

[4]

OR iii. Estimate the quantity of work for slab and parapet for the slab culvert shown in fig-2. 8

Q.6 Attempt any two:

- i. Differentiate book value, market value, scrap value, salvage value and year's purchase. 5
- ii. Distinguish between depreciation and sinking fund. 5
- iii. Define valuation and state the factors affecting valuation of a building. 5

Total No. of Questions: 6

Total No. of Printed Pages: 4

Enrollment No.....



Faculty of Engineering
End Sem (Even) Examination May-2019
CE2EL02 Advance Estimating and Costing

Programme: Diploma

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. Pick up the incorrect statement from the following 1
 - (a) No deduction is made for the volume occupied by reinforcement
 - (b) No deduction is made for the opening up to 0.1 square metre
 - (c) No deduction is made for the volume occupied by pipes not exceeding 100 square centimetre in cross section
 - (d) None of these
- ii. The total length of a both side cranked bar through a distance D at 45 degree in case of Beam of effective length L, is 1
 - (a) $L+0.42d$ (b) $L+2\times 0.42d$
 - (c) $L-0.42d$ (d) $L-2\times 0.42d$
- iii. Unit of measurement of A.C. sheets is: 1
 - (a) Kg (b) Sq. M. (c) Cu. M. (d) M.
- iv. The unit of measurement is per quintal for the following 1
 - (a) Collapsible gates with rails
 - (b) Rolling shutters
 - (c) Expanded metal
 - (d) Reinforcement in RCC works
- v. The diameter of a domestic sewer pipe is recommended 1
 - (a) 100 mm (b) 150 mm (c) 175 mm (d) 200 mm
- vi. The minimum width of a septic tank is taken 1
 - (a) 70 cm (b) 75 cm (c) 80 cm (d) 90 cm
- vii. For 100 square metre cement concrete 1: 2: 4, 12 centimetre thick slab the quantity of cement required is 1
 - (a) 50 bags (b) 75 bags (c) 100 bags (d) 125 bags

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- viii. Cost of fitting sand fixing is specified for the following sanitary fittings **1**
 (a) Water closets (b) Flushing pipes
 (c) Lavatory basins (d) All of these
- ix. Scrape value of building is taken as _____ of the cost of construction **1**
 (a) 90% (b) 50% (c) 20% (d) 10%
- x. Original cost of property minus depreciation value of the year **1**
 (a) Book value (b) Salvage value
 (c) Rateable value (d) Obsolesce value.

- Q.2 i. Enlist the items of work for casting RCC beam. **3**
 ii. Prepare bar bending schedule for the beam shown in fig-1. **7**

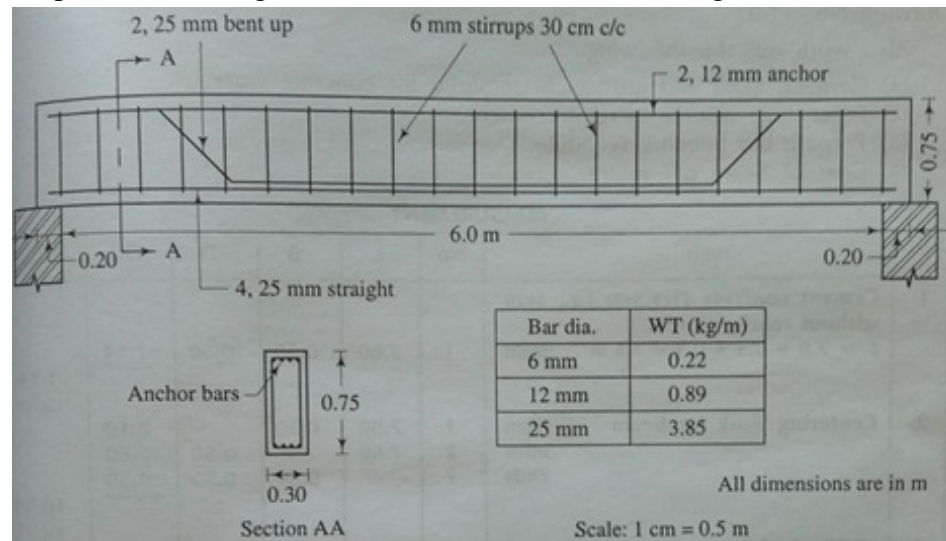


Figure 1

- OR iii. Calculate the quantity of secondary steel for the given beam shown in fig-1. **7**

- Q.3 A shade of size 6 m x 24m is to be provided with trusses of span 6m and rise 2m, at a spacing of 3 m c/c.
 Attempt any two from the following:
- i. Calculate the G.I. steel requirement for the roof in members. **5**
 ii. Propose a proper steel roof truss for the shade draw neat & clean diagram **5**
 showing the various lance of the members.
 iii If the single angle ISA 50x50x6 is used for diagonals & double angles for **5**
 top and bottom chords find the quantity of steel. Including gusset plates &
 rivets.

