

Reg. No. :

Question Paper Code : 71599

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2017.

Seventh Semester

Civil Engineering

CE 6704 – ESTIMATION AND QUANTITY SURVEYING

(Regulations 2013)

Time : Three hours

Maximum : 100 marks

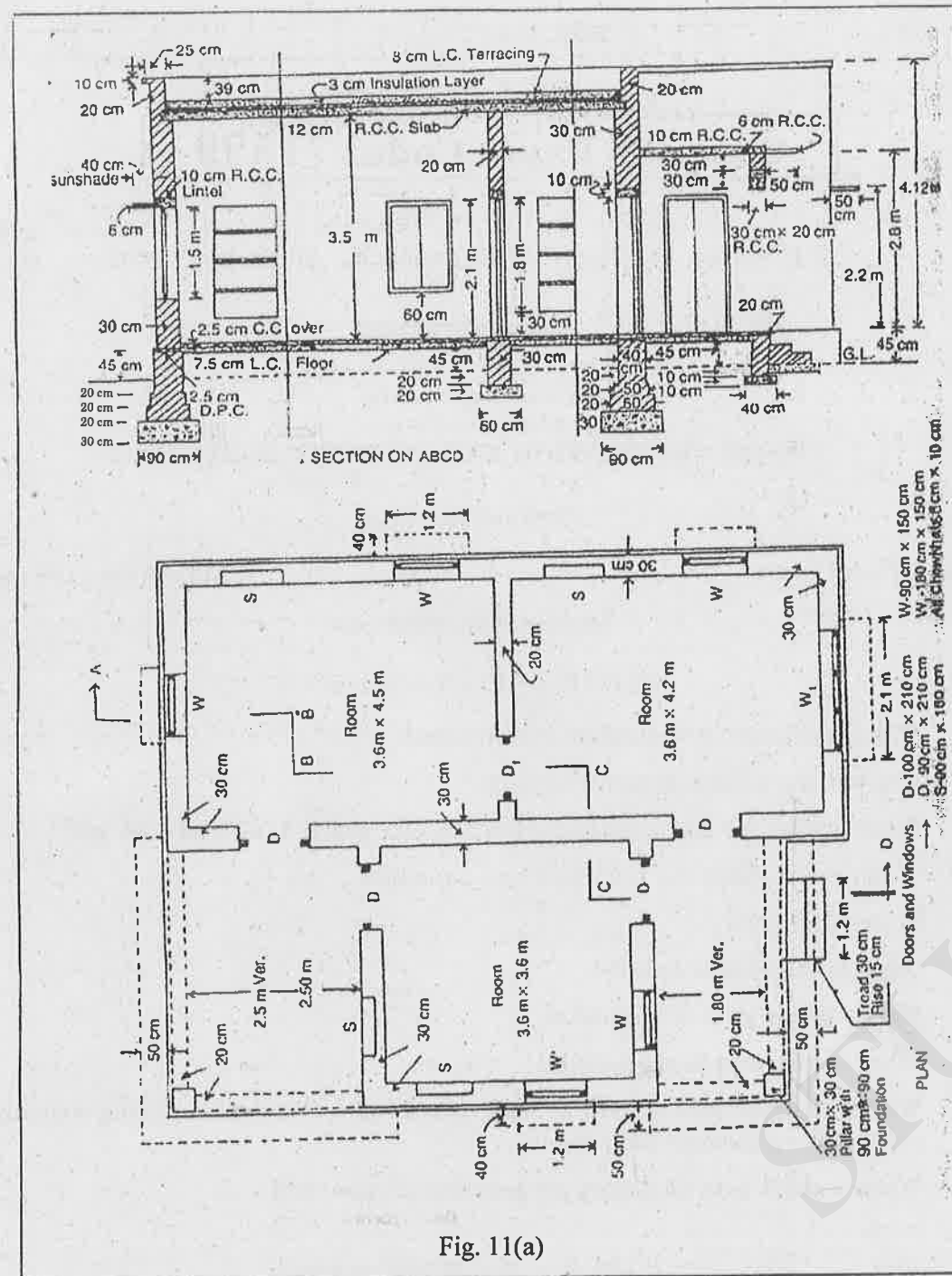
Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define separate or individual wall method.
2. List out the various types of arches.
3. What are all the appurtenances required for septic tank and soak pit?
4. Write down about the tube well and aqueduct.
5. State E-tender.
6. What is called arbitration?
7. Write the purpose of valuation.
8. What is called as depreciation?
9. Write a simple note on how to find a depth of a foundation during writing the report for residential buildings.
10. Write a short note on report preparation of open well.

PART B — (5 × 16 = 80 marks)

11. (a) Estimate the quantities of the following items of work of the building. The plan and sectional elevation of a building are given in Fig. 11(a).
- (i) 1st class brick work in 1:6 cm in superstructure including parapet. (5)
 - (ii) 12 mm thick cement plastering 1:6 in walls. (5)
 - (iii) White washing 3 coats inside. (3)
 - (iv) Steel reinforcement bars in R.C.C at 1%. (3)



Or

- (b) Prepare a detailed estimate of a small R.C.C. framed building from the given plan, and sectional elevation Fig 11(b). Find also the plinth area rate of building. The general specifications are as follows :
- Cement concrete 1:3:6 in foundation. (3)
 - R.C.C. work 1:2:4 in columns, slab, beams. (3)
 - 1st class brick work in 1:6 cement mortar. (5)
 - Window shutters 4 cm thick glazed of teak wood excluding fittings. (5)

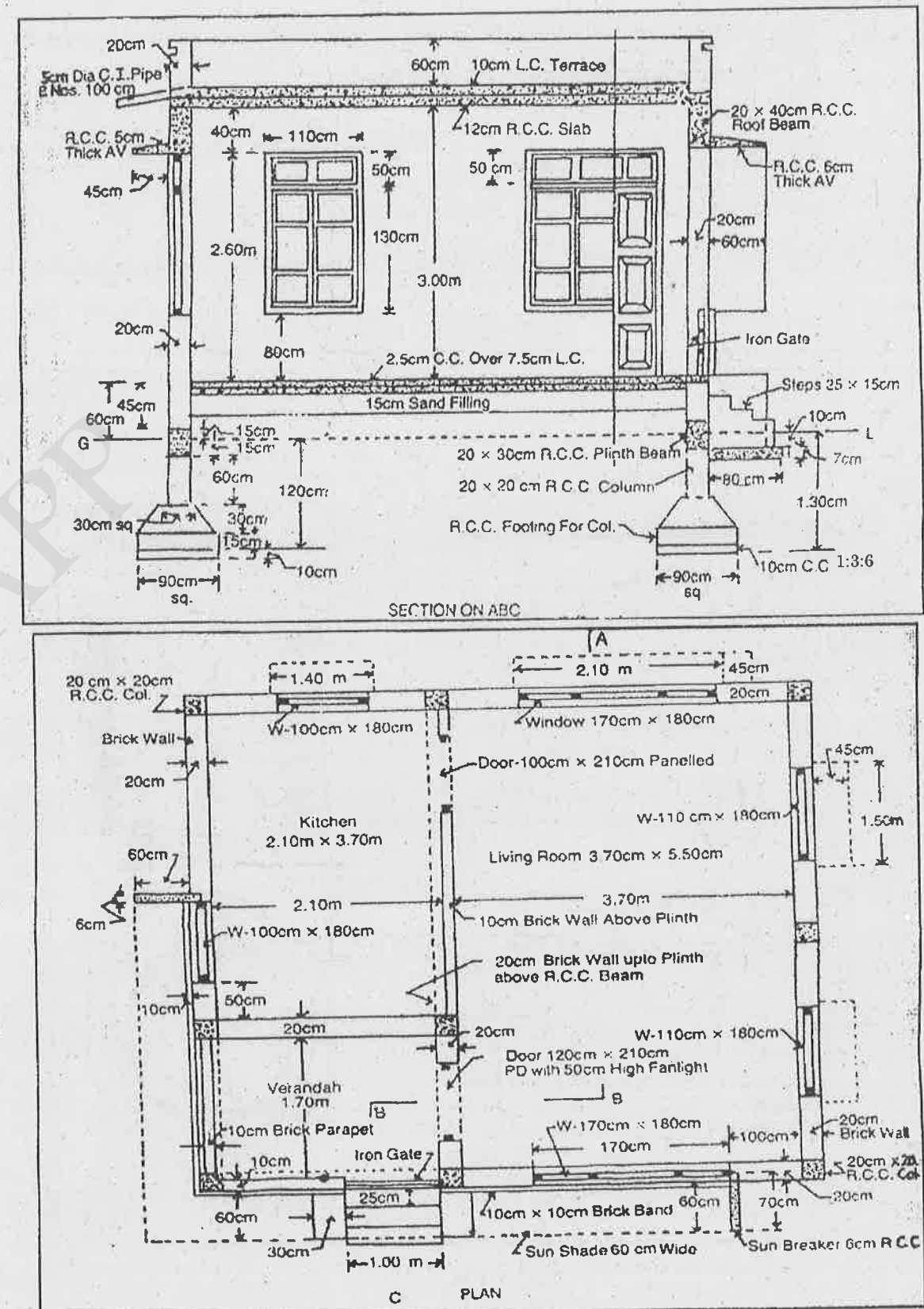


Fig. 11(b)

12. (a) Prepare a detailed estimate of a septic tank with soak pit for 40 users from the given drawings Fig. 12 (a).
- (i) Earth work excavation. (4)
 - (ii) Cement concrete 1:3:6. (4)
 - (iii) First class brick work in 1:4 cm in septic tank. (4)
 - (iv) 100 mm dia. SW. pipe laying and jointing with 1:3 cement mortar complete. (4)

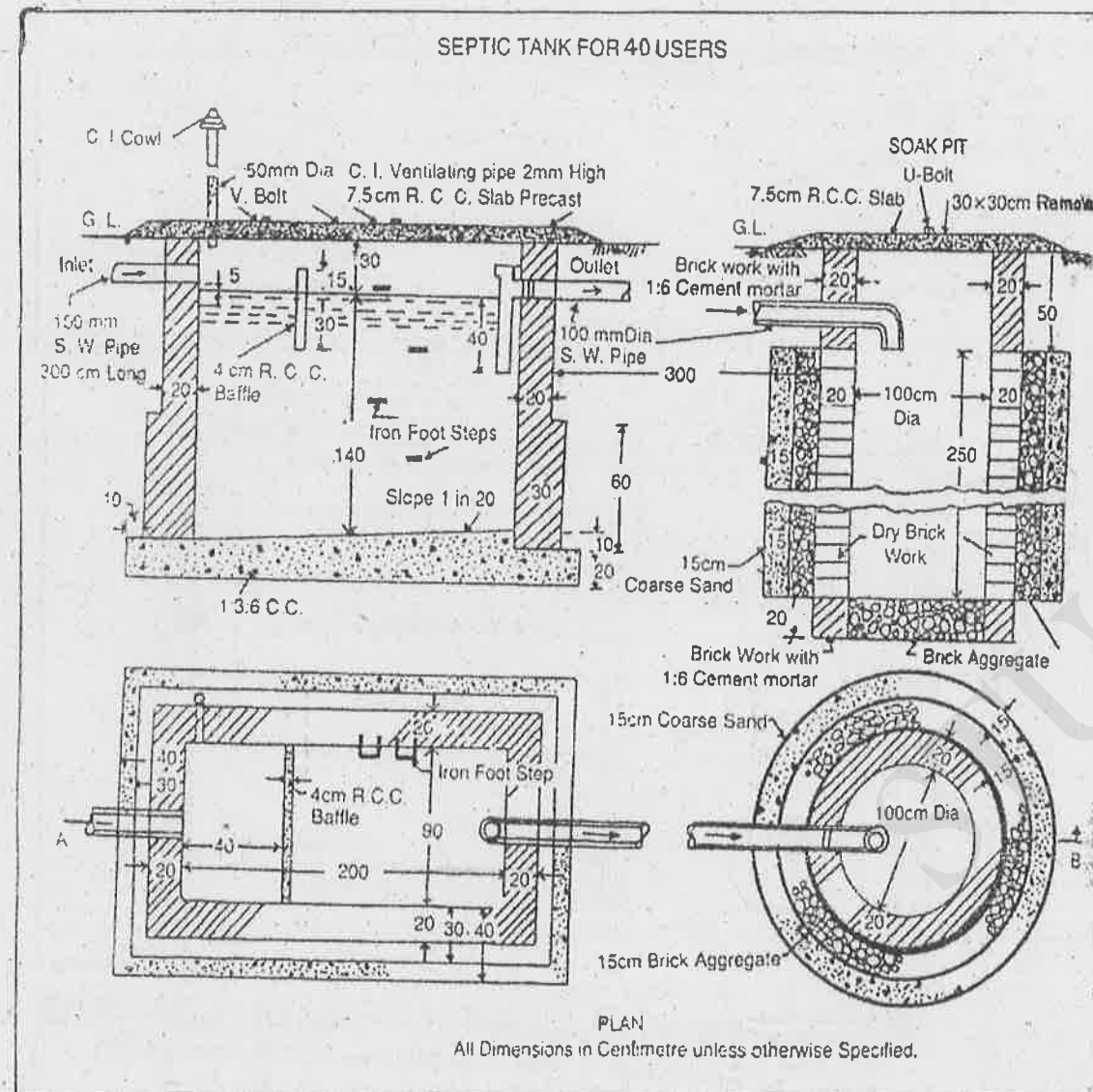


Fig. 12(a)

