

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE, APRIL – 2024**

QUANTITY SURVEYING - II

[Maximum Marks: **100**]

[Time: **3 Hours**]

- Notes: 1. Assume any missing data suitably
2. Quantities to be worked out in standard form
3. Sketches are accompanied

PART-A

[Maximum Marks: **10**]

I. (Answer **all** questions in one or two sentences. Each question carries **2** marks)

1. Differentiate Common Rafter and Jack Rafter.
2. State the purpose of providing a retaining wall
3. Write the total length of a Straight bar with semicircular hooks on both ends.
4. Define the term engineering specification
5. Distinguish between cost and value of a property. (5 x 2 = 10)

PART-B

[Maximum Marks: **30**]

II. (Answer **any five** of the following questions. Each question carries **6** marks)

1. A shed of inside dimension 9.5 x 6 m is provided with Gabled roof. Wall thickness 30 cm, eaves projection 60 cm, rise 1/3 of span. Calculate the Quantity of Common Rafter assuming spacing between common rafter is 50 cm and size of common rafter 50 mm x 125 mm.
2. Work out the quantity of earth work excavation for the building shown in Figure 1.
3. Prepare quantity estimate for RCC work 1:2:4 excluding steel and its bending for the cantilever retaining wall of length 30 m given in Figure 2.
4. Describe Schedule of Bars and the purposes for which it is prepared.
5. Write detailed specification for first class Brick Work.
6. List the methods of valuation. Explain any two methods
7. Write short notes on
 - a) Scrap Value
 - b) Salvage Value
 - c) Market Value.(5 x 6 = 30)

PART-C

[Maximum Marks: 60]

(Answer *one* full question from each Unit. Each full question carries 15 marks)

UNIT – I

III. Compute the quantities of the following items of work for one truss. Refer Figure 4. The effective span of the truss is 12 m and spacing of truss is 3.5m and the inside length of the shed is 21m.

a) Principal Rafters- 75x50x8 mm angle

b) Struts- 75x50x10mm, 65x45x8mm angles

c) Cleats for purlin- 75x75x8mm angle

d) Ties - 50x8mm FB, 80x6mm FB Weight per m of the steel sections:

75x50x8mm angle - 7.4kg/m

75x50x10mm angle - 9kg/m

65x45x8mm angle - 6.4kg/m

75x75x8mm angle - 8.9kg/m

50x8mm F.B - 3.1kg/m

80x6mm F.B. - 3.8kg/m.

(15)

OR

IV. From the attached plan and the detail of wall section (**Figure 1**), estimate the quantities of the following items of work.

a) First class brick work 1:6 in foundation and plinth

(8)

b) First class brick work 1:5 in superstructure

(7)

UNIT – II

IV. Perform quantity estimate of the following items of work for the RCC slab culvert given in **figure 3**.

a) Earth work excavation in foundation

b) Cement concrete 1:3:6 in foundation

c) First class brick work in 1:4 Cement Mortar

(15)

OR

VI. Compute the following item for the retaining wall 30 m length given in Figure 2.

• Steel reinforcement required in the base slab. Weight of 10 mm dia bar- 0.62 kg/m.

Weight of 16 mm dia bar-1.58 kg/m. Assume 5 cm cover.

(15)

UNIT- III

- VII. A RCC 1:2:4, rectangular beam 20 cm wide 30 cm deep 3m overall length is reinforced with Tor Steel bars 3 numbers 16 mm dia. (Weight 1.58 kg/m) two outer bars straight and L hooked at ends and the inner bar bent up at 45° at appropriate places with L hooked at ends. At top, two outer hanger bars are 10mm in dia. (weight = 0.62 kg/m) straight and L hooked at ends. Stirrups are 6 mm dia. MS bar (weight= 0.22 kg/m) and spaced at 20 cm centre to centre. All concrete cover= 2.5 cm. Prepare Schedule of Bars. (15)

