

Total No. of Questions : 12]

SEAT No. :

**P1684**

**[4859]-14**

[Total No. of Pages : 6

**B.E. (Civil Engineering)**

**QUANTITY SURVEYING CONTRACTS & TENDERS**

**(2008 Pattern) (Semester-II)**

*Time : 4 Hours]*

*[Max. Marks : 100*

*Instructions to the candidates:*

- 1) *Answer any 3 questions from each section.*
- 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.*

**SECTION-I**

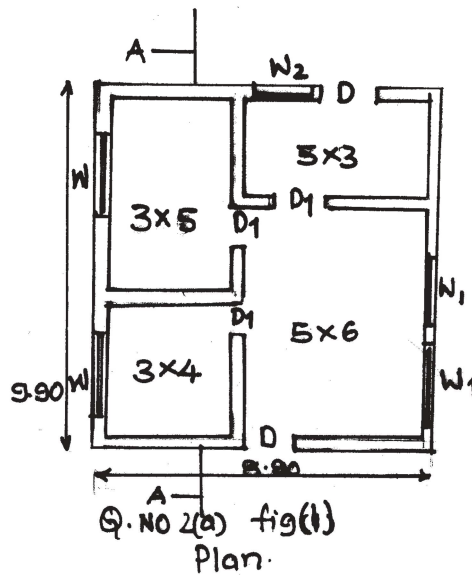
- Q1)** a) Explain the necessity of estimate. What are the different types of estimates? Explain preliminary & detailed estimate. **[6]**
- b) Prepare a preliminary estimate for a school building of 1000 students. The following details may be used for estimation: **[6]**
- i) Carpet area = 1.2 m<sup>2</sup> per student,
  - ii) 20% of plinth area for corridor, verandah, lavateries,
  - iii) 15% for walls
  - iv) Water supply at 5% & sanitation 6% of building cost
  - v) Electrification at 10% of building cost
  - vi) Cost of approach road & boundary wall at 3% of building cost
  - vii) Contingency & workcharge establishment at  $7\frac{1}{2}\%$  of total cost.  
Assume plinth area rate of Rs. 2000 m<sup>2</sup>.
- c) Explain in brief method of preparing approximate estimate for an irrigation project. **[6]**

OR

**P.T.O.**

**Q2) a)** Workout the quantities of the following item of work by PWD method & compare it by centre line method fig (i) in plan [16]

- Earthwork excavation for foundation.
- Brick masonry in cm 1:6 for superstructure.
- Internal plastering 12 mm thick in cm 1:6.
- R.C.C. Lintel.

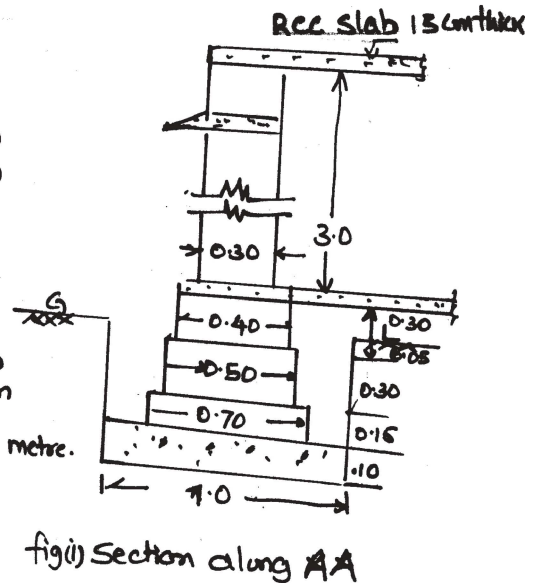


Doors  
 $D = 0.90 \times 2.10$   
 $D_1 = 0.75 \times 2.10$

Window  
 $W = 1.20 \times 1.50$   
 $W_1 = 0.90 \times 1.50$

Depth of Excavation  
 $= 0.60\text{m}$

All Dimension in metre.



**b)** Give unit of measurement of Any 2 of the following: [2]

- Frame work of Doors & window.
- Damp proof course.
- External plastering.