Or

- (b) Prepare a detailed estimate of a slab culvert of 1.50 meter span and 4.00 meter roadway from the given drawing Fig. 12(b). The general specifications are as follows.
- (i) Earth work excavation. (2)
 - (ii) Cement concrete 1:3:6 in foundation with stone ballast. (2)
 - (iii) 1st class brick work in 1:4 cement mortar – Abutments. (4)
 - (iv) R.C.C. work 1:2:4 in slab excluding steel and its bending but including centering shuttering and binding steel. (4)
 - (v) Cement pointing 1:2 in walls. (4)

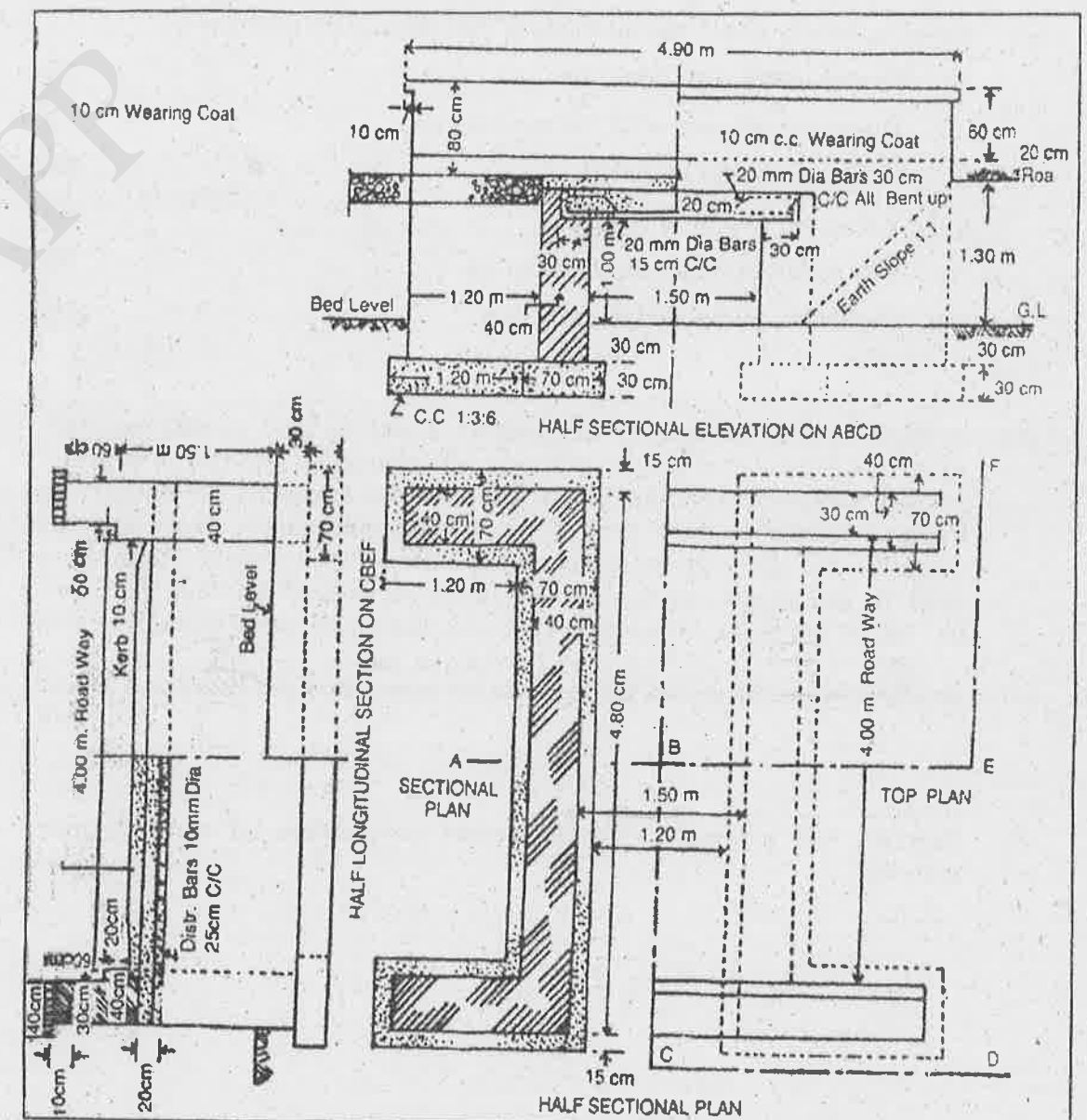


Fig. 12(b)

13. (a) Write a detailed specifications of the followings.
- (i) Earthwork in excavation in foundation. (4)
 - (ii) Cement concrete 1:2:4. (4)
 - (iii) Reinforced cement concrete (R.C.C). (4)
 - (iv) Damp proof course 2.5 cm – 1:1.5:3. (4)

Or

- (b) Briefly explain the each and every heading and items for the preparation of contract document. (16)

14. (a) Describe briefly about the methods of valuation such as follows :
- (i) Rental method of valuation. (2)
 - (ii) Direct comparison with the capital value. (2)
 - (iii) Valuation based on profit. (2)
 - (iv) Valuation based on the cost. (2)
 - (v) Development methods of valuation. (4)
 - (vi) Depreciation method of valuation. (4)

Or

- (b) A three storied building is standing on a plot of land measuring 1000 sq.m. The plinth area of each storey is 500 sq.m. The building is of R.C.C framed structure and the future life may be taken as 70 years. The building fetches a gross rent of Rs. 2500.00 per month. Work out the capitalized value of the property on the basis of 6% net yield. For sinking fund 3% compound interest may be assumed. Cost of land may be taken Rs. 100.00 per Sq.m. Other data required may be assumed suitably. (16)

15. (a) Briefly explain the report preparation for estimation of culvert and roads. (16)

Or

- (b) Describe the principles for the report preparation of water supply scheme. (16)

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Reg. No. :

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Question Paper Code : 40826

05/05/18
AN

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2018

Seventh Semester

Civil Engineering

CE 6704 – ESTIMATION AND QUANTITY SURVEYING

(Regulations 2013)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions.

PART – A

(10×2=20 Marks)

1. Summarize the advantages of centre line method over long wall and short wall method.
2. Give the units of measurements for plastering, flooring and painting.
3. List out the factors to be considered in design of septic tank.
4. Describe the methods to determine the area of roads in excavation.
5. Define lump sum contract.
6. Define Arbitrators.
7. List out the different methods of depreciation.
8. Demonstrate the meaning of salvage value.
9. List out methods of valuation.
10. Distinguish between freehold lease hold property.

13. a) Give the detailed specification for the following.
- i) Earthwork in excavation in foundation. (5)
 - ii) Lime concrete in roof terracing. (5)
 - iii) Centering and shuttering. (6)

(OR)

- b) Briefly explain the following.
- i) Schedule of rates. (5)
 - ii) Lump sum contract and labour contract. (6)
 - iii) Termination of contract. (5)

14. a) Calculate the standard rent of a government residential building newly constructed from the following data.

- i) Cost of land Rs. 10,000.00. (2)
- ii) Cost of construction of building Rs. 40,000.00 (2)
- iii) Costs of roads with in compounds and fencing Rs. 2,000.00 (2)
- iv) Cost of electric installation including fans -10% of the cost of building. (3)
- v) Municipal house tax Rs. 400.00 per annum. (3)
- vi) Water Tax Rs. 250.00 per annum. (2)
- vii) Property tax Rs. 140.00 per annum. (2)

(OR)

- b) A three storied building is standing on a plot of land measuring 800 sq.m. The Plinth area of each storey is 400 sq.m. The building is of RCC framed structure and the future life may be taken as 70 years. The building fetches a gross rent of Rs. 1500 per month. Work out the capitalized value of the property on the basis of 6% net yield. For sinking fund 3% compound interest may be assumed. Cost of land may be taken as Rs. 40.00 per sq.m. other data required may be assumed suitably.

15. a) Examine the report on estimation for construction of water supply and sanitary work.

(OR)

- b) Discuss the report on estimation for construction of bridge culverts and arch culvert.

PART – B (5×16=80 Marks)

11. a) The Plan and sectional elevation of the building are given in Figure-1. Estimate the quantities for the following items of works. (4×4=16 Marks)
- i) RCC slabs, lintels and sunshades.
 - ii) Doors and windows.
 - iii) Plastering internal and external.
 - iv) Brick work and plastering in steps.

(OR)

- b) The Plan and sectional elevation of the building are given in Figure-1. Estimate the quantities for the following items of works. (4×4=16 Marks)
- i) 1st class brickwork in Super structure CM1:6.
 - ii) PCC in foundations.
 - iii) Ceiling plastering.
 - iv) Earth work in excavation.

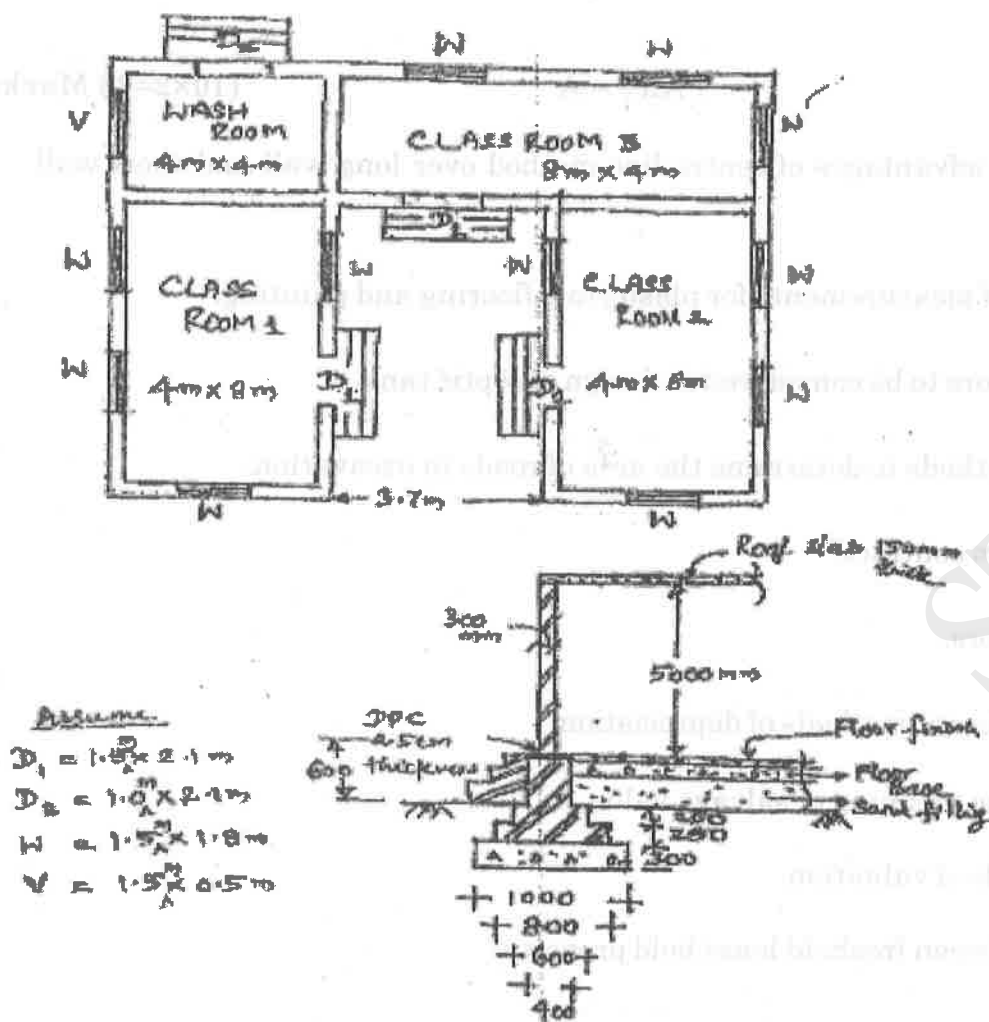


Figure – 1
(All Dimensions are in mm)

12. a) Estimate the quantity of earthwork in cutting for a road of 10 m formation width with the following data using mean sectional area method or trapezoidal method. Side slopes is 2:1 (H:V) and no cross slopes. If the cost of cutting is Rs. 160/m³, estimate the total cost of earthwork.