OR

- VIII. a. Write detailed specification for wall plastering in cement mortar. (9)
b. Write the detailed specification for Damp Proof Course in cement concrete 1:2:4. (6)

UNIT - IV

- IX. a. List out the methods of calculation of depreciation and explain any two methods. (6)
b. A property is to produce a net rent of Rs.100000/- per annum for the next 60 years. Calculate the value of the property Assuming that the landlord desires a return of 6% on his capital and the sinking fund to replace the capital is also to accumulate 6%. Also calculate the value of the property if the rate of interest for redemption of capital is 3%. (9)

OR

- X. a. Explain Sinking Fund and Years Purchase. (9)
b. A person has purchased a building at a cost of Rs.10 lakhs. Considering the future life of building structure be 20 years, work out the amount of annual Sinking Fund at 4% interest when scrap value is 10% of the cost of building structure. (6)

D1 – 90x200cm D2 – 80x200cm W1 – 90x120cm,
 W2 – 135x120cm W3 – 180x120cm V1 – 90x60cm
 Tread – 25cm Rise – 15cm.

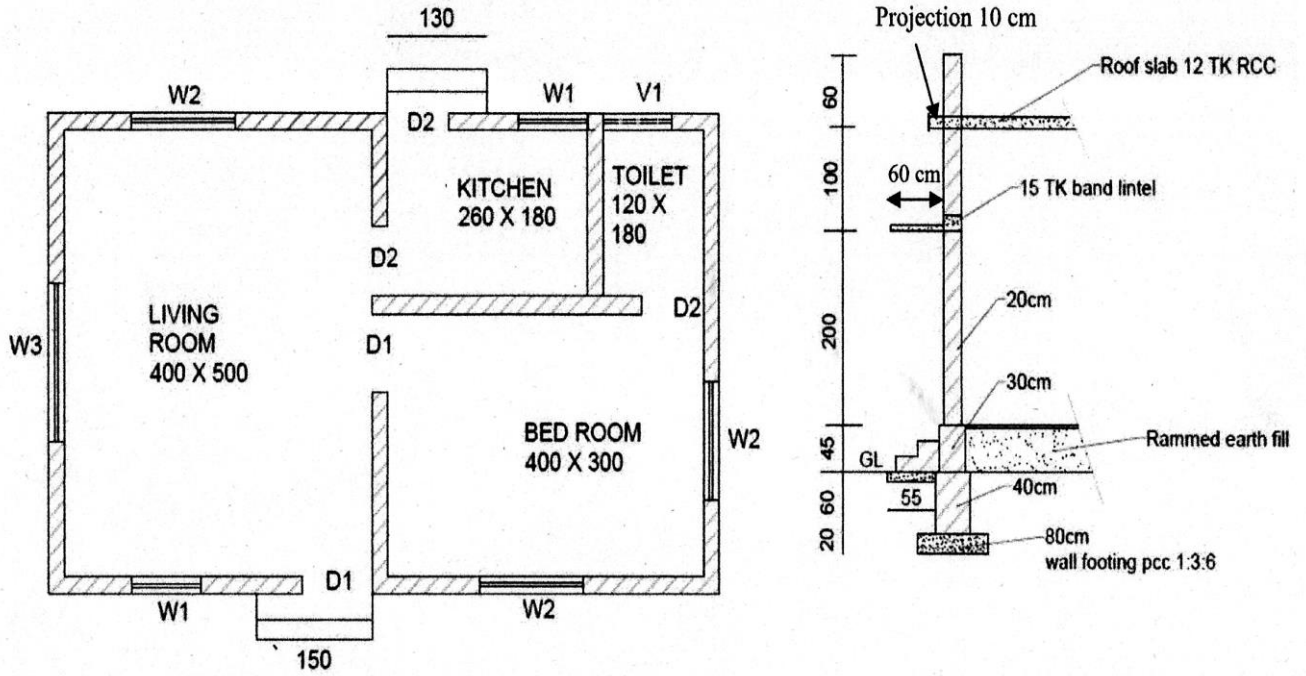


Figure 1

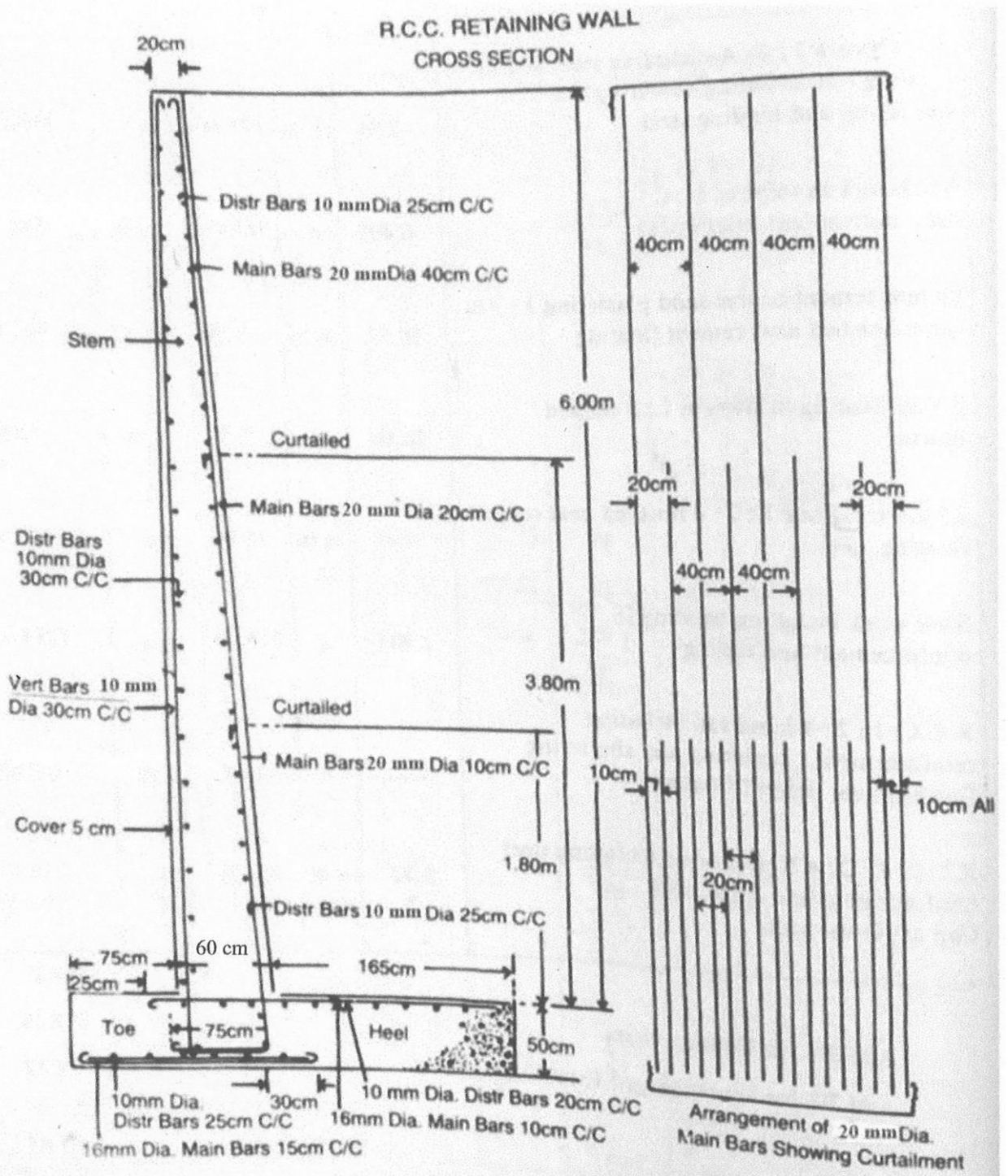


Figure 2

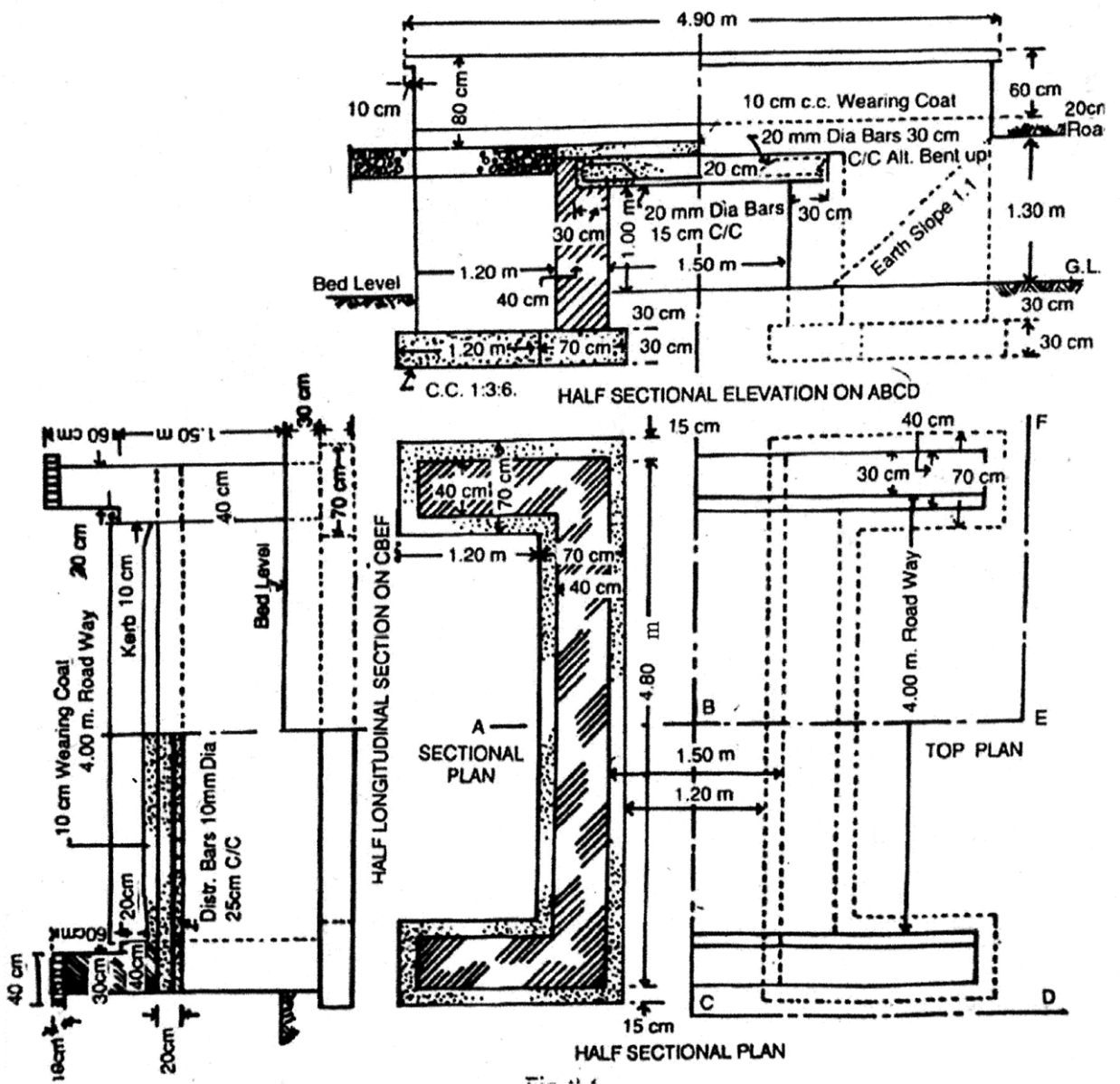
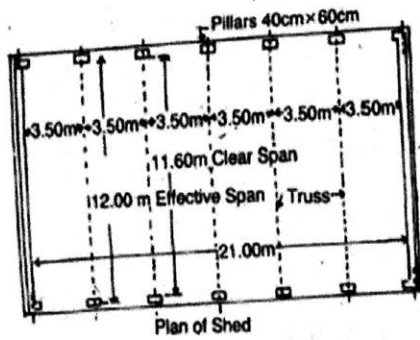


