

Total number of printed pages-6

43 (6) ESCS

2016

## ESTIMATING AND COSTING

Paper : ARC-6.4

Full Marks : 100

Time : Three hours

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

**A.** Attempt ***any three*** questions from the following : 3×10=30

1. What does the term "taking out quantities" mean?
2. What are the different types of estimate? Explain briefly *any two* types of estimate.
3. What is the definition of "rate analysis"? What are the factors affecting the rate analysis of the item? Explain briefly.
4. Write note on the "Schedule of rate". What does the "task per day" represent? Explain.

Contd.

**B.** Attempt *any three* questions :  $3 \times 15 = 45$

5. Prepare an abstract of estimated cost of a verandah roof of a house from the given plan and section. (Ref. *fig.-1* attached). The roof covering is of GCI sheets, all timber members are of sal timber. The rates of materials are as follows :

- (i) rate of GCI sheets :  $0.50\text{ mm}$  thick,  $32.0$  (rupees) per *sqm.*
- (ii) rate of GI ridge :  $0.50\text{ mm}$  thick, Rs.  $20/-$  per *m*
- (iii) rate of sal timber :  $16,500$  (rupees) per *cm.*
- (iv) Necessary nuts and bolts, screws, nails etc. : L.S. Rs.  $985.00$
- (v) Contingencies of work charged :  $5\%$  of the total cost establishment.

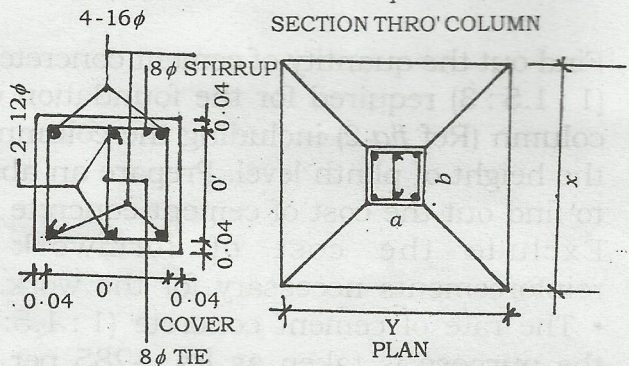
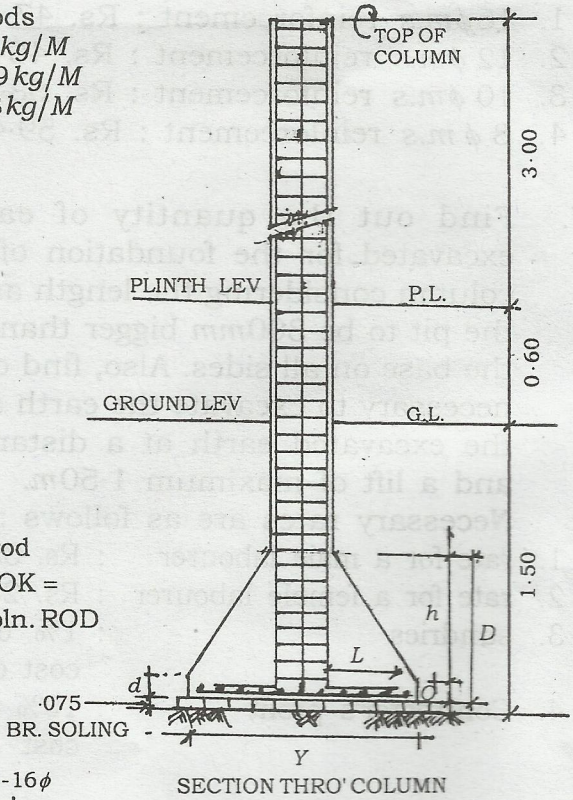
6. Make an estimate of the reinforcements required for the column as shown in the plan and section (Ref. *fig 2* attached) including the stirrups and jalli for the base. The rate for requirements are as follows :



1. 16  $\phi$  m.s reinforcement : Rs. 47.10 per kg.
  2. 12  $\phi$  m.s reinforcement : Rs. 46.95 per kg.
  3. 10  $\phi$  m.s reinforcement : Rs. 53.45 per kg.
  4. 8  $\phi$  m.s reinforcement : Rs. 59.49 per kg.
7. Find out the quantity of earth to be excavated for the foundation of the above column considering the length and width of the pit to be 300mm bigger than the size of the base on all sides. Also, find out the rate necessary to excavate the earth and unload the excavated earth at a distance of 30m and a lift of maximum 1.50m.
- Necessary rates are as follows :
1. rate for a male labourer : Rs. 350 per day
  2. rate for a female labourer : Rs. 250 per day
  3. sundries : 1% of the total cost of labour
  4. Contractor's profit : 10% of the total cost
8. Find out the quantity of cement concrete work (1 : 1.5 : 3) required for the foundation of the column (Ref fig 2) including the column upto the height of plinth level. Prepare an abstract to find out the cost of cement concrete work. Exclude the cost of formwork and reinforcements necessary for the work.
- The rate of cement concrete (1 : 1.5:3) for the purpose is taken as Rs. 4285 per cubic meter.

wt of MS rods  
 1.  $8\phi = 0.39 \text{ kg/M}$   
 2.  $12\phi = 0.89 \text{ kg/M}$   
 3.  $16\phi = 1.58 \text{ kg/M}$

$a = 0.40$   
 $b = 0.40$   
 $x = 2.00$   
 $Y = 2.00$   
 $h = 0.75$   
 $d = 1.50$   
 $L = 40 \times \phi$  of rod  
 STIRRUP HOOK =  
 $1.20 \times \phi$  of Coln. ROD



ALL DIMENSIONS ARE  
 IN METRE

FOR QN NO. 6 & 8 (B)  
 (NOT TO SCALE)

FIG. 2



C. Attempt the following questions :

9. Write short notes on the following  
(**any four**) : 4×5=20

1. Bill of quantities
2. Work charged establishment
3. Day work
4. Prime cost
5. Measurements
6. Good estimator

10. State the unit of measurement for the following : (**any five**) 1×5=5

- (a) Preliminaries
- (b) excavation
- (c) RCC slab upto 15cm depth
- (d) RCC partition
- (e) RCC box

(f) RCC lintel

(g) beams

(h) chajja and

(i) DPC