Chainage	0	30	60	90	120	150
Ground Level	80.5	79.3	81.4	84.0	85.1	85.5
Formation Level	75.0	Rising gradient of 1 in 30				

(OR)

- b) The details of a septic tank is shown in Figure-2. Estimate the following items of work. (4×4=16 Marks)
- i) Earthwork excavation in foundation.
 - ii) Brick work with 1:4 CM.
 - iii) 20 mm cement plaster on walls.
 - iv) Floor finish in CC 1:2:4 with water proofing compounds.

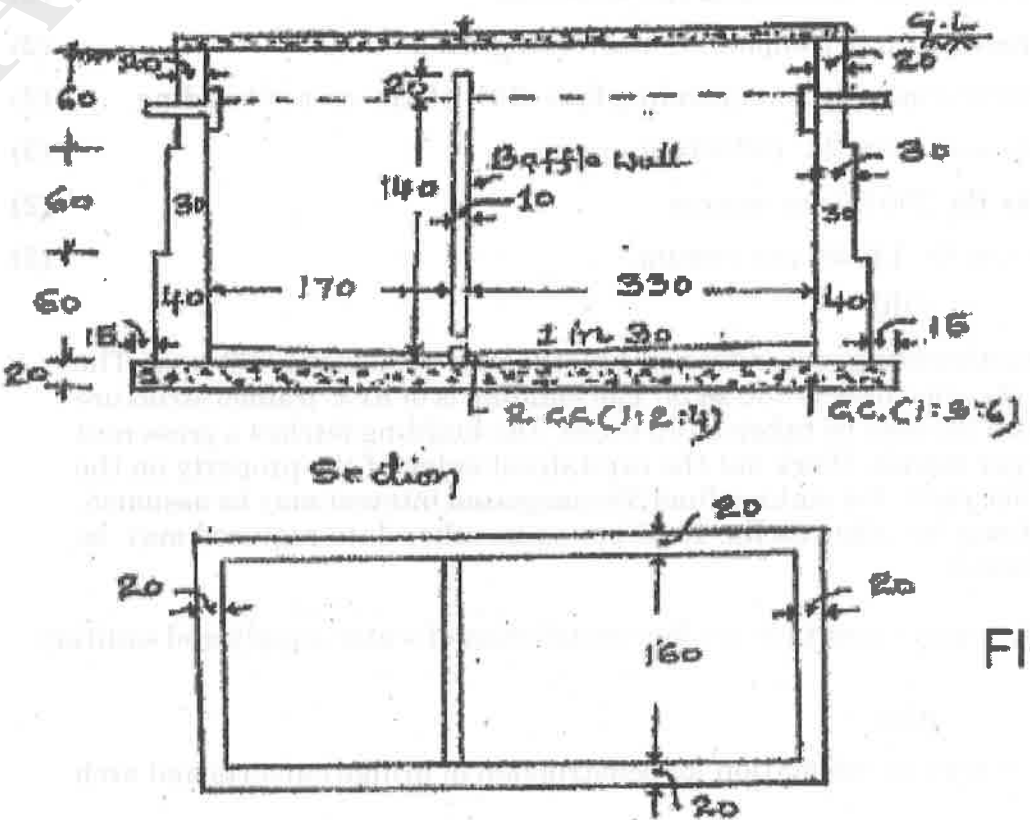


Figure – 2
(All Dimensions are in mm)



B.E./B.Tech. DEGREE EXAMINATIONS, APRIL/MAY 2019.

CE 6704 — ESTIMATION AND QUANTITY SURVEYING

(Common to PTCE 6704 – Estimation and Quantity Surveying for B.E. Part Time – Sixth Semester – Civil Engineering – Regulation 2014)

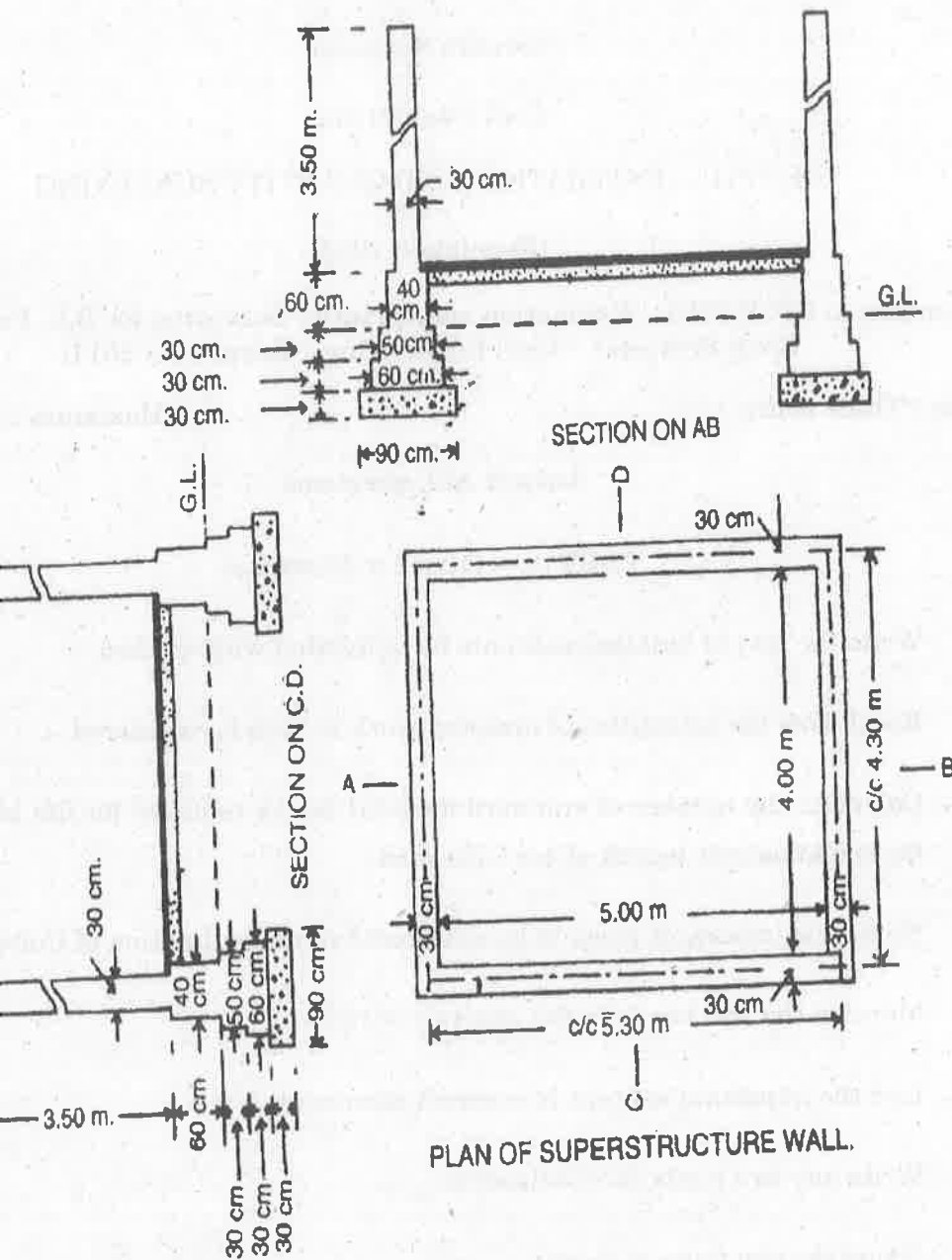
Maximum : 100 marks

PART A — (10 × 2 = 20 marks)

1. Write the way of building estimate by individual wall method.
2. Recall how the quantities of masonry work in arch is calculated.
3. Calculate the number of standard modular bricks required for flat brick soling for one kilometer length of 4m wide road.
4. Name the important parts to be considered in the estimation of Culvert.
5. Mention the two heads in the analysis of rates.
6. List the important content in contract documents.
7. Write any two methods of valuation.
8. Name the two types of lease.
9. Write the principle of report preparation.
10. Define capital cost.

PART B — (5 × 13 = 65 marks)

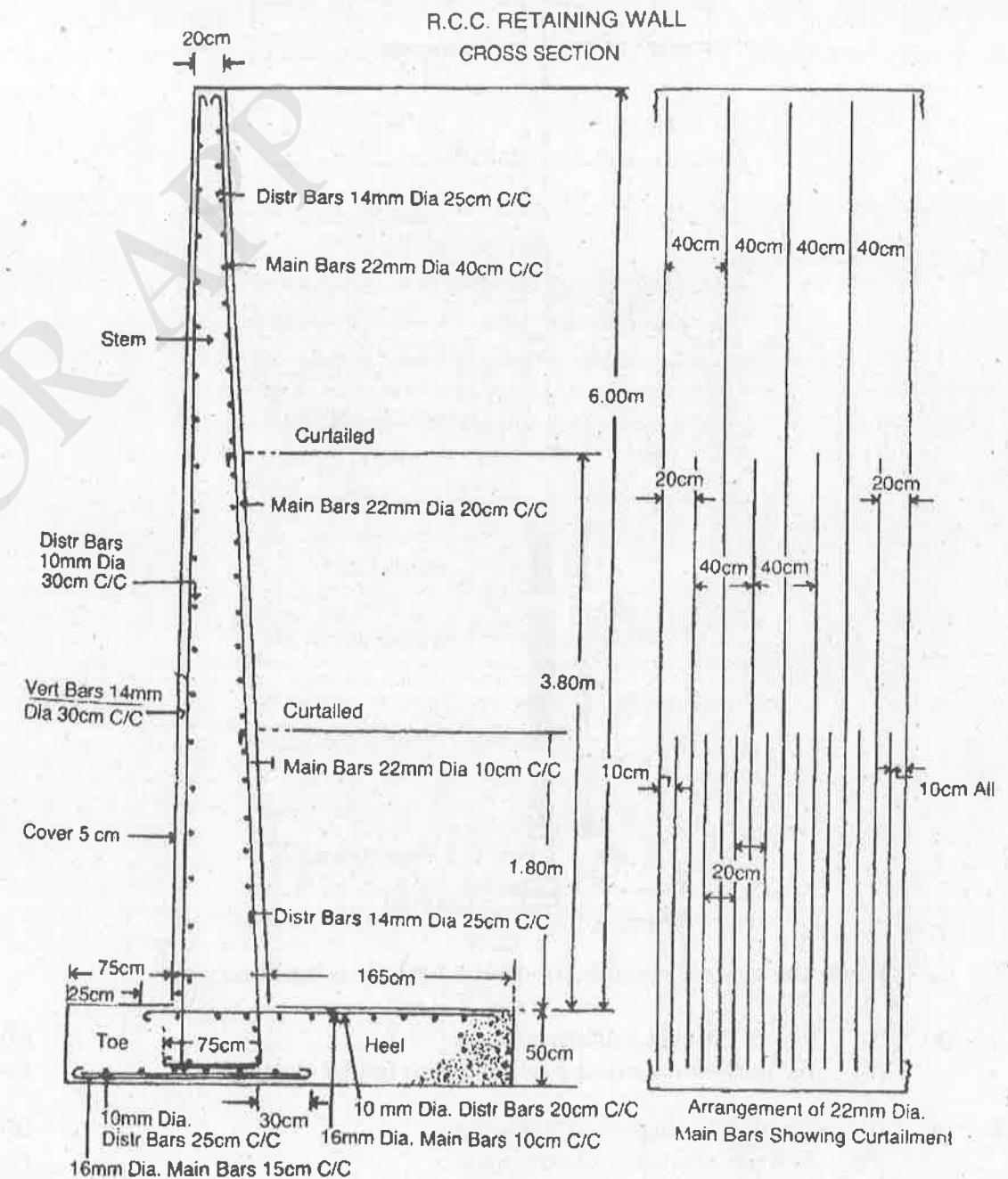
Estimate the following quantity for the plan of a single room building of 5m × 4m and sections represents the cross sections of the walls with foundation. (i) Earthwork in excavation in foundation, (ii) Concrete in foundation, (iii) Brickwork in foundation and plinth and (iv) Brickwork in superstructures.



