

KATHMANDU UNIVERSITY
End Semester Examination
August/September, 2017

Mark Scored:

Level : B. Tech.
Year : III

Course : ENVE 311
Semester : II

Exam Roll No. :

Time: 30 min

F. M. : 20

Registration No.:

Date :

SECTION "A"

[20 Q × 1 = 20 marks]

Tick mark the correct answer.

1. The order of booking dimensions is
a. Length, breadth, height, quantity b. Breadth, length, height, quantity
c. Height, breadth, length, quantity d. Quantity, length, breadth, height
2. No. of bags of cement in M 20 grade of 1 cu.m concrete is
a. 4 bags b. 6 bags c. 8 bags d. 10 bags
3. In what unit is skirting work measured?
a. cu.m b. sq.m c. per m d. per no.
4. Brickwork is measured in Sq. m in case of
a. Honey comb wall brick b. Brick flat soling
c. Half brick wall partition d. All of these
5. No. of bricks of size 230 mm x 110 mm x 55 mm in 1 cu.m volume is
a. 550 b. 690 c. 720 d. 750
6. Item of steel work measured in sq. m is
a. steel in compression members b. steel in slab
c. Ventilators and glazing d. structural steels
7. What annual sinking fund at 4.5% must be invested to produce Rs. 1/- at the end of 20 years?
a. 0.32 b. 0.032 c. 3.2 d. 0.45
8. Annual payment for repayment of the capital amount is
a. Sinking fund b. Capitalized value c. Prime cost d. Annuity
9. The most reliable estimate is
a. Detailed estimate b. Preliminary estimate
c. Cube rate estimate d. Plinth area estimate
10. The damp proof course (D.P.C.) is measured in
a. cu.m b. sq.m c. per m d. per no.
11. Normal height of residential building is
a. 10 cm b. 10 m c. 10 feet d. 12 feet
12. The main factor to be considered while preparing a detailed estimate is
a. Quantity of the materials b. Availability of materials
c. Transportation of materials d. All of the above

13. For 12 mm thick cement plastering 1 : 6 on 100 sq.m new brick work, the quantity of cement required is
a. 0.200 m^3 b. 0.2474 m^3 c. 0.2951 m^3 d. 0.1714 m^3
14. The item of the brick structure measured in sq.m is
a. Reinforced brick work b. Broken glass coping
c. Brick edging d. Brick work in arches
15. Pick up the correct statement from the following:
a. The estimated value of the work excluding the amount for contingencies, work charged establishment, tool and plants, is called book value
b. The actual expenditure involved to complete a work including incidental, establishment and travelling charges, is called actual cost
c. The formal acceptance by the administrative department for incurring an expenditure on the work, is called technical sanction
d. The order of a competent authority sanctioning a properly detailed estimate of the cost of a work of construction or repair is called administrative approval
16. In long and short wall method of estimation, the length of long wall is the centre to centre distance between the walls and
a. breadth of the wall b. half breadth of wall on each side
c. one fourth breadth of wall on each side d. half breadth of wall on one side
17. The plinth area of a building does NOT include
a. Area of the walls at the floor level
b. Internal shaft for sanitary installations up to 2 sq m. in area
c. Lift and wall including landing
d. Area of Cantilever porch
18. The area is measured correct to the nearest
a. 0.01 sqm b. 0.02 sqm c. 0.03 sqm d. 0.04 sqm
19. The measurement is NOT made in square metres in case of
a. D.P.C. b. Form works c. Concrete Jaffries d. R.C. Chhajja
20. The concrete work for the following part of the building of specified thickness is measured in square metres
a. D.P.C b. beam c. foundation d. column

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SECTION "B"

Attempt *ALL* questions.

1. Define the terms estimation and valuation. Why do you study the subject of estimating and valuation? Explain about center line method & long wall and short wall methods of measurements. [1+2+2]
2. Justify the statement: "An estimate can never be actual cost". Define the terms administrative approval and technical sanction. [3+2]
3. Explain about contingency and overhead cost. In which condition is revised estimate used? List out the data required for preparing detailed estimate. [2+1.5
+1.5]
4. How do you fix up the rate of an item? What are the different factors which affect the rate of an item? Explain with examples. [2+3]
5. Write short notes on (*ANY FOUR*): [4 × 2.5]
 - a. Depreciation
 - b. Capitalized value
 - c. Principles of measurements
 - d. Revised estimate
 - e. Scrap value & salvage value
6. A property has been purchased by Mr. "A" at a cost of Rs. 12,00,000.00 excluding cost of land. Find the amount of sinking fund annually deposited at the rate of 6% compound interest. Assume future life of the building as 45 years. The life of building is 100 years and salvage value of building is 10% of the cost of purchase. [5]
7. Prepare preliminary estimate of an office building having a carpet area of 2000 sqm and plinth area rate is Rs 1000 per sqm. 30% of built up area will be taken up by the corridors, staircase etc, 10% of built up area will be occupied by the walls. [5]
 - Architectural cost is 1% of building cost
 - Water supply and sanitary installation and electricity is 12% of building cost
 - Supervision charges is 7%
 - Contingencies 5%
8. Prepare rate analysis for concrete of 1:1.5:3 ratio in RC slab with 1% of reinforcement. [5]

Price of cement @ 800 per bag, sand @ Rs 2000 per m³, aggregate @ 1300 per m³, reinforcement @ 78,000 per metric tonne, skilled labor @ 900 per no., unskilled labor @ 650 per no.

