

Enrollment No.....



Faculty of Engineering
End Sem (Odd) Examination Dec-2018
CE3CO15 Quantity Surveying & Estimation

Programme: B.Tech.

Branch/Specialisation: CE

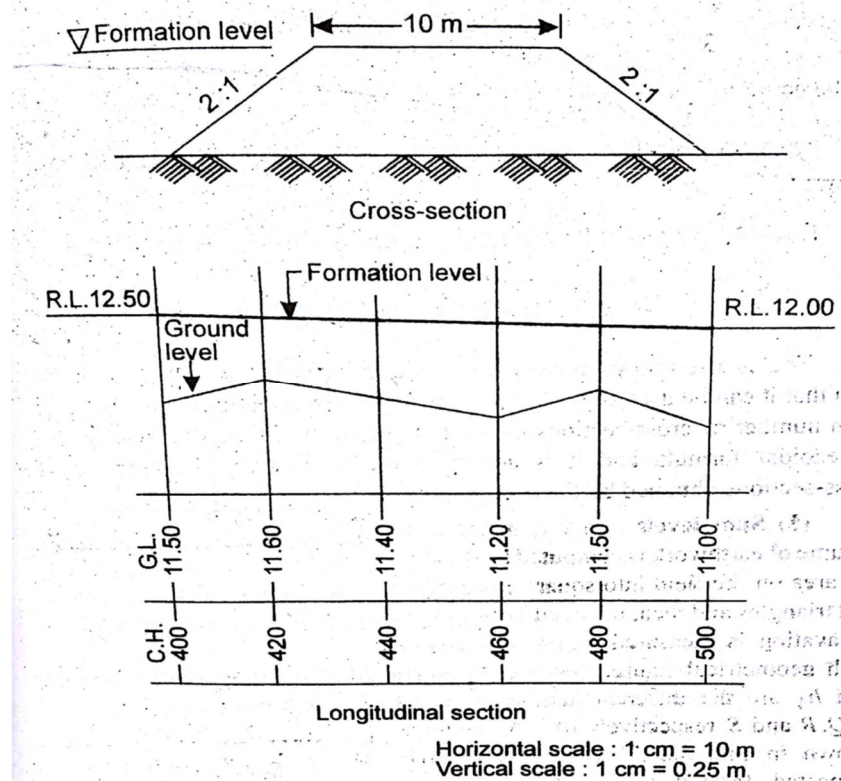
Duration: 3 Hrs.**Maximum Marks: 60**

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d.

- Q.1 i. The useful part of liveable area of a building is known as 1
 (a) Carpet area (b) Circulation area
 (c) Horizontal circulation area (d) Plinth area
- ii. Estimate expected to be least accurate is 1
 (a) Supplementary estimate (b) Plinth are estimate
 (c) Detailed estimate (d) Revised estimate
- iii. The expected out turn of cement concrete 1:2:4 per mason per day is 1
 (a) 1.5 m³ (b) 2.5 m³ (c) 3.5 m³ (d) 5.0 m³
- iv. The expected out turn for earthwork in excavation in ordinary soil per mazdoor per day is 1
 (a) 1 cum (b) 2 cum (c) 3 cum (d) 4 cum
- v. In measuring from work no deduction is made for opening up to 1
 (a) 1.0 sq.m. (b) 0.5 sq.m. (c) 0.4 sq.m. (d) 0.01 sq.m.
- vi. One cubic metre of mild steel weighs about 1
 (a) 9850 kg (b) 7850 kg (c) 9850 kg (d) 6850 kg
- vii. The detention period in a septic tank is assumed - 1
 (a) 20 minutes (b) 25 minutes (c) 30 minutes (d) 40 minutes
- viii. Original cost of property minus depreciation is 1
 (a) Scrape Value (b) Salvage Value
 (c) Reliable Value (d) Book Value
- ix. A tender is advertised in _____ 1
 (a) Newspapers (b) Business environment
 (c) Domestic markets (d) Sellers
- x. The process of evaluating cost of construction of a project is called- 1
 (a) Estimate (b) Tender (c) Contract (d) Actual cost