Or

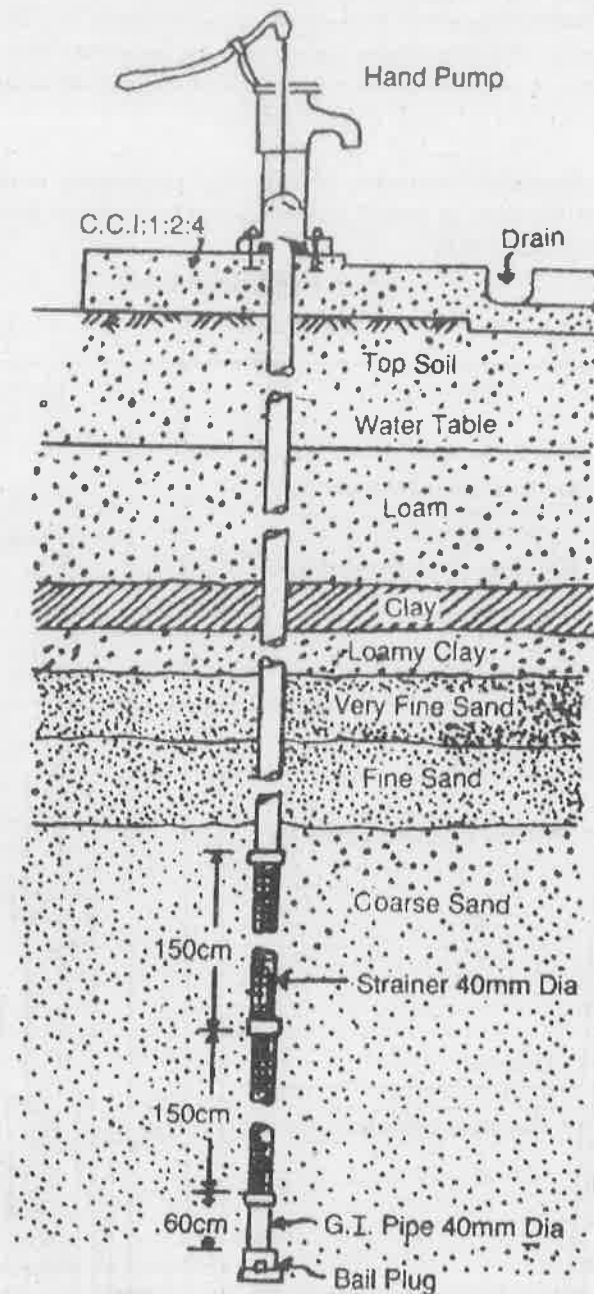
- (b) (i) The arch of a culvert subtends an angle of 120° at the center. The span of the arch is 5m and the thickness of the arch is 50cm. The length of the arch is from face to face. Calculate the quantities of arch masonry work and cement plastering in the soffit of arch. (8)
- (ii) An arch of 2.5m span subtends an angle of 80° at the center. The thickness of arch is 30cm and the breadth of wall is 40cm. Calculate the quantity of arch masonry work. (5)

12. (a) Prepare a detailed estimate of a R.C.C retaining wall of 25 m in length whose cross section is given below. Steel bars in reinforcement shall have to be taken separately.



Or

- (b) Prepare a detailed estimate of a 40mm diameter tube well 40m deep from the given drawing. Length of the strainer is 3 meter. Assume suitable rates.

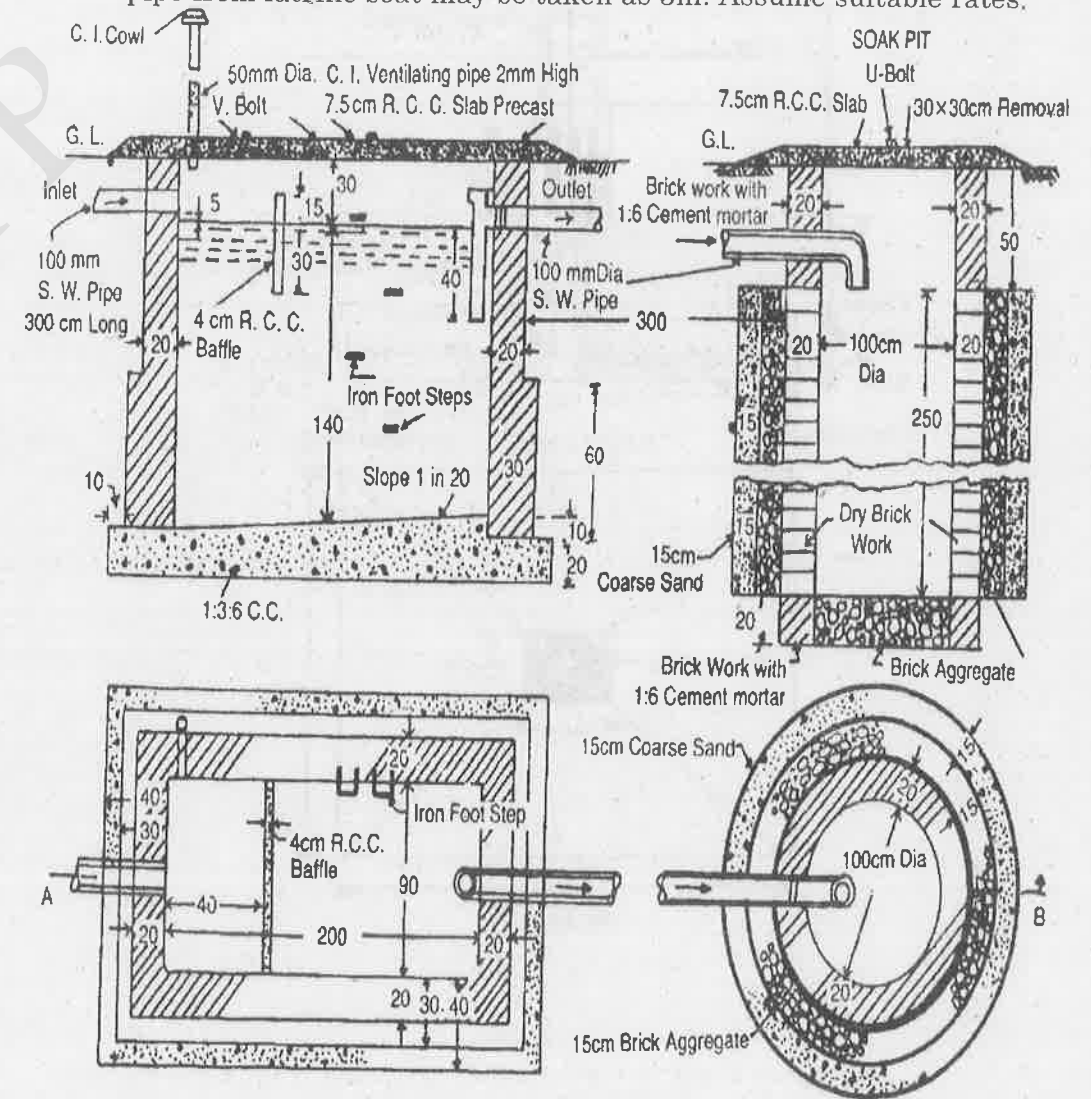


13. (a) Write the general specifications of a first class building.
Or
(b) (i) Recall the types of contracts. (5)
(ii) Write the important particulars in tender documents. (8)
14. (a) (i) Recall the purpose of valuation. (6)
(ii) Rewrite the types of outgoings. (7)
Or
(b) Explain the methods of calculating depreciation.

15. (a) Reproduce the report on the estimate for the construction of a culvert.
Or
(b) Write the report on estimate for the construction of residential building.

PART C — (1 × 15 = 15 marks)

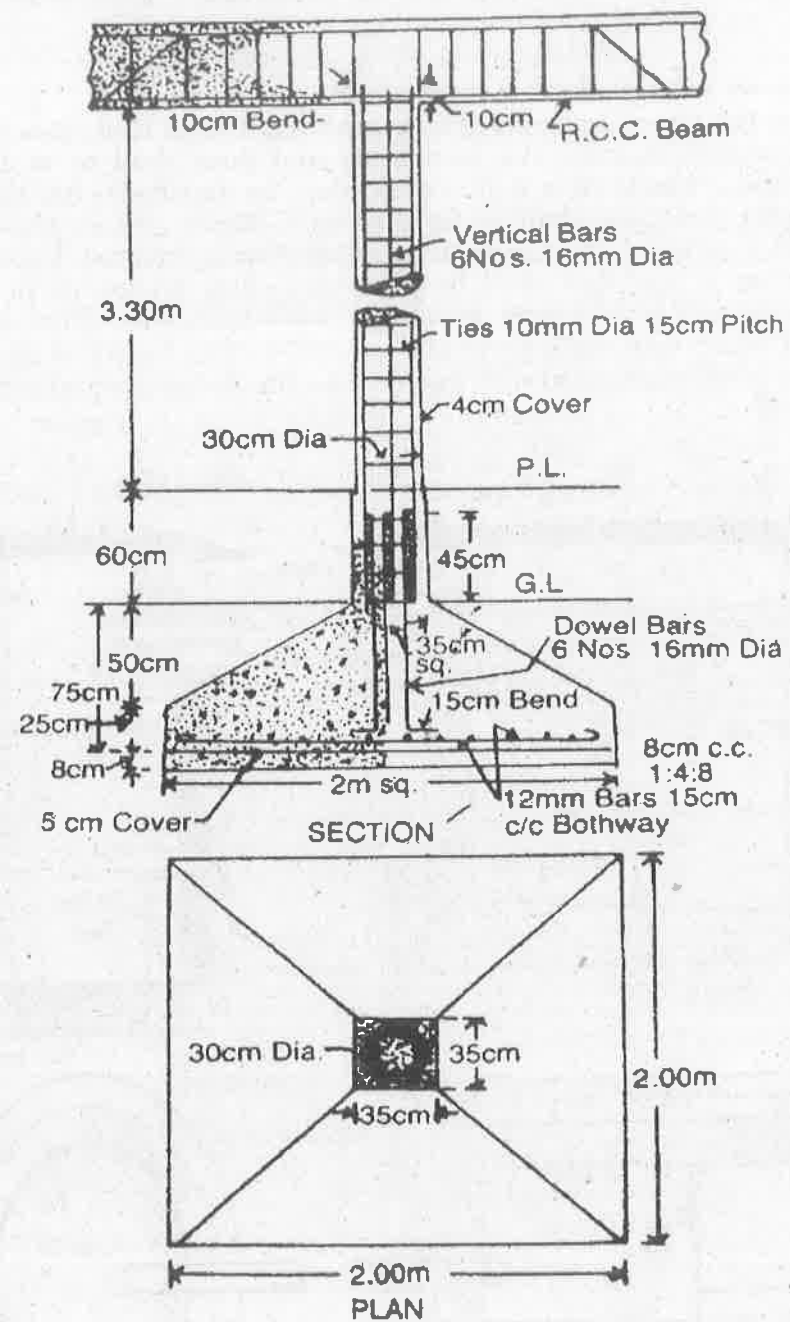
16. (a) Prepare a detailed estimate of a septic tank with soak — pit for 25 users from the given drawings. Septic tank shall be of first class brickwork in 1:4 cement mortar, the foundation and floor shall be of 1:3:6 cement concrete. Inside of a Septic tank shall be finished with 12mm cement plaster and floor shall be finished with 20mm cement plaster with 1:3 mortar mixed with standard water proofing compound. Upper and lower portion of soak-pit shall be of second class brickwork in 1:6 cement mortar and middle portion shall be of dry brickwork. Roof covering slabs and baffle wall shall be of precast R.C.C. The length of the connecting pipe from latrine seat may be taken as 3m. Assume suitable rates.



