FACULTY OF ENGINEERING
B.E. 4/4 (Civil) II Sem. (New) (Main) Examination, June 2010
ESTIMATING AND SPECIFICATION

Time: 3 Hours]   [Max. Marks: 75

> ***Note:*** 1) *Answer **all** questions from Part A. Answer **any five