Figure 3



STEEL ROOF TRUSS
 12.00m Span for a Shed 21.00 Long
 Spacing of Truss 3.50m

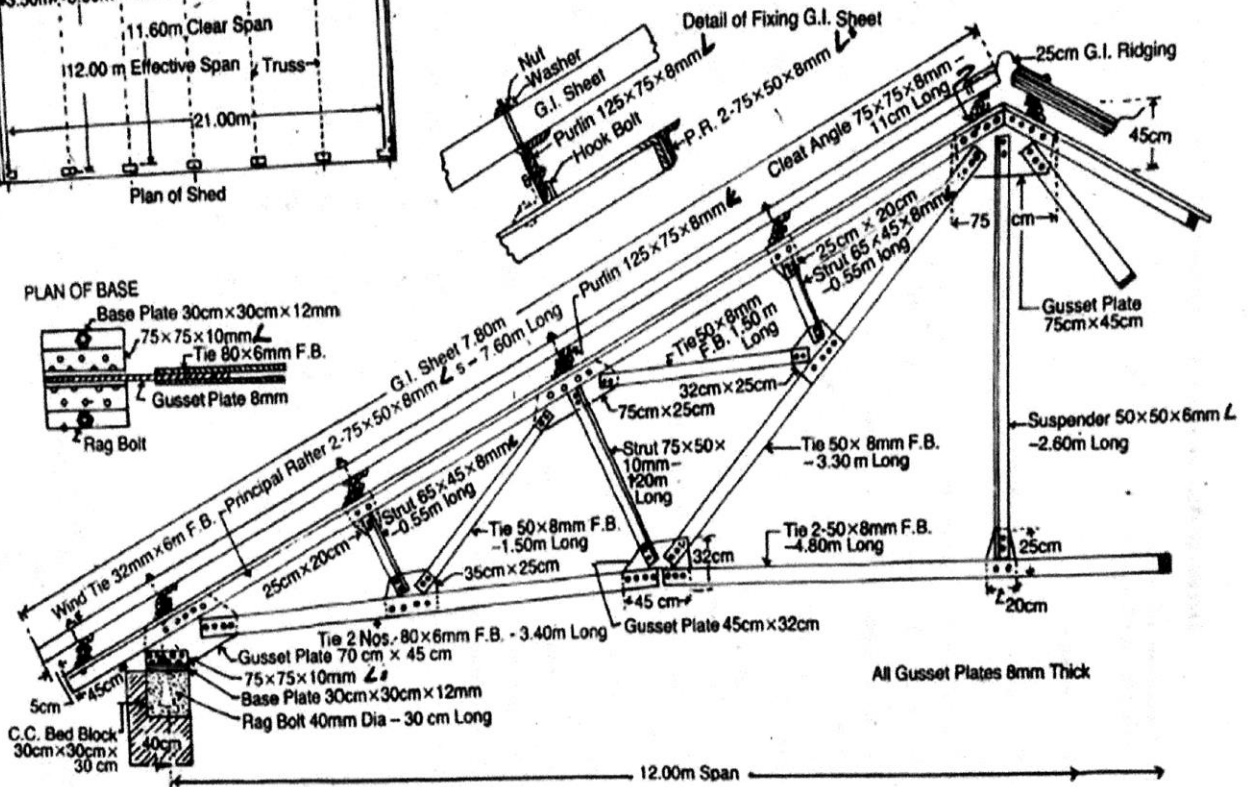


Figure 4