PLAN
All Dimensions in Centimetre unless otherwise Specified.

Or

Prepare a detailed estimate of a R.C.C. column with foundation footing from the given drawing.



Reg. No. :

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Question Paper Code : 81040

02/11/16

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2016.

Seventh Semester

Civil Engineering

CE 6704— ESTIMATION AND QUANTITY SURVEYING

(Regulations 2013)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What are the two main methods used to building estimate?
2. Define Carpet area and Circulation area.
3. What are the different methods to calculate quantity of earthwork for roads?
4. What are the main components of culvert?
5. Write down the duties of Quantity Surveyor?
6. What is meant by tender?
7. How market value is arrived for a property?
8. What is book value of the property?
9. Define Contract and Agreement.
10. What are the points need to be considered in report preparation?

PART B — (5 × 16 = 80 marks)

11. (a) Estimate in detail the quantities of the following items of work in a residential building shown in the accompanying Figure 1.

- (i) Earthwork excavation in foundation (4)
- (ii) Lime Concrete in foundation CM 1:6 (4)
- (iii) Plastering CM 1:4 for all interior surfaces of walls 12 mm thick. (4)
- (iv) Plastering of Ceiling and Flooring tiles. (4)

CROSS-SECTION OF TWO-ROOMED BUILDING

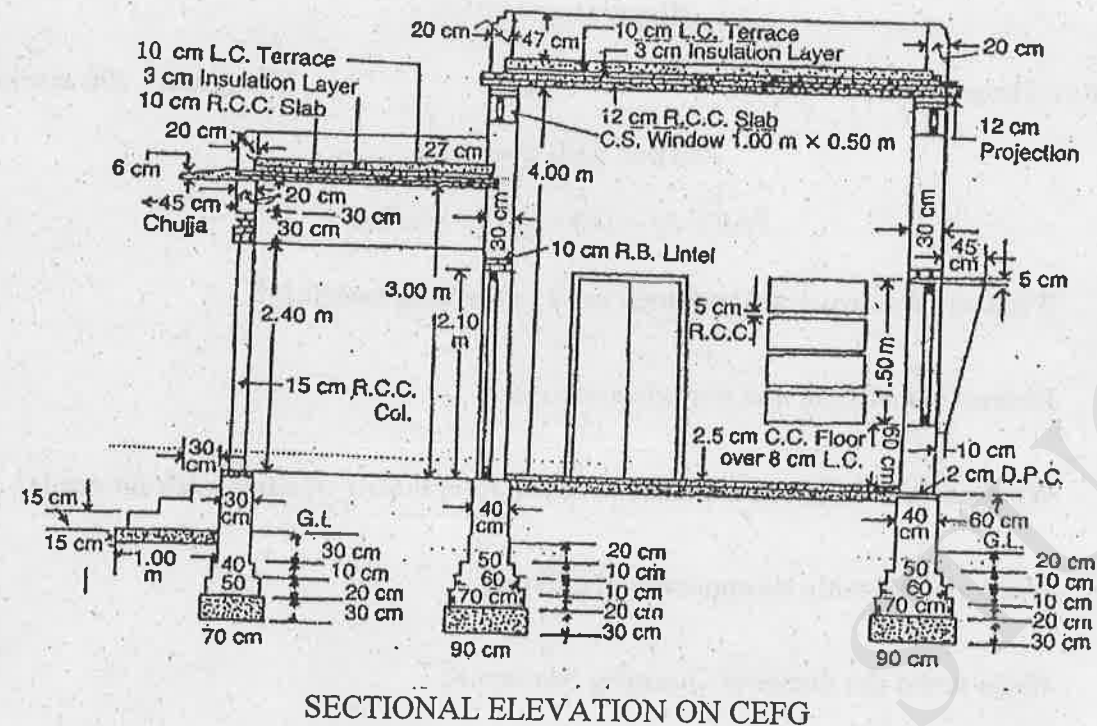


Fig. 1 Two Room Building

TWO-ROOM BUILDING WITH FRONT VERANDAH

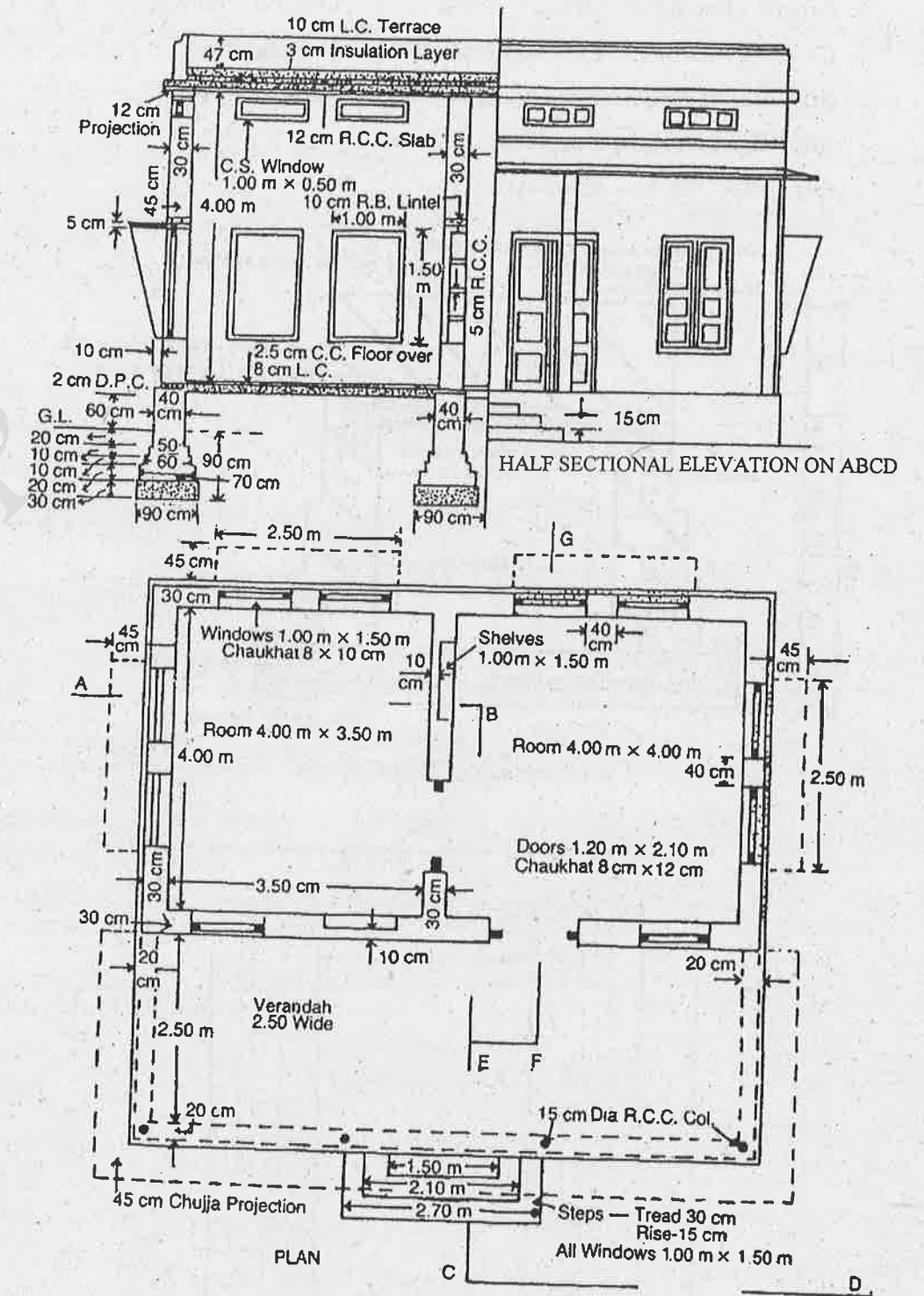


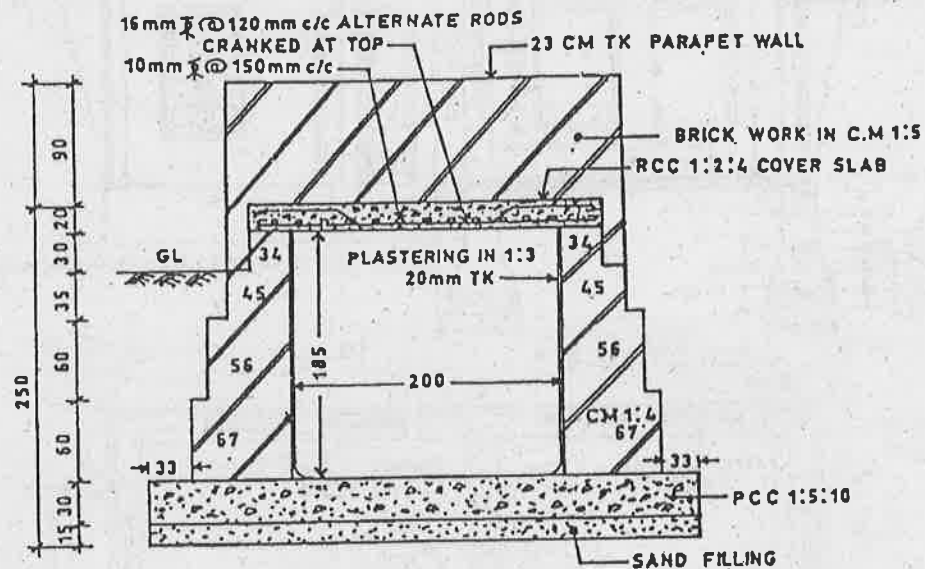
Figure 1

Or

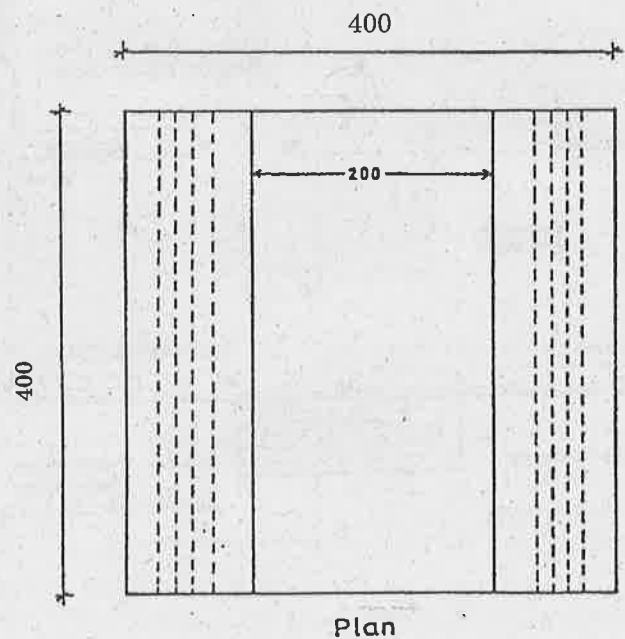
- (b) Explain in detail any four types of estimate.