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- Q.2 i. What are various purposes of estimation? **2**
 ii. What are the Schedule of rates? **3**
 iii. What are Principles of estimating, Explain Various types of Estimate? **5**
 OR iv. Write short notes on- **5**
 (a) Contingencies (b) Work charge establishment
- Q.3 i. Explain the importance of rate analysis? **2**
 ii. Workout the rate analysis of the Brickbat lime concrete (proportion 1:2:4) **8**
 for foundation and plinth.
- OR iii. Workout the rate analysis of the Providing and laying mild steel **8**
 reinforcement.
- Q.4 i. Draw the forms of measurement sheet and abstract sheet for building **3**
 work.
 ii. Calculate the volume of earthwork for a proposed road having formation **7**
 width 10 m side slope 2:1 using mid-sectional area method. The cross-
 section and longitudinal section of a road is shown in fig. below.



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- OR iii. Prepare a preliminary estimate of a building having Plinth area equal to **7**
 1600 sq. m. given that:
 (a) Plinth area rate – Rs. 2000/- per sq. m.
 (b) Extra for Architectural work – 3/2% of Building cost.
 (c) Extra for Electrical installation (10), +Water supply and sanitary
 installations (6) = 10+6 =16 % of building cost.
 (d) Extra for other services – 8% of the building cost.
 (e) Contingencies and Supervision charges 10%
- Q.5 i. Explain Fair Market Value, Book Value, Salvage Value and Scrap Value. **4**
 ii. What is sinking fund and depreciation, Describe Methods of calculating **6**
 depreciation?
- OR iii. A three – storied building is standing on a plot of land measuring **6**
 800sq.m. The plinth area of each storey is 400sq.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.1500.00 per month. Workout the
 capitalized value of property on the basis of 6% net yield. For sinking
 fund 3% compound interest may be assumed. Cost of land may taken RS.
 40.00 per sq.m. Other data required may be assumed suitably.
- Q.6 Attempt any two:
 i. How Tenders are Invited, Describe Pre and post qualification of **5**
 contractors and tender documents.
 ii. Define Contract and Explain Types of Contracts. **5**
 iii. What is arbitration, what are the various qualities and powers of an **5**
 Arbitrator?

Marking Scheme
CE3CO15 Quantity Surveying & Estimation

- Q.1 i. The useful part of liveable area of a building is known as **1**
(a) Carpet area
- ii. Estimate expected to be least accurate is **1**
(b) Plinth are estimate
- iii. The expected out turn of cement concrete 1:2:4 per mason per day is **1**
(d) 5.0 m³
- iv. The expected out turn for earthwork in excavation in ordinary soil per mazdoor per day is **1**
(c) 3 cum
- v. In measuring from work no deduction is made for opening up to **1**
(c) 0.4 sq.m.
- vi. One cubic metre of mild steel weighs about **1**
(b) 7850 kg
- vii. The detention period in a septic tank is assumed - **1**
(c) 30 minutes
- viii Original cost of property minus depreciation is **1**
(d) Book Value
- ix. A tender is advertised in _____ **1**
(a) Newspapers
- x. The process of evaluating cost of construction of a project is called- **1**
(a) Estimate
- Q.2 i. What are various purposes of estimation **2**
With explanation 2 points
Without explanation 4 points
- ii. Schedule of rates **3**
- iii. Principles of estimating **5**
Types of Estimate 2 marks
3 marks
- OR iv. Write short notes on- **5**
(a) Contingencies 2.5 marks
(b) Work charge establishment 2.5 marks
- Q.3 i. Definition importance of rate analysis **2**

