

June 2019

ESTIMATING AND COSTING*Time Allowed: 3 Hours**Full Marks: 70***Answer to Question No.1 is compulsory and to be answered first.****This answer is to be made in separate loose script(s) provided for the purpose.****Maximum time allowed is 45 minutes, after which the loose answer scripts will be collected and fresh answer scripts for answering the remaining part of the question will be provided.****On early submission of answer scripts of Question No.1,
a student will get the remaining script earlier.****Answer any five questions from Group-A & B, taking at least two from each group.**

1. A. Answer the following questions (any ten): 1x10
- i) The thickness of plastering is usually kept equal to _____ mm.
 - ii) Detailed drawing is not necessarily required for _____ estimate.
 - iii) When there is considerable deviation from the originally sanctioned estimate, _____ estimate is prepared.
 - iv) Quantities for iron work are generally computed in terms of _____.
 - v) Ends of lintel up to 0.1 sq. M in section – (a) deduction is made, (b) no deduction is made.
 - vi) Generally the provision for supervision is _____ to _____%.
 - vii) The multiplying factor for steel roller shutters measured flat (size of opening); including jamb, guides, bottom rails, locking arrangement etc for each side is – (a) 1.0, (b) 1.1, (c) 1.2, (d) 1.3.
 - viii) The estimated quantity of cement bags for 6mm thick cement plaster to R.C. ceiling per 100 sq.m will be about _____ bags.
 - ix) The measurement is not made in square metre in case of – (a) DPC (b) RC Chajja (c) Concrete Jaffries (d) Form works.
 - x) The useful part of liveable area of a building is also known as _____ area.
 - xi) No of bricks that can be carried by 8 tonner truck is _____.
 - xii) One cubic metre of mild steel weighs about _____ kg
 - xiii) The expected out turn of cement concrete 1:2:4 per masson per day is _____ cum.
 - xiv) Courtyard area is always included in the plinth area estimate (True/False)
- B. Answer the followings questions (any five): 2x5
- i) State the purpose of estimating and costing.
 - ii) Draw the format for measurement sheet.
 - iii) Define contingencies.

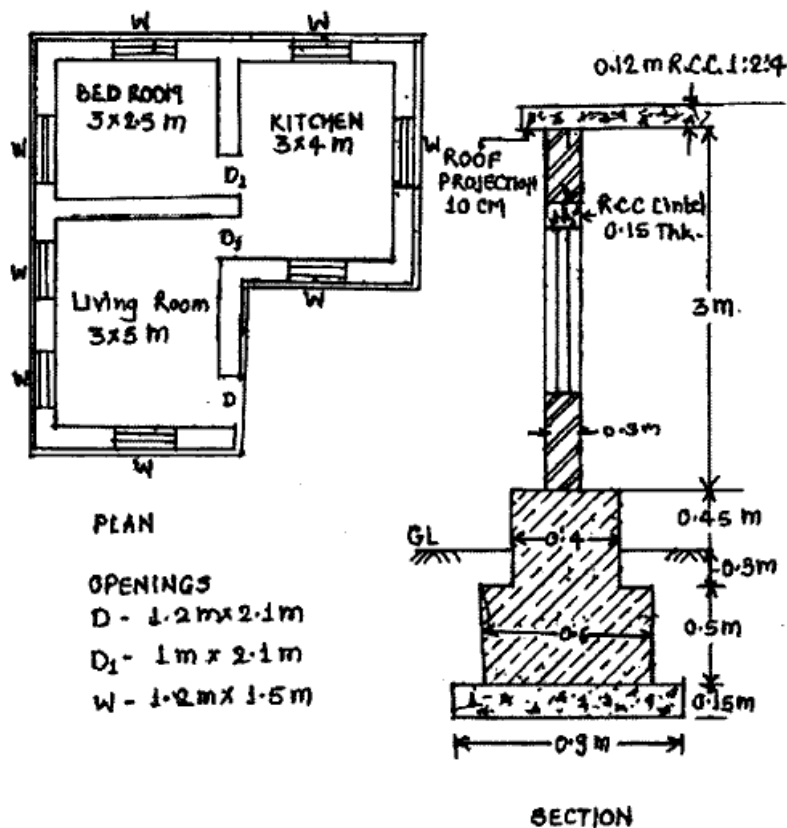
- iv) Calculate the quantities of brickwork by using CBRI formula for a single storey building of area 100 m².
- v) State the rules for deduction as per IS 1200 for masonry work.
- vi) State the approximate percentage of steel requirement for the following RC members:
(a) Footing, (b) Column, (c) Beam, (d) Slab
- vii) Define Lead and Lift.
- viii) Define administrative approval.

Group-A

2.
 - a) Enlist the types of estimate.
 - b) Mention the situation when revised estimate is prepared.
 - c) State the mode of measurement for the following items – (i) Barbed wire fencing, (ii) Skirting, (iii) Dado, (iv) Purlins. 4+2+4

3.
 - a) Explain the long wall and short wall method for taking out quantities.
 - b) Prepare approximate estimate for high school building from following data:
 - i) Proposed plinth area = 2500 sqm.
 - ii) Plinth area rate = 4000 / sqm.
 - iii) Water supply charges = 3% of cost of building
 - iv) Electric installation charges = 10% of cost of building
 - v) Contingencies = 3% of overall cost of building 4+6

4. Workout quantities of items of work for following figure. 2½x4
 - i) Earthwork in excavation
 - ii) U.C.R. masonry in C.M. 1 : 6 in foundation and plinth
 - iii) Brickwork in C.M. 1 : 5 in superstructure, Thk. – 30 cm
 - iv) R.C.C. work in roof slab (M20 concrete)



5. Write short notes on the followings: 2x5
- Task work
 - Work Charged Establishment
 - BOQ
 - Revised estimate
 - Day work

Group-B

6. Prepare a bar bending schedule for a rectangular beam of size 230x500mm. The beam is reinforced with 2 No's – 10 mm ϕ at top, 2 No's 16 mm ϕ at Bottom, 2 No's – 16 mm ϕ bentup, 6 mm ϕ two legged stirrups are provided at 150 mm c/c throughout the length. Length of beam is 4.5 m. 10
7. Find out total quantity of steel and prepare BBS from following data: 10
- Size of room = 6 m \times 4 m
 - Thickness of slab = 120 mm
 - Main bars bentup alternatively = 12 mm dia along shorter span @ 140 mm c/c
 - Distribution bars = 6 mm dia along longer span @ 125 mm c/c
8. Prepare rate analysis for brickwork in superstructure in cement mortar 1:6 proportion. 10
9. Prepare the rate analysis for RCC work (1:1:2) for beam with 2% steel. 10
You may assume cement Rs. 9100/MT, Brick Rs. 9500/1000 nos, Sand (coarse) Rs. 1200/Cum, Sand (medium) Rs. 1050/Cum, Steel Rs. 51000/MT, Head mason Rs. 450/day, Ordinary mason Rs. 400/day, Mazdoor/Bhisti Rs. 300/day. Assume any other rate if required.
10. a) Workout the quantity of following items for septic tank (size 2 m \times 4 m) and height 1.5 m. The top of slab of septic tank is 20 cm above GL. 5+5
- Earth work in excavation
 - P.C.C. (15 cm thick) at bottom
- b) Prepare a list of material items involved for a 100 mm deep 40 ϕ nominal bore tube well filled with deep well head pump. Assume 100 ϕ casing pipe 15 m long.

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