**Q3) a)** Estimate the quantity of earthwork for an approach road to be constructed in cutting & filling.

Chainage	0.00	30	60	90	120	150	180
Ground level (m)	80.50	80.00	79.2	80.50	81.00	80.50	81.00

Assume formation level at chainage 0.00 81.00 m & formation width of 10 m. Side slope 1V to 2H in filling & 1V to 1H in cutting. [10]

- b) An hospital building is to be provided with a brick wall constructed in CM 1:6. The length of wall is 75m, height above plinth = 2.4m, thickness of wall = 30 cm, find:
- Quantity of material required.
  - If 4 mason & 12 mazdoor are required for construction find the time in days for completion of work. [6]

OR

- Q4)** a) Explain the need for preparing bar bending schedule. Prepare a typical bar bending schedule for an RCC roof slab. [8]
- b) What is development length & explain development length in tension & compression? Explain how length of bent up bars are workedout. [4]
- c) Explain how & why contingences & work charge establishment are added, while preparing a detailed estimate. [4]

- Q5)** a) What is the necessity of writing specification of item in construction? Explain method of preparing specification. [4]
- b) Prepare the detailed specification for RCC works in slab & beam. [8]
- c) Explain detailed specification & what are the details to be included in the detailed specification. [4]

OR

- Q6)** a) What is task work? Why does it vary? Explain its importance with an example. [4]
- b) Discuss the various factors affecting rate of any item of work. [4]
- c) Prepare Rate Analysis for REC works in column in C.C 1: 1.5:3 using coarse sand, 20mm size ballast, cement necessary centering, T & P may be assumed.

For materials and labour, assume local rates. [8]

## **SECTION-II**

**Q7) a)** Explain the following with reference to purpose of valuation: [6]

- i) Betterment charges
  - ii) Taxation
  - iii) Insurance.
- b) A vacant plot of size  $40\text{m} \times 67.5\text{m}$  has shorter side adjoining a road. Knowing that average land cost in the locality is Rs. 600/- per square meter, determine total cost of the plot using method of belting. Assume three belts. [6]
- c) A small temporary construction on the site has total cost of 12,000 rupees. Assuming salvage value at the end of 6 years to be 3,000 rupees, calculate depreciation and book value for each year. Use straight line method of depreciation. Give answer in usual tabular form. [6]

OR

**Q8) a)** With appropriate examples briefly explain: [6]

- i) Accommodation value.
  - ii) Speculative value.
  - iii) Distress value.
- b) An old building is purchased for Rs. 1,00,000/- excluding land cost. Using rate of compound interest for sinking fund as 5%, determine the amount of annual sinking fund. Assume future life of building 30 years and scrap value 10% of the cost of purchase. [6]
- c) A freehold property consists of a  $600\text{ m}^2$  plot with a 3-storeyed building over it. Find total value of the property using following data: [6]
- Built-up area on ground floor =  $180\text{ m}^2$
  - Total carpet area (on 3 floors) =  $250\text{ m}^2$
  - Expected future life of building = perpetuity
  - Rate of land = Rs. 40/- per  $\text{m}^2$  (for vacant land)

- Average net rent = Rs. 4/- per m<sup>2</sup> of the carpet area
- Permissible built up area on ground floor =  $\frac{1}{3}$  of plot area
- Rate of interest on capital = 7%
- Total outgoings =  $\frac{1}{6}$  of the gross rent.

**Q9)** a) State the methods adopted by P.W.D. for execution of works clearly explain the following with examples: [5]

- Administrative approval.
  - Technical sanction.
- If Government does not have sufficient funds for public works, what is the solution for executing such works? Discuss clearly the pros and cons. [5]
  - Briefly explain important contents of 'FIDIC Document'. [6]

OR

**Q10)** a) Discuss meaning and necessity of 'pre-tender conference'. [5]

- Explain the terms 'revocation of tender' and 'unbalanced tender'. [5]
- Explain submission, opening and scrutiny of tenders under 'four envelope system'. [6]

**Q11)** a) Discuss advantages and disadvantages of pre-qualification of contractors. [5]

- Explain qualifications, duties and powers of an arbitrator. [5]
- State whether True or False with proper reasons (justification). No marks will be given if reason is not mentioned. [6]
- Earnest money may be submitted in the form of bank guarantee with the banks specified by the owner.

- ii) Escalation of price variation clause can not be the part of a valid contract.
- iii) Defect liability period is generally 3 to 5 years after work completion.

OR

- Q12)**a) In how many ways a contract can be terminated? Discuss termination of contract by impossibility of performance. [5]
- b) Discuss merits and demerits of item-rate contract with appropriate examples. [5]
- c) State whether true or false, giving proper reasons (no marks will be given if reason or justification is not stated). [6]
- i) Security deposit consists of performance guarantee and retention money.
  - ii) Owner or contractor may put up the matter of theft of material from the site for arbitration if the thief is caught red handed.
  - iii) Compliance of relevant laws, acts by the contractor should not be a part of conditions of contract.

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