Total No. of printed pages = 7

END SEMESTER EXAMINATION–2022

Semester : 4th

Branch : Civil

Subject Code : Cv-404

ESTIMATING-I

Full Marks – 70

Time – Three hours

The figures in the margin indicate full marks for the questions.

Instructions :

(i) *All* questions of PART–A and PART–B are compulsory.

(ii) Assume any missing data.

PART –A

Marks – 25

1. Fill in the blanks with appropriate word(s). 1×10=10

(a) Unit of measurement for skirting is _____.

[Turn over

(b) Essential requirement to prepare a detailed estimate is _____.

(c) When a new estimate is made by modifying the original estimate, it is called _____.

(d) The expenses of item which do not come under any regular head of items and the cost of unforeseen items are called _____.

(e) Earthwork in foundation trench filling is considered as _____ of earthwork in excavation.

(f) Building having beams and columns is called _____ building.

(g) Unit of measurement for stone slab flooring is _____.

(h) Quantity of wall painting is same as that of _____.

(i) Unit of payment for laying, joining and fixing 15 mm diameter PVC pipe in residential building is _____.

(j) Weight of 12 mm diameter steel bar per metre length is _____.

2. Write True or False : 1×10=10

(a) An estimate is the probable cost of work and is usually prepared before the construction.

(b) Half brick thick wall is measured in cubic metre.

(c) Unit of measurement for shuttering of column is cubic metre.

(d) Plinth area is the sum of area occupied by walls and carpet area.

(e) Detailed estimate is more accurate than preliminary estimate.

(f) In long wall and short wall method of estimation, any wall may be considered as long wall.

(g) Plastering to wall, floor etc. and plastering to ceiling are different items.

(h) In estimate of wall plastering, no deduction or addition shall be made to surface area for opening upto 0.5 sq.m.

(i) One cubic metre of mild steel weigh 7850 kilogram.

(j) Length of L-hook is taken as 20 times diameter of the bar.

3. Choose the correct answer : 1×5=5

(a) In detailed estimate

(i) Dimension should be measured correct to 0.01m

(ii) Area should be measured correct to 0.01 sq.m

(iii) Volume should be measured correct to 0.01 cu.m.

(iv) All of the above

(b) A building of plinth area 15 sq.m and height 3m is to be constructed in an area where the cubic content rate is Rs. 2,000.00 per sq.m. The building cost will be

(i) Rs.1,00,000.00 (ii) Rs. 90,000.00.

(iii) Rs. 80,000,00 (iv) None of these

(c) Footing used in Load bearing type building is called

(i) Wall footing

(ii) Isolated footing

(iii) Combined footing

(iv) Continuous footing

(d) Centre line method is suitable for walls having

(i) Same materials

(ii) Same weight

(iii) Similar cross-section

(iv) Different cross-section

(e) Quantity of concrete required for a beam of length 10m, breadth 5m and depth 4m is

(i) 450 cu.m (ii) 500 cu.m

(iii) 400 cu.m (iv) 200 cu.m.

PART – B

Marks – 45

4. Prepare a preliminary estimate of a polytechnic building with the following details :

(i) Carpet area = 600 Sq.metre.

(ii) Plinth area rate = Rs.10,000.00 per Sq. metre.

(iii) Floor area = 90% of plinth area.

(iv) Area occupied by corridor, lavatory, verandah etc. = 10% of floor area.

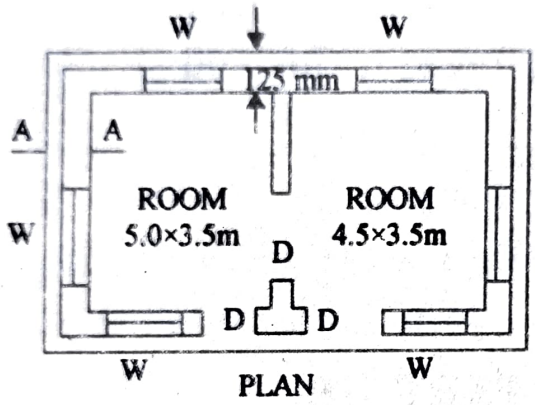
(v) Cost of water supply = 4% of building cost.

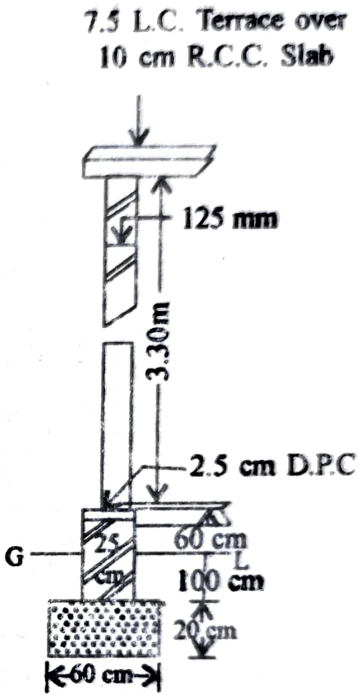
(vi) Cost of electrification = 10% of building cost.

(vii)Cost of work charged establishment = 2% of total cost.

(viii)Contigency =1% of total cost. 7

5. Figure below shows plan and section of a two roomed building :





Cross-section on wall on AA

Note :

The size of door is 1.20m × 2.10m

The size of window is 1.00m × 1.50m

The size of lintel 0.125m × 1.150m

Estimate :

(a) P.C.C work in foundation.

(b) First class brickwork in Sub-structure.

(c) First class brickwork in Super-structure. 12

6. Estimate the quantity of timber work for a fully panelled door of size 2.1 m.×1.0 m., size of frame is 15 cm.× 7.5 cm. (Sal wood) and shutter of Gamari wood 3.75 cm. thick. 10

Or

Estimate the timber required for one King post roof truss of clear span 5 metre, having a rise of 2 metre. Assume suitable dimension for all other members. 10

7. Estimate the : 6

(i) Earthwork in excavation and

(ii) Brickwork in walls of septic tank for 50 users.

8. (a) Find the quantity of cement required in bags for making one cubic metre of concrete (1 : 2 : 4). 3

(b) Find the length of one 10 mm. diameter (@ 0.62 kg/m) main bar required for a beam of length 6 metres. The clear cover being 2.5 cm. The bar is hooked at the ends. 3

(c) Find the length of 6 mm. diameter (@ 0.22 kg/m) stirrups required for a column of section 60 cm. × 40 cm. if the clear cover to reinforcement is 5 cm. 4