[5154] - 14

B.E. (Civil Engineering)

QUANTITY SURVEYING, CONTRACTS & TENDERS

(2008 Pattern) (Semester - II) (401009)

Time : 4 Hours]   *[Max. Marks :100*

Instructions to the candidates:

1)   *Answers Q.No. 1 or 2, 3 or 4, 5 or 6 questions from section - I and Q.No. 7 or 8, 9 or 10, 11 or 12 questions from section - II.*

2)   *Answers to the two sections should be written in separate books.*

3)   *Neat diagrams must be drawn wherever necessary.*

4)   *Figures to the right indicate full marks.*

5)   *Use of logarithmic tables slide rule, Mollier charts, electronic pocket calculator and steam tables is allowed.*

6)   *Assume suitable data, if necessary.*

<u>SECTION-I</u>

Q1) a)   Explain the need for making estimation of any Civil Engineering work. Explain the difference between estimator and quantity surveyor.   **[6]**

b)   Explain the various data required for preparing different types of estimate. What is meant by Item of work. Enlist the item of wok in the sub structure part of residential building.   **[4]**

c)   Explain Provisional cost and Prime cost, Centage charges.   **[6]**

OR

Q2) a)   Write short notes on   **[6]**

i)   Approximate estimate for Road.

ii)   Approximate estimate for water supply and sanitary scheme.

b) Prepare the approximate estimate for a building with the following details Plinth area = 3500 sq-m, Rate per sq-m=500 sq-m **[6]**

Additional cost for the following is required to be considered in the total cost

    i)   Architectural finishes = 1.5%

    ii)   Water supply and sanitory = 8%

    iii)   Electrification = 6%

    iv)   Miscellaneous and Contingencies - 15%

c) What is significance of DSR in the estimation for any construction? What are the details available in DSR? **[4]**

Q3) a) What are the methods of taking out detailed estimates? Briefly explain central line method. **[6]**

b) For the plan and sectional details given in fig 1 & 2, prepare a detailed estimate for the following item of work.

    i)   PCC (1:4:8) for foundation **[4]**

    ii)   I class brick work in super structure in cm 1:6. **[4]**

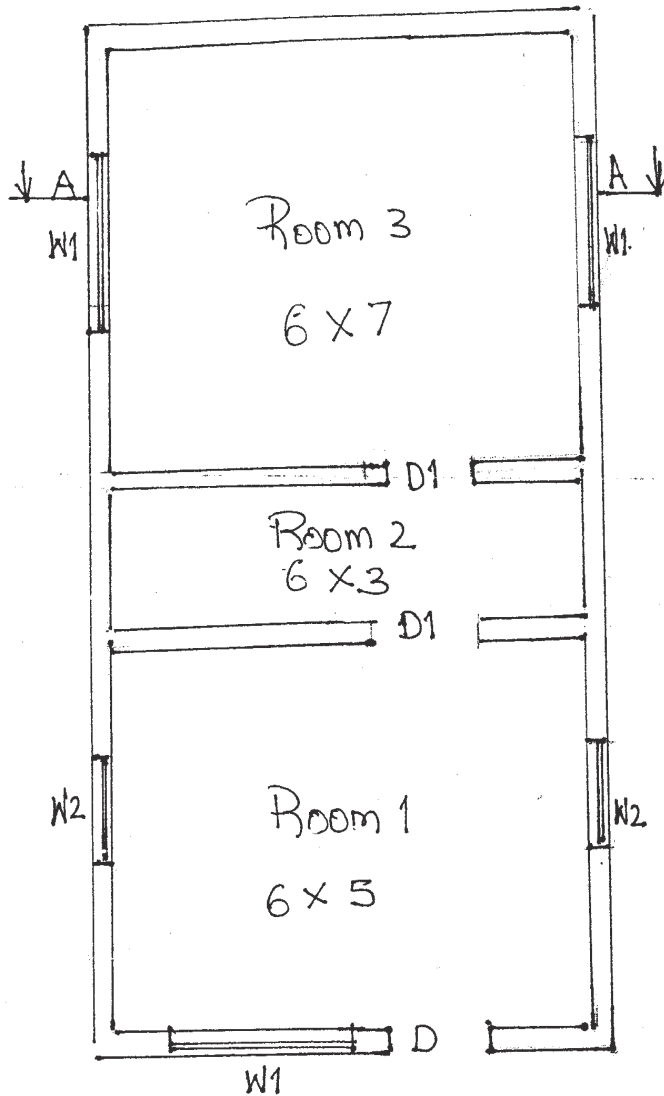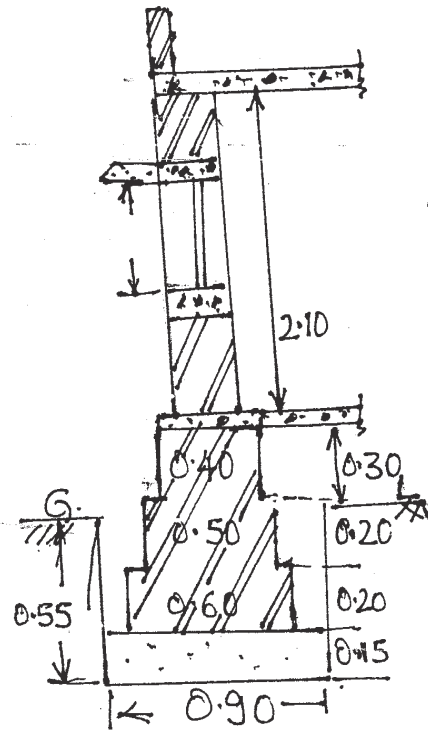   iii)   Door D, with frame size 75cm×5cm **[4]**