9. Prepare detailed estimate for the given figure 1.
 Foundation concrete shall be of 1:3:6 within stone ballast and coarse sand. Masonry shall be of 1st class brickwork in 1:4 cement mortar. Slab shall be of R.C.C 1:2:4 with reinforcement as per drawing. Road shall be provided with 10 cm thick wearing coat of 1:2:4 cement concrete. All dimensions are in mm.

[10]

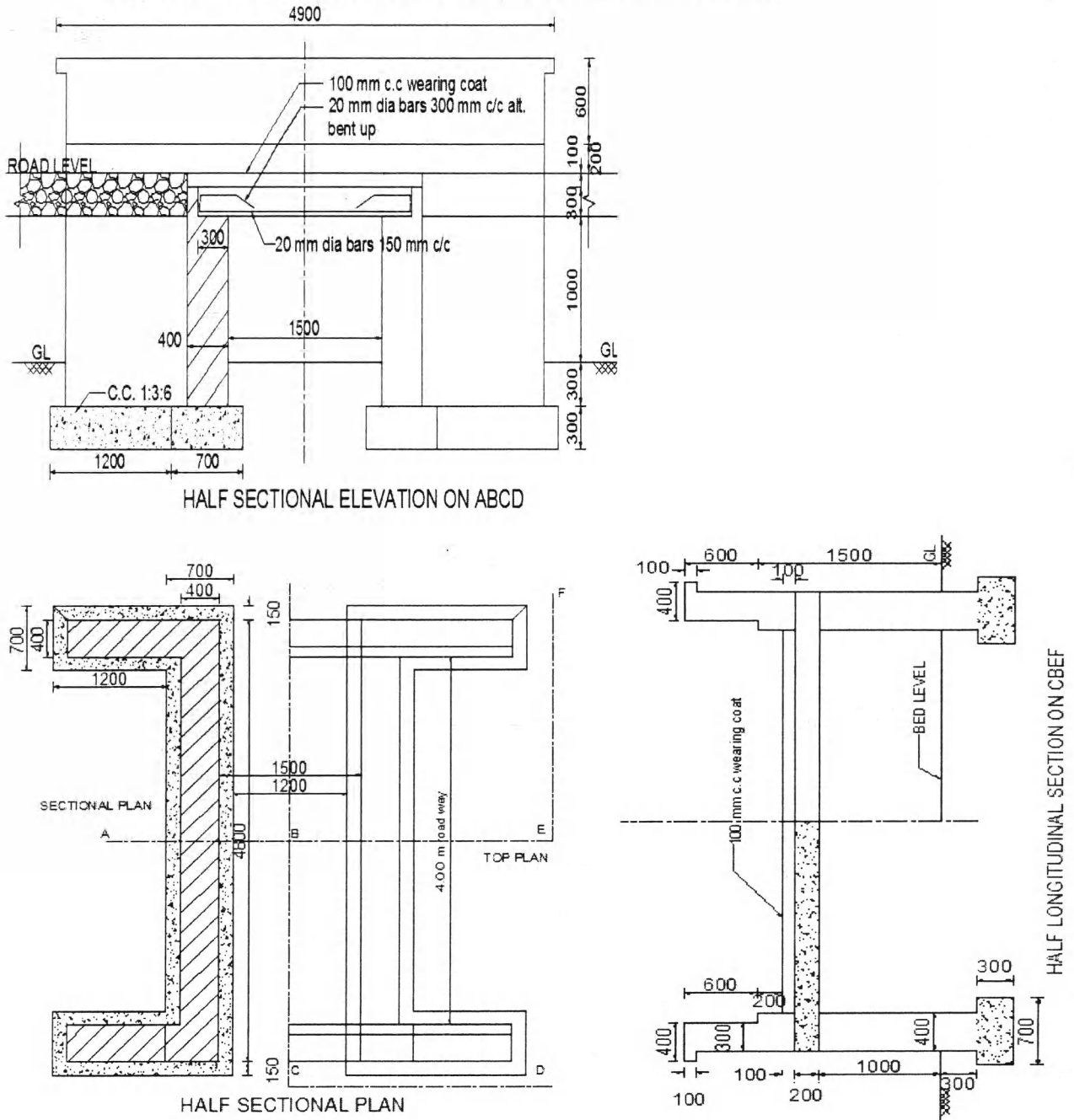


Figure 1