(16)

12. (a) Estimate in detail the quantities of the following items of work in a box culvert shown in figure. 2
- (i) Earthwork in excavation and PCC for foundation (4)
 - (ii) Plastering in inner walls of culvert with CM 1:4 (4)
 - (iii) Brickwork in foundation CM 1:4 (4)
 - (iv) RCC 1:2:4 — cover slab. (4)



Cross section of Box Culvert



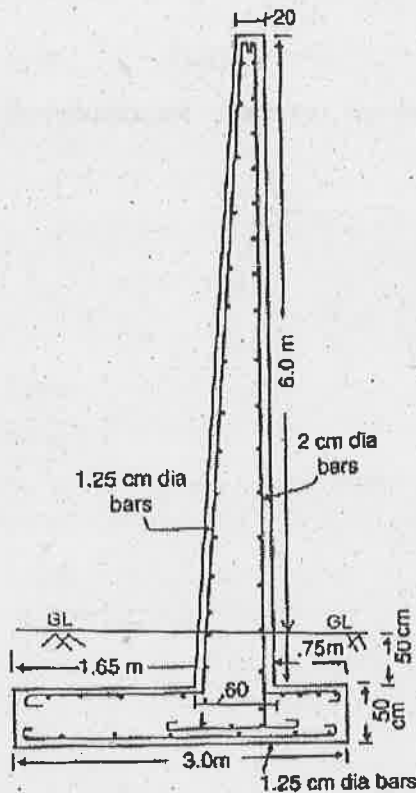
Plan

All dimensions are in cms.

Box Culvert — Figure 2.

Or

- (b) Estimate in detail the quantities of the following items of work for a retaining wall of length 30-metre shown in figure 3.
- (i) Earthwork in excavation (3)
 - (ii) RCC 1:2:4 base (3)
 - (iii) RCC 1:2:4 Stem (3)
 - (iv) % of Steel Reinforcement and (3)
 - (v) Plastering above ground level. (4)



Retaining Wall — Figure 3

13. (a) Using the current schedule of rates for materials and labours prepare data for the following items of work :
- (i) Plain Cement Concrete 1:5:10 for 1 m³ (8)
 - (ii) Brickwork in foundation with 20 × 10 × 10 cm bricks with CM 1:6 for 10 m³. (8)
- Or
- (b) Write down the general specification for a first class building. (16)

14. (a) Calculate the standard rent of a building with the following data Cost of land: Rs. 7,00,000, Cost of building: Rs. 16,00,000 Expected life of the building is 65 years. Returns expected 5% on land and 8% on building. Annual repair 1% on the cost of building. Sinking fund on 4% interest basis on 90% of the cost of building. Other outgoing 30% of the return from the building. (16)

Or

- (b) Mention the various methods of valuation and explain. (16)

15. (a) Write report to accompany an estimate for a residential for a executive engineer. (16)

Or

- (b) Prepare a report on estimate for construction of a road on national highway. (16)

12. a) Prepare a detailed estimate of a septic tank with soak pit for 40 users from the given drawings Fig. 3.

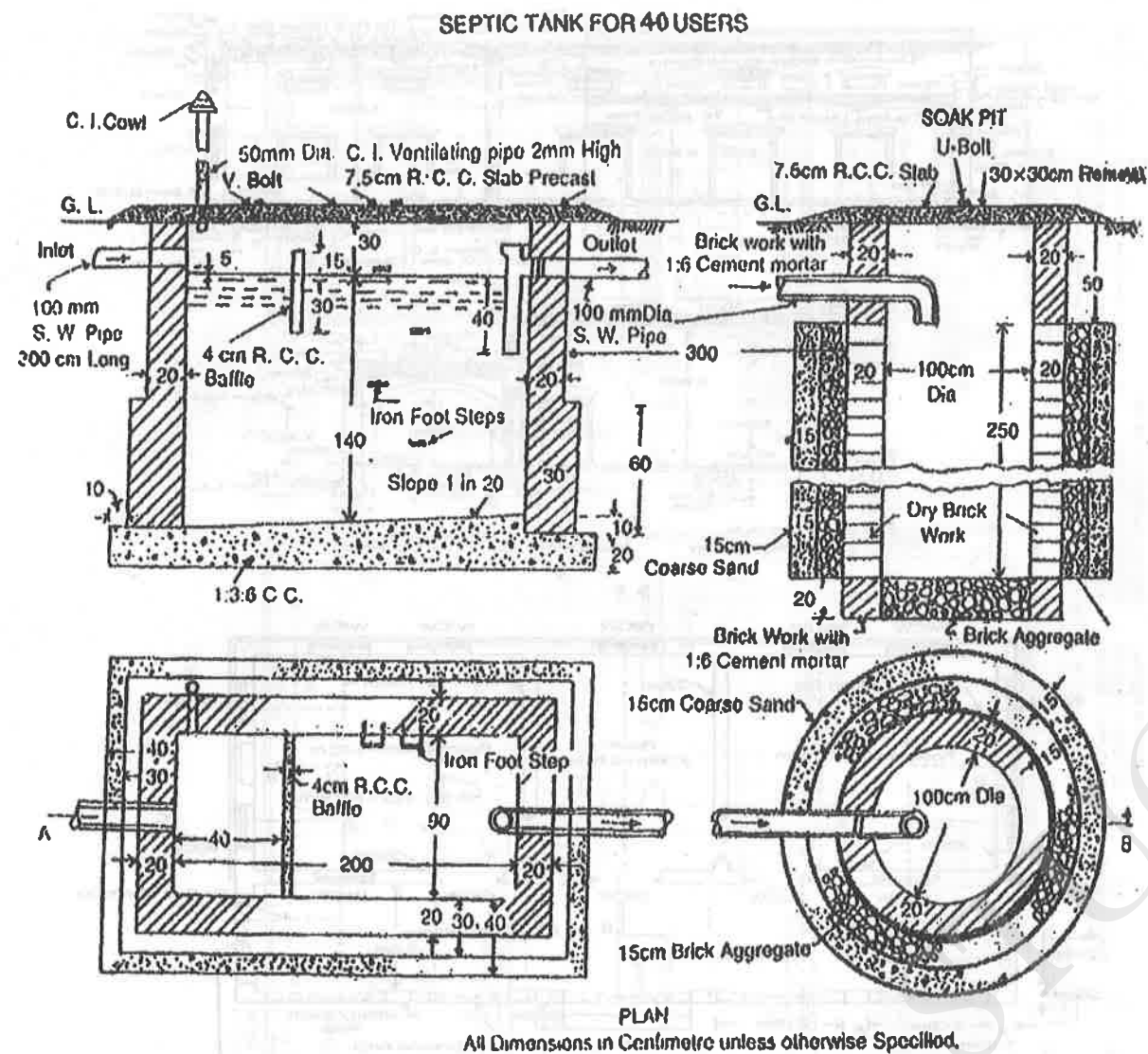


Fig. (3)

- i) Earth work excavation. (4)
- ii) Cement concrete 1 : 3 : 6. (4)
- iii) First class brick work in 1 : 4 cm in septic tank. (4)
- iv) 100 mm dia S.W. pipe. (4)

(OR)

- b) Prepare a detailed estimate of as R.C.C. Retaining wall of 30 meters in length whose cross section is given in Fig .4. Steel bars in reinforcing shall have to be taken separately. (16)

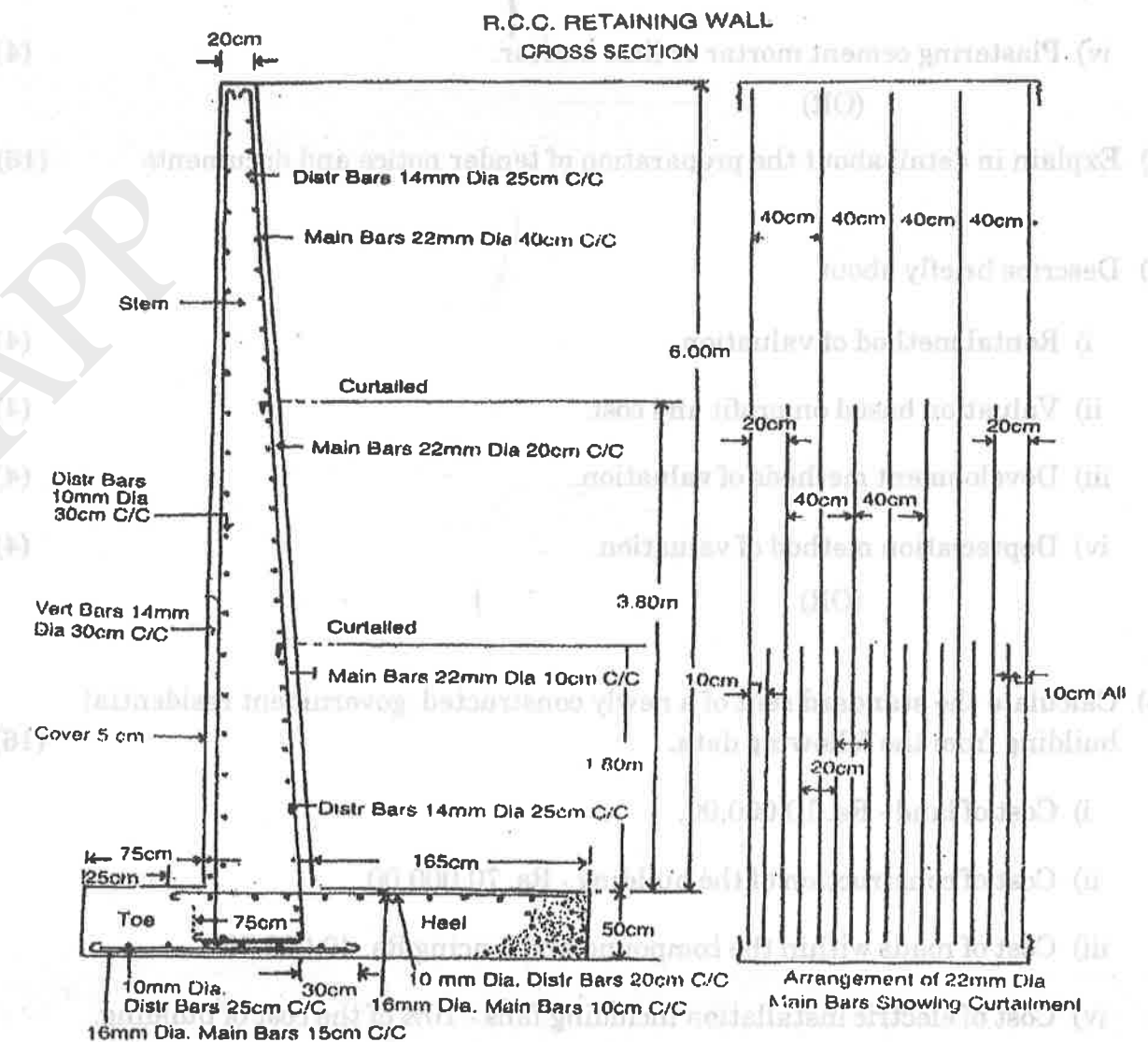


Fig. (4)

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13. a) Describe the detailed specifications of various items of works for the following :

- i) Reinforced cement concrete. (8)
- ii) Colour washing. (2)
- iii) Brickwork I class. (2)
- iv) Plastering cement mortar or lime mortar. (4)

(OR)

b) Explain in detail about the preparation of tender notice and documents. (16)

14. a) Describe briefly about

- i) Rental method of valuation (4)
- ii) Valuation based on profit and cost. (4)
- iii) Development methods of valuation. (4)
- iv) Depreciation method of valuation. (4)

(OR)

b) Calculate the standard rent of a newly constructed government residential building from the following data. (16)

- i) Cost of land - Rs. 10,000.00,
- ii) Cost of construction of the building - Rs. 70,000.00
- iii) Cost of roads within the compound and fencing Rs. 40,000.00
- iv) Cost of electric installation including fans - 10% of the cost of building.
- v) Cost of water supply and sanitary - 15% of the cost of building.
- vi) Municipal House Tax - Rs. 1300.00 per annum.
- vii) Property tax - Rs. 660.00 per annum.



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15. a) Discuss in detail about the report preparation for estimation of culvert and roads. (16)

(OR)

b) Describe the principles for the report preparation of tube well and open well. (16)

Reg. No. :

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Question Paper Code : 20285

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2018.

Seventh Semester

Civil Engineering

CE 6704 — ESTIMATION AND QUANTITY SURVEYING

(Regulations 2013)

(Common to PTCE 6704 –Estimation and Quantity Surveying for B.E. Part-Time –
Sixth Semester – Civil Engineering – Regulations 2014)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Name the types of estimate.
2. Briefly explain about preliminary estimate.
3. List out the factors to be considered in design of septic tank.
4. A cement concrete road (1:2:3) is to be constructed over the existing water bound macadam road. The thickness of slab is 10 cm. The length of the road is one km and the width is 3.60 m. Calculate the quantity of cement concrete required.
5. List the types of contract.
6. Define the term arbitration.
7. Define the Gross income.
8. List out the information should contain a contract document.
9. State the principles of report preparation.
10. State the basic principles of good report writing.