	Qty. or No.	Rate (Rs.)	Per	Amount (Rs.)	
Materials :					
Brickbats	10.00cum	500.00	Cu m	5000.00	
Sand	5.00cum	200.00	Cu m	1000.00	
Slanked Lime	2.50cum	500.00	Cu m	1250.00	
				7250.00	2 marks
Labour :					
Mortar mixer(1:2)			Lump	350.00	
Male coolie	3 nos	140.00	Day	420.00	
Female coolie	6 nos	140.00	Day	840.00	
Bhisti	2 nos	130.00	Day	260.00	
Sundries				10.00	2 marks
Labour cost				1880.00	1 mark
Add material cost				7250.00	
				9130.00	
10% contractor's profit				913.00	
1.5% water charge				136.00	
Rate per 10 cu m				10179.95	
Rate per cu m				1018.00	
Approximate to				1020.00	3 marks

OR iii. Rate analysis of the Providing and laying mild steel reinforcement. **8**

	Qty or No.	Rate (Rs.)	Per	Amount (Rs.)	
Materials :					
Mild steel	1.00	3400.00	Quin	3400.00	2 marks
Wastage @2%	quin			68.00	
Binding wires		30.00	Kg	30.00	
Sundries	1.00kg			12.00	
				3510.00	
Labour :					
Labour		275.00	Quin	275.00	

Sundries	1.00 quin			10.00	2 marks
Labour				285.00	
Add material				3510.00	
				3795.00	1 mark
10% contractor's				379.50	
Rate per quin				4174.50	
Approximate to				4175.00	3 marks

- Q.4 i. Draw the forms of measurement sheet 1.5 marks **3**
Abstract sheet for building work. 1.5 marks
- ii. Calculate the volume of earthwork for a proposed road having formation width 10 m side slope 2:1 using mid-sectional area method. **7**
- OR iii. Prepare a preliminary estimate of a building having Plinth area equal to 1600 sq. m. given that: **7**
- (a) Plinth area rate – Rs. 2000/- per sq. m. 1 mark
- (b) Extra for Architectural work – 3/2% of Building cost. 2 marks
- (c) Extra for Electrical installation (10), +Water supply and sanitary installations (6) = 10+6 =16 % of building cost. 2 marks
- (d) Extra for other services – 8% of the building cost. 1 mark
- (e) Contingencies and Supervision charges 10% 1 mark
- Q.5 i. Explain Fair Market Value, Book Value, Salvage Value and Scrap Value. **4**
1 mark for each term (1 mark *4)
- ii. Sinking fund 1 mark **6**
Depreciation 1 mark
Methods of calculating depreciation 4 marks
- OR iii. SOL: Gross income per year =1500X12 =Rs. 18,000.00
Outgoing per annum assuming suitable data :
- (a) Reapais at 1/12 of gross income = Rs. 1500.00
- (b) Municipal tax 20% of gross rent = 18000X20/100 = Rs. 3600.00
1 mark
- (c) Property tax 5% of gross rent = 18000X5/100 =900
- (d) Insurance premium @0.5% of gross rent = 18000X.5/100 =90.00

(e) Management charge@6% =18000X6/100 =1080.00 1 mark

(f) Other charge @2% = 18000X2/100 =360.00

1 mark

(g) Sinking = 180000X0.0043 =774.00

1 mark

Total of outgoing per annum = 8304.00

Net annual return = 18000-8304.00 =Rs. 9696.00

Capitalized value of building = 9696X100/6 =Rs. 1,61,600.00

+

Cost of land @Rs. 40.00 per sq m = 800X40 = Rs. 32000.00

Total =Rs. 1,93,600.00

The total value of the whole property is equal to Rs. 1,93,600.00

2 marks

Q.6 Attempt any two:

- i. How Tenders are Invited 1 mark **5**
Pre qualification of contractors 1 mark
Post qualification of contractors 1 mark
Tender documents. 4 marks
- ii. Define Contract 2 marks **5**
Types of Contracts. 3 marks
1 mark for each (1 mark * 3)
- iii. What is arbitration 2 marks **5**
Qualities and powers of an Arbitrator 3 marks
6 points with explanation 0.5 mark each (0.5 mark *6)