fig 1. Plan

fig 2. Section on AA

Schedule of Opening

D = 0·90 × 2·1

D1 = 0·60 × 1·8
W1 = 1·80 × 1·5
W2 = 1·50 × 1·2

(Note :- All dimensions in metre)

OR

Q4) a) What do you understand by bar bending schedule and explain how length of bar is worked out considering, hook, overlap and cranking. **[8]**

b) Explain the method for estimating the quantity of earth work for road and canal works. What are lead and lift and explain their significance in estimation for road or canal. **[6]**

c) What are the different type of and number of labours required for the following item of work **[4]**

   i) $10m^3$ of PCC (1:4:8) in foundation.

   ii) $10m^3$ of I class brick masonry in super structure in cm 1:6.

Q5) a) State importance and uses of specification and analysis of rates. Explain how specification affects the rate of item of work. **[6]**

b) Write note on any 2 of the following: **[4]**

   i)   General or brief specification,

   ii) Detailed specification,

   iii) Standard specification.

c) Write detailed specification for **[6]**

   i)   Internal plastering in CM 1:6.

   ii) Centering and shuttering.

<div align="center">OR</div>

Q6) a) Explain the term task work. State the task work for the following item of works **[6]**

   i)   I class Brickwork in cm 1:6 for superstructure.

   ii) PCC (1:4:8) in plinth of building.

b) Work out the quantity of material required for following: **[4]**

    i) First class brick work in CM 1:6---1 m³

    ii) Plastering 12mm thick in CM 1:6 10sq-m

c) Find out the cost per unit forcement concrete (1:4:8) in foundation **[6]**

The following rates for material & labour may be considered for rate analysis

    i) Cement = Rs. 300/bag,

    ii) Sand = Rs.1400/m³

    iii) Aggregate= Rs, 1400/m³

    iv) Bricks = Rs. 4500/1000No,

    v) Steel = Rs. 38,500/MT.