PART B — (5 × 13 = 65 marks)

11. (a) Prepare the Detailed Estimate for the following items of works are given in Figure Q. 11.
- Earth work in excavation in foundation in ordinary soil (5)
 - Earth work in filling under floors (4)
 - Cement concrete in foundations. (4)

Or

- (b) The Plan and sectional elevation of the building are given in Figure Q. 11. Estimate the quantities for the following items of works.
- First class brick work in foundation and plinth in cement mortar (1:6) (8)
 - D.P.C (2.5 cm thick) with cement mortar (1:1.5:3). (5)

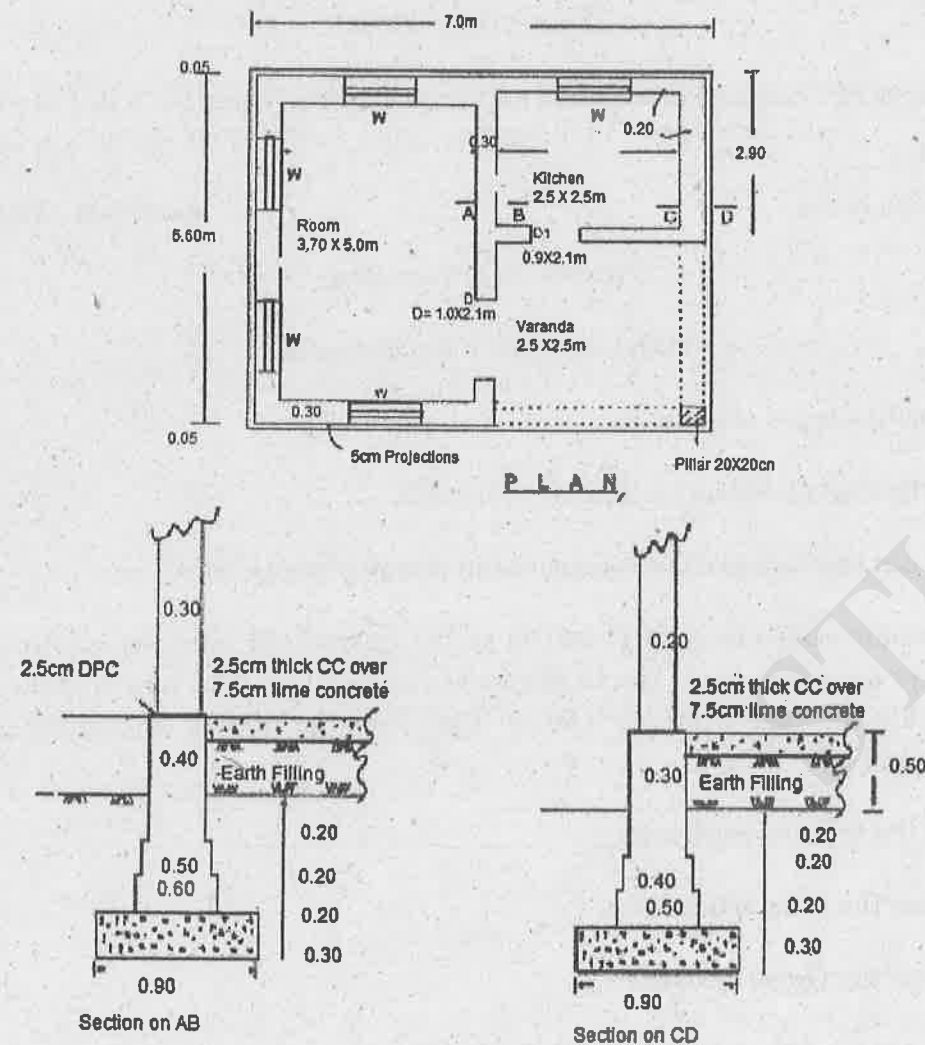


Figure Q. 11
(All Dimensions are in m)

12. (a) The Plan and cross section of the septic tank are given in Figure Q. 12. Estimate the quantities for the following items of works.
- Earth work in excavation upto GL (3)
 - Brick masonry in CM 1:4 for side walls (7)
 - C.C for (1:4:8) bed for foundation. (3)

Or

- (b) The Plan and cross section of the septic tank are given in Figure Q. 12. Estimate the quantities for the following items of works.
- Plastering with C.M (1:4) with 20 mm thick (6)
 - R.C.C. (1:2:4) using 20 mm HBG metal (3)
 - Earth filling with excavated soil around the brick work. (4)

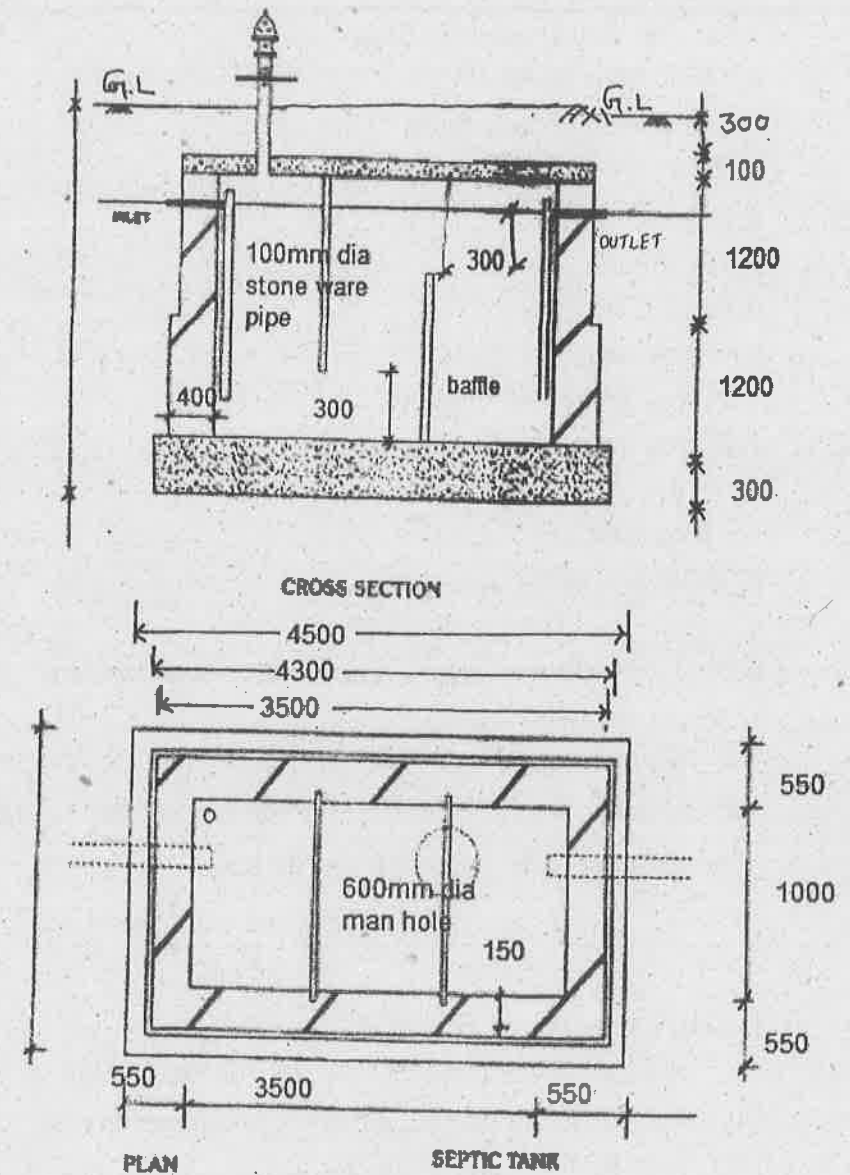


Figure Q. 12
(All Dimensions are in mm)

Calculate the Quantity of material for the following item of works.

- (i) R.C.C. (1:2:4) for 20 m³ of work (4)
- (ii) R.C.C. (1:3:6) for 15 m³ of work (4)
- (iii) C.M. (1:4) for 1 m³ of work (3)
- (iv) CM (1:6) for 1 m³ of work. (2)

Or

Prepare a data sheet and calculate the cost of the following item of works:

- (i) Plastering with cement mortar (1:4), 20 mm thick unit-10 m²
 0.21 m³ C.M. (1:4)
 0.66 Nos. Brick layer I class
 1.54 Nos. Brick layer II Class
 0.5 Nos. Men Mazdoors
 3.2 Nos. Women mazdoors
 L.S. sundries.
- (ii) R.R. Masonry in C.M. (1:6) – 1 m³
 1.1 m³ Rough stones
 0.34 m³ C.M. (1:6)
 0.54 Nos. Mason I Class
 1.26 Nos. Mason II Class
 1.40 Nos. Men mazdoors
 1.40 Nos. Women mazdoors
 L.S. Sundries.

Lead Statement of materials :

S.No.	Materials	Cost at source Rs. – Ps.	Per	Lead in Km	Conveyance Charges per km
1	Rough stone	260.0	m ³	18	5.00 per m ³
2	Sand	12.0	m ³	25	4.00 per m ³
3	Cement	2100.0	10 kN		
			or	Local	
			1 tonne		

Labour Charges :

- (1) Mason / Brick layer I Class Rs. 100.00 per day
- (2) Mason /Brick layer II class Rs. 80.00 per day
- (3) Men mazdoor Rs. 60.00 per day
- (4) Women mazdoor Rs. 60.00 per day
- (5) Mixing charges of cement mortar Rs. 16.00 per m³.

14. (a) Examine in detail about various methods of calculations of depreciation.

Or

- (b) Calculate the standard rent of a government residential building newly constructed from the following data :
 - (i) Cost of land Rs. 10,000.00
 - (ii) Cost of construction of building Rs. 40,000.00
 - (iii) Costs of roads with in compounds and fencing Rs. 2,000.00
 - (iv) Cost of electric installation including fans – 10% of the cost of building
 - (v) Municipal house tax Rs. 400.00 per annum
 - (vi) Water Tax Rs. 250.00 per annum
 - (vii) Property tax Rs. 140.00 per annum.

15. (a) Summarize the general principles for report preparation also explain the structure of report.

Or

- (b) Examine the report on estimation for construction of water supply and sanitary work.

PART C — (1 × 15 = 15 marks)

16. (a) Prepare the detail estimate for the 'soak pit' as shown in Figure Q. 16 (a).

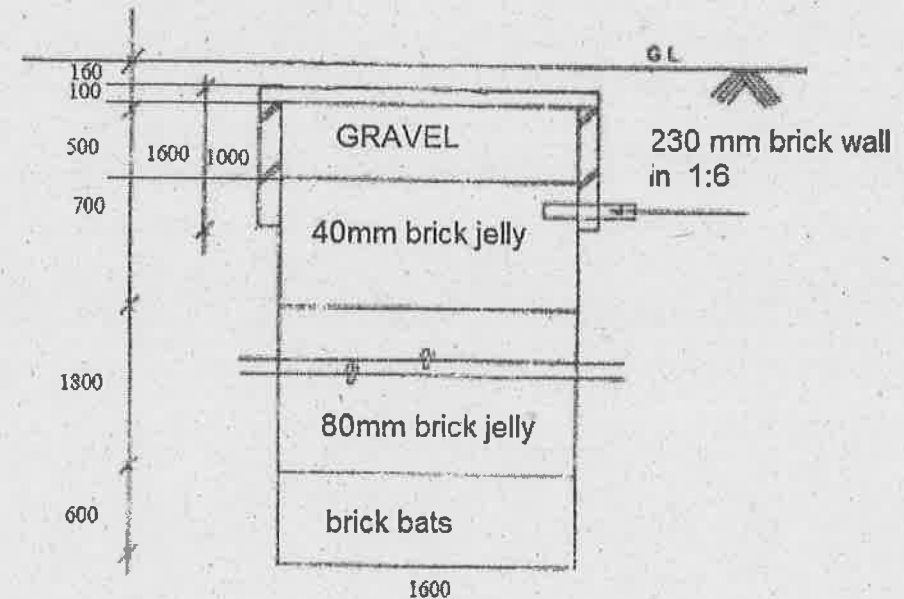


Figure Q. 16 (a)

(All Dimensions are in mm)

Or

Work out the brick work and cement plaster to soffit of an arch as per data given in Figure Q. 16 (b).