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- Q.4 Attempt any two
- i. Prepare a detailed report of water supply project for a village of **5**
 population of 10000.
 ii. Explain the importance of septic tank with neat and Labelled sketch. **5**
 iii. Enlist the items of work for an overhead water tank along with units of **5**
 measurement.
- Q.5 i. List out the items of work for a slab culvert. **2**
 ii. Estimate the quantity of work for pier for the slab culvert shown in fig-2. **8**

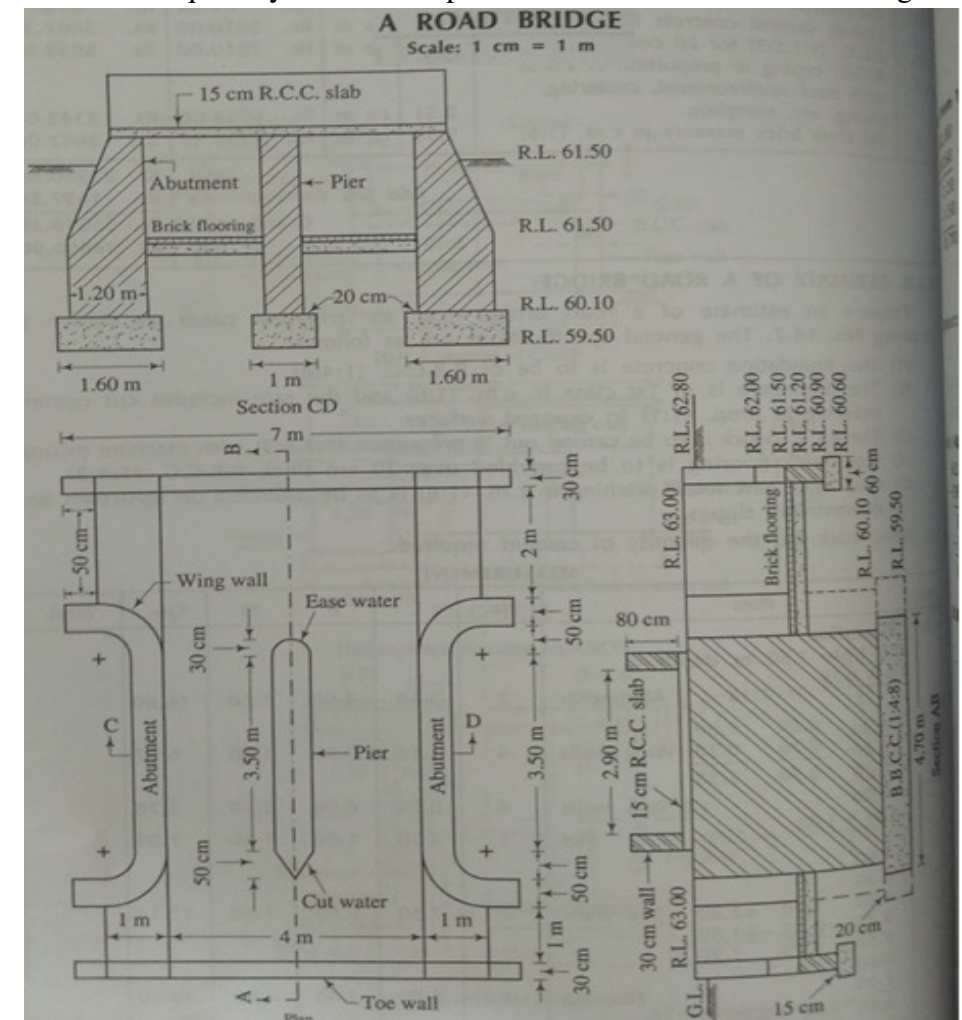


Figure 2

P.T.O.

