwork for a portion of a road for 400 meter length from the following data. Formation width of the road is 10 meter, side slopes are 2:1 in banking and 1.5:1 in cutting. [6]

Station	25	26	27	28	29	30	31	32	33	34	35
Distance (m)	1000	1040	1080	1120	1160	1200	1240	1280	1320	1360	1400
R.L. of ground (m)	51	50.8	50.5	50.7	50.4	50.7	51	50.9	50.8	50.5	50
R.L. of formation (m)	51.5	Downward gradient of 1 in 200									

P.T.O.

7. Write a short note on (*ANY THREE*) [3 × 2 = 6]
- a. Importance of computer application in quantity estimation.
 - b. Factors affecting of value of the property.
 - c. Bill of quantities.
 - d. Contingencies
8. A RCC framed structure building having a cubic content of 1400 cubic meter was constructed 15 years back on free tenure on land measuring 1100 meter square. The building fetches a rent about Rs 25000 per month. What amount will you recommend for advance load to owner against mortgage if the rate of land is Rs 500 per meter square? Expenses are [6]
- a. Insurance premium: Rs 900 per month.
 - b. Management and collection tax: 8% of gross rent.
 - c. Municipal tax: 30% of gross rent.
 - d. Repairs: 5% of gross rent.
- Assume future life is 60 years and rate of interest is 8% and redemption of capital at 5%.
9. Calculate the quantities of following items of works from following the drawing of building (**Figure 1**) attached herewith. [2+2+2]
- a. Lime concrete in foundation.
 - b. First class brick work (1:6) in foundation and plinth
 - c. First class brick in superstructure.

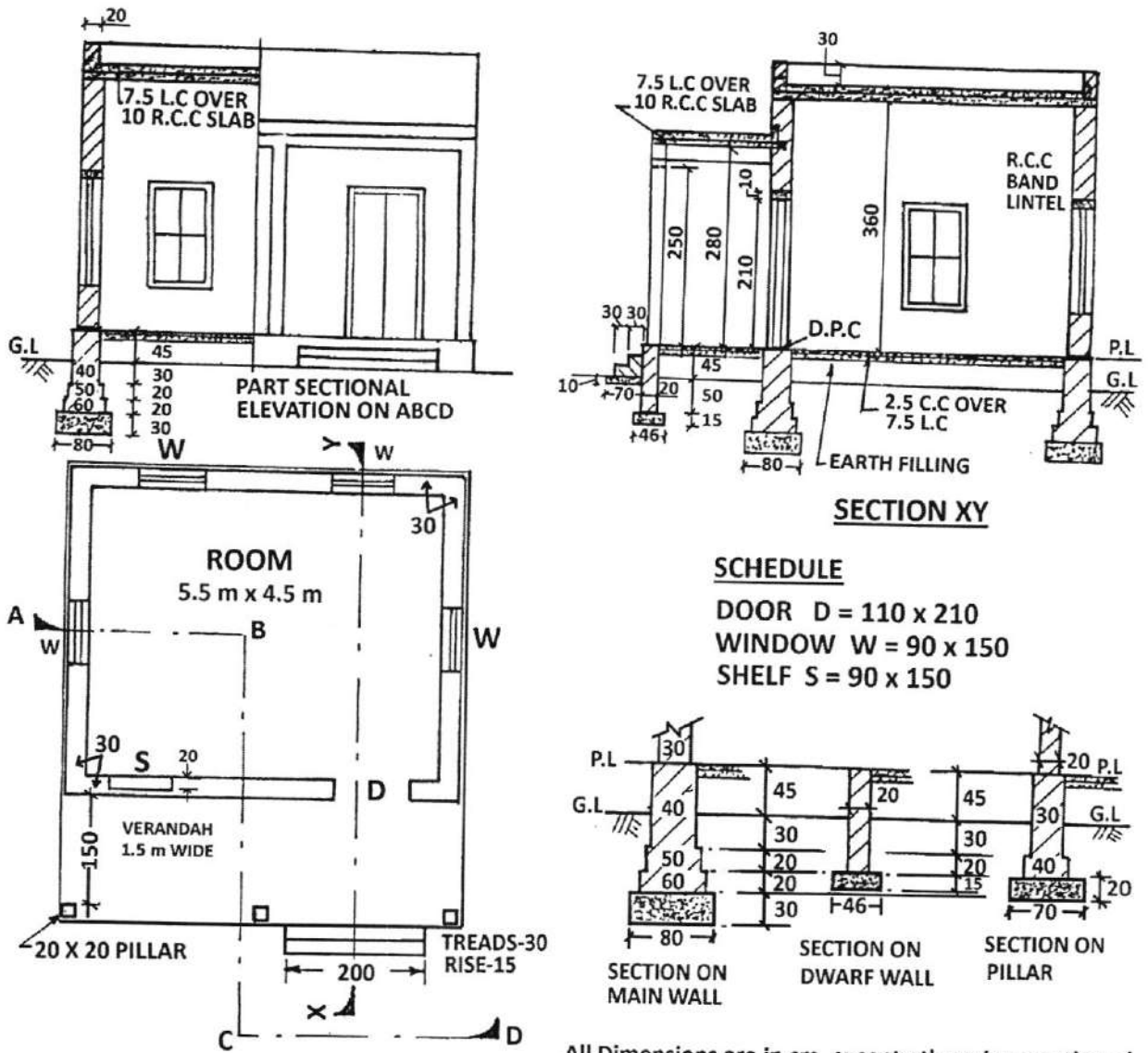


Figure 1

All Dimensions are in cm, except otherwise mentioned