    Labour rates/ day

        1) Head mason = Rs.600/-,

        2) Mason = 450/-,

        3) Mazdoor = Rs. 300/-,

        4) Helper = Rs. 350/-

SECTION-II

Q7) a) A newly constructed bungalow stands on a plot having cost of Rs. 60,000/- and the construction costs Rs.2,00,000/- if estimated life of bungalow is 66 years and the owner desires 8% returns on the construction cost and 5% returns on the land cost, determine the annual rent that should be charged. Assume annual installment of sinking fund for 66 years' life to be 0.5 paisa per Rupee, annual repair cost 0.5% of the construction cost and other outgoings 30% of the gross rent. **[10]**

b) What is the necessity of calculating 'Depreciation'? State four methods of calculating depreciation and explain any one method clearly. **[4]**

c) Discuss eight factors on which value of a land depends. **[4]**

OR

Q8) a) Determine value of the land shown in Fig. Q.8 (a) using belting methods. Assume three belts of standard depths and value of the first (front) belt Rs.120/- per m². **[10]**

Fig. Q.8(A) ⇒
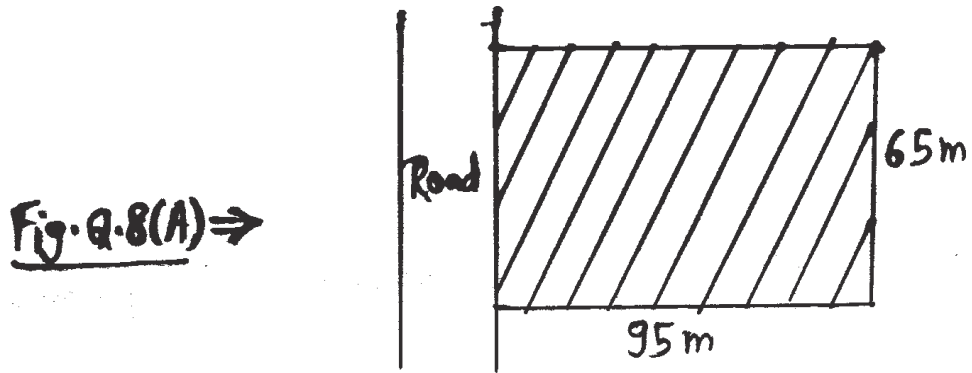
b) Write two differences between: **[4]**

i) Distress value – Scrap Value, and

ii) Valuation of Building – Valuation of Land.

c) State merits and demerits of following types of property ownership: **[4]**

i) Leasehold Property, and

ii) Freehold Property.

Q9) a) Enlist the methods of minor works execution in P.W.D. Discuss any one method in details. **[6]**

b) What is meant by a tender? Discuss the advantages and disadvantages of 'Public Tender'. **[5]**

c) Detail out the 'four-envelope system' of tender submission. **[5]**

OR

Q10) a) Explain six precautions to be taken at the time of scrutiny of tenders. **[6]**

b) Clarify the terms: Revocation of Tender, Rejection of Tenders. **[5]**

c) State the meaning and necessity of 'Draft Tender Papers' to be prepared before assigning any Government Work to a Contractor. **[5]**

Q11)a) State whether True or False, giving proper justification: (You will not get any marks if justification is not written) **[6]**

    i) A building contract is void in a case an 80 years old lady signed it in the hospital when she is admitted for treatment for high blood pressure.

    ii) A building repairs contract is legal and valid even if a young contractor of 21 year age signs it with the owner, who is a widow having age 50 years and presently undergoing a treatment for multiple fractures after a severe road accident.

    iii) A contractor appoints his step-brother as an arbitrator for his dispute with an owner.

  b) Briefly explain administrative and organizational responsibilities of contractors. **[5]**

  c) What is meant by an 'Arbitrator'? Briefly discuss two tyes of arbitration. **[5]**

<div align="center">OR</div>

Q12)a) Explain liquidated damages, unliquidated damages in case of breach of contract. **[6]**

  b) State the necessity of arbitration. Discuss the powers of an arbitrator.**[5]**

  c) Explain with examples the following with reference to Civil Engineering works: **[5]**

    i) Conditions of contract related to labour and personnel, and

    ii) Conditions of contract related to execution of work.

<div align="center">ℰ ℰ ℰ</div>