- i) Length of arch from face to face = 11 m
- ii) Clear span = 3m
- iii) Rise = 0.86 m and Thickness of arch = 0.40 m.

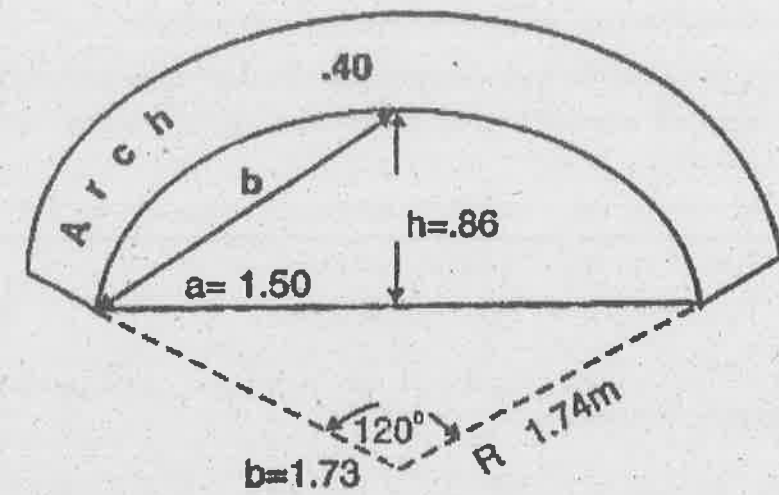


Figure Q. 16 (b)

(All Dimensions are in mm)



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Question Paper Code : 91319

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/ DECEMBER 2019

Seventh Semester

Civil Engineering

CE 6704 – ESTIMATION AND QUANTITY SURVEYING

(Regulations 2013)

(Also common to PTCE 6704 – Estimation and Quantity Surveys for B.E.
(Part – Time) Sixth Semester – Civil Engineering Regulations 2014)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions.

PART – A

(10×2=20 Marks)

1. Define estimate.
2. What are the units of measurement for
 - i) Weathering course
 - ii) Coping on the parapet.
3. What is aqueduct ?
4. What are the components of a culvert ?
5. What do you mean by analysis of rates ?
6. What is specification ?
7. Define valuation.
8. Define the Capitalized value.
9. What is report ?
10. State the requirement of a report.

PART – B

(5×13=65 Marks)

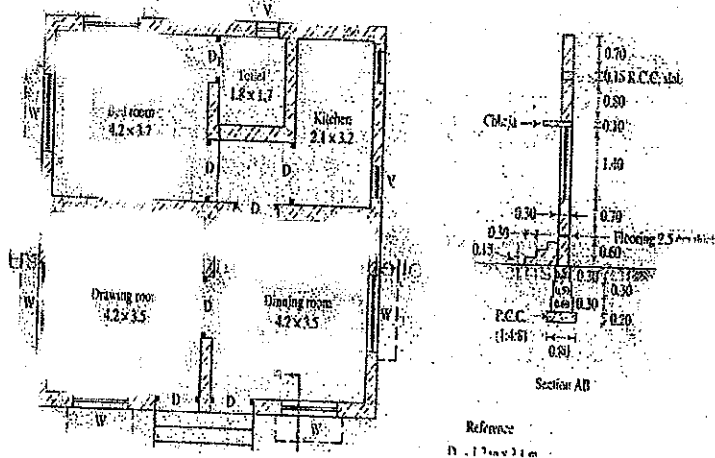
11. a) Estimate the quantities of the following items of work.
 - i) Earth work excavation
 - ii) Sand filling in plinth

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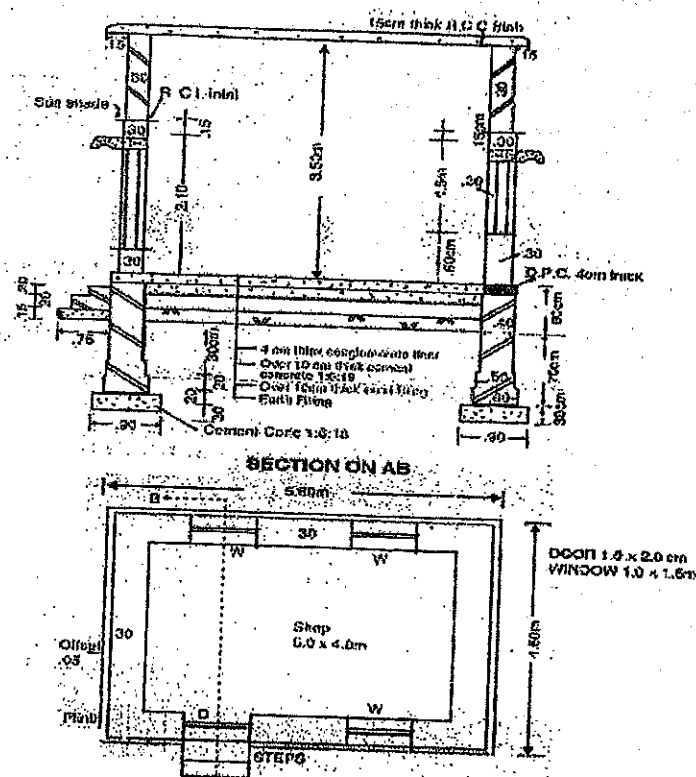
iii) PCC 1:4:8 in foundation.

A SINGLE STOREYED RESIDENTIAL BUILDING
Scale 1 cm = 1 m



(OR)

- b) Estimate the quantities of the following items of work.
- Damp proof course 4 cm thick (1:2:4).
 - Brick work in cement mortar in super structure.
 - R.C.C. (1:2:4)

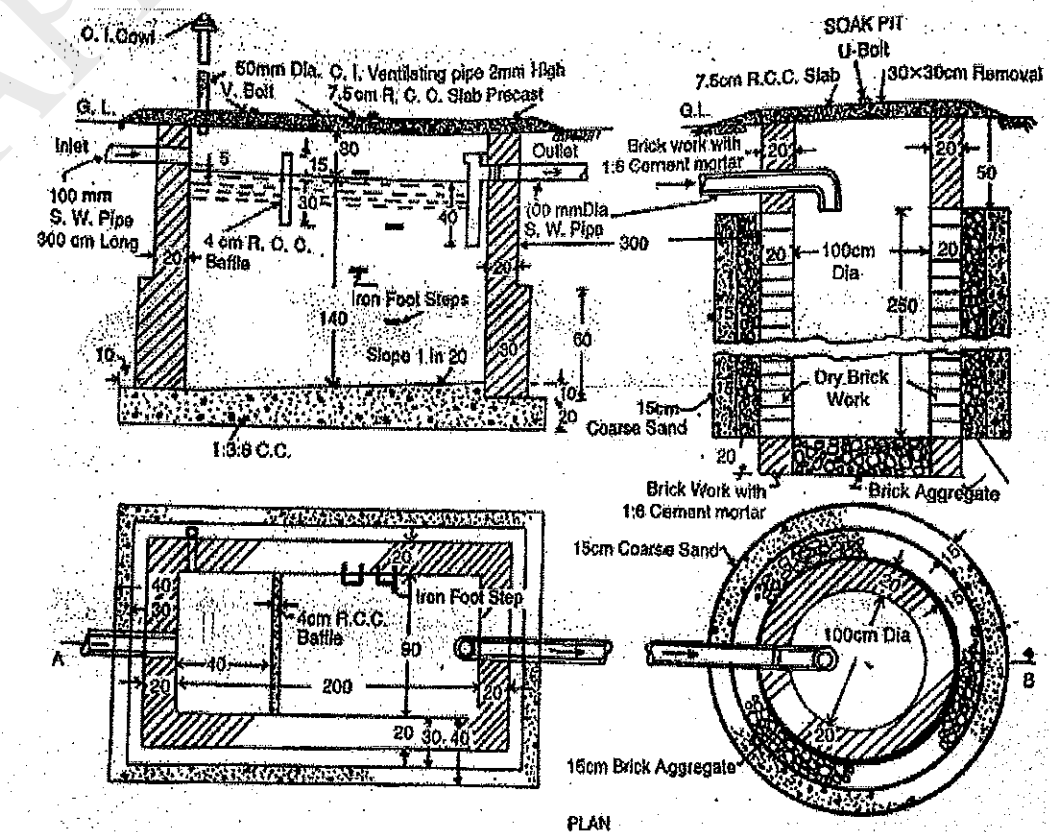


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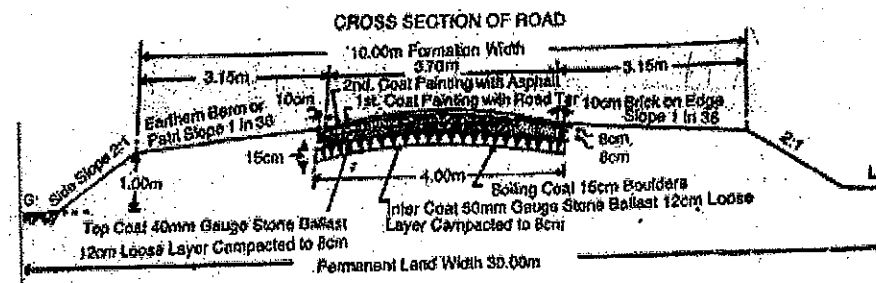
12. a) Prepare a detailed estimate of a septic tank with soak pit for 25 users from the given drawing.

Septic tank shall be of I class brick work in 1:4 cement mortar; The foundation and floor shall be 1:3:6 cement concrete. Inside of septic tank shall be finished with 12 mm cement plaster and floor shall be finished with 20 mm cement plaster with 1:3 mortar mixed with water proofing compound. Upper and lower portion of soak pit shall be of II class brick work in 1:6 cement mortar and middle portion shall be of dry brick work. Roof cover slabs and baffle wall shall be of precast R.C.C. The length of the connecting pipe from latrine seat may be taken as 3 m.



(OR)

- b) Prepare a detailed estimate for the construction of a new state highway for 1 km length. The formation width of road is 10 m, average height of bank is 1 m and side slope 2:1. The metalled width is 3.7 m and three coats of metalling are to be provide as per cross section shown in fig. The surface shall be finished with two coats of painting.



13. a) Write the detailed specification for RCC work proportion 1:2:4.

(OR)

- b) i) Describe the following.

a) E-tender b) Arbitration.

- ii) What informations should a contract document contain ?

14. a) What are the important factors influencing the value of building ? Explain.

(OR)

- b) i) Write the necessity of valuation.

- ii) Describe the following :

Year's purchase
sinking fund.

15. a) Write a report on estimates for the construction of residential building.

(OR)

- b) Write a report on estimates for the construction of a culvert.

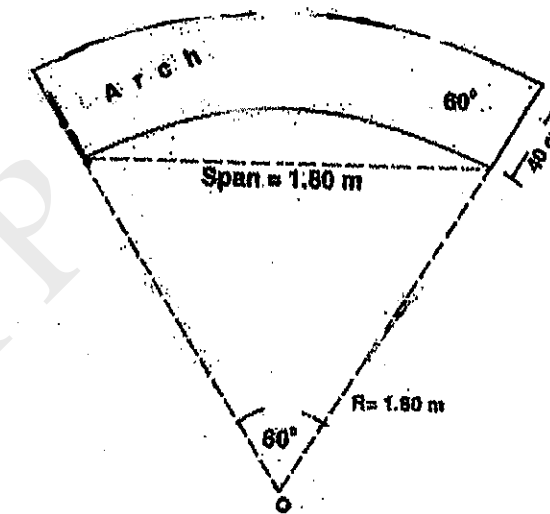
PART - C

(1×15=15 Marks)

16. a) What are the types of contract ? Explain.

(OR)

- b) i) Calculate the quantities of brick work in an arch over 1.8 m span opening as shown in fig. The arch is 40 cm thick and the breadth of the wall is 40 cm.



- ii) Work out the Brick work and cement plaster to soffit of an arch as per data given below.

Length of arch from face to face = 11m

Clear span = 3.0 m

Rise = 0.86 m

Thickness of arch = 0.4 m