Marking Scheme
CE2EL02 Advance Estimating and Costing

| | | | | |
|-----|-------|-----------------------------------------------------------------------------------------------------------|--------------|----------|
| Q.1 | i. | Pick up the incorrect statement from the following | | 1 |
| | | (d) None of these | | |
| | ii. | The total length of a both side cranked bar through a distance D at 45 degree | | 1 |
| | | in case of Beam of effective length L, is | | |
| | | (b) $L+2 \times 0.42d$ | | |
| | iii. | Unit of measurement of A.C. sheets is: | | 1 |
| | | (b) Sq. M. | | |
| | iv. | The unit of measurement is per quintal for the following | | 1 |
| | | (d) Reinforcement in RCC works | | |
| | v. | The diameter of a domestic sewer pipe is recommended | | 1 |
| | | (d) 200 mm | | |
| | vi. | The minimum width of a septic tank is taken | | 1 |
| | | (d) 90 cm | | |
| | vii. | For 100 square metre cement concrete 1: 2: 4, 12 cm thick slab the quantity | | 1 |
| | | of cement required is | | |
| | | (b) 75 bags | | |
| | viii. | Cost of fitting sand fixing is specified for the following sanitary fittings | | 1 |
| | | (d) All of these | | |
| | ix. | Scrape value of building is taken as _____ of the cost of construction | | 1 |
| | | (d) 10% | | |
| | x. | Original cost of property minus depreciation value of the year | | 1 |
| | | (b) Salvage value | | |
| Q.2 | i. | Items of work for casting RCC beam. | | 3 |
| | | 1 mark for each item | (1 mark * 3) | |
| | ii. | Bar bending schedule for the beam | | 7 |
| | | Sketch of schedule | 3 marks | |
| | | Proper feeding | 4 marks | |
| OR | iii. | Calculate the quantity of secondary steel | | 7 |
| | | Length of bar | 2 marks | |
| | | Number of bars | 3 marks | |
| | | Weight of reinf. | 2 marks | |
| Q.3 | | A shade of size 6 m x 24m is to be provided with trusses of span 6m and rise 2m, at a spacing of 3 m c/c. | | |
| | | Attempt any two from the following: | | |
| | i. | Calculate the G.I. steel requirement for the roof in members. | | 5 |
| | | Size of inclined surface + 10 % extra | 3 marks | |

| | | | | |
|-----|------|-----------------------------------------------------------------------------------------|----------------|----------|
| | | Area of sheets | 0.5 mark | |
| | | Number of sheets | 1.5 marks | |
| | ii. | Propose a proper steel roof truss for the shade | | 5 |
| | | Sketch | 3 marks | |
| | | Labelling | 2 marks | |
| | iii. | If the single angle ISA 50x50x6 is used for diagonals & double angles for | | 5 |
| | | Top and bottom chords length | 1 mark | |
| | | Diagonals length | 1.5 marks | |
| | | Total weight of angles (above two) | 1.5 marks | |
| | | Gusset plates & rivets. | 1 mark | |
| Q.4 | | Attempt any two | | |
| | i. | Report of water supply project for a village of population of 10000. | | 5 |
| | | Proposal | 1 mark | |
| | | Tank size | 2 marks | |
| | | Other details | 2 marks | |
| | ii. | Importance of septic tank | 2 marks | 5 |
| | | Diagram | 2 marks | |
| | | Label | 1 mark | |
| | iii. | Items of work for an overhead water tank along with units of measurement. | | 5 |
| | | Foundation excavation | 1 mark | |
| | | Reinforcement binding | 1 mark | |
| | | Base conc. | 1 mark | |
| | | Conc. In foundation | 1 mark | |
| | | Centering | 1 mark | |
| Q.5 | i. | Items of work for a slab culvert. | | 2 |
| | | 0.5 mark for each | (0.5 mark * 4) | |
| | ii. | Quantity of work for pier for the slab culvert | | 8 |
| | | Excavation | 2 marks | |
| | | Foundation | 3 marks | |
| | | Brickwork | 3 marks | |
| OR | iii. | Quantity of work for slab and parapet for the slab culvert | | 8 |
| | | Slab | 4 marks | |
| | | Parapet | 4 marks | |
| Q.6 | | Attempt any two: | | |
| | i. | Differentiate book value, market value, scrap value, salvage value and year's purchase. | | 5 |
| | | 1 mark for each | (1 mark * 5) | |
| | ii. | Depreciation | 2.5 marks | 5 |

| | | | |
|------|--------------------------------------------|-----------|----------|
| | Sinking fund. | 2.5 marks | |
| iii. | Definition of valuation | 2 marks | 5 |
| | Factors affecting valuation of a building | | |
| | Three factors 1 mark for each (1 mark * 3) | 3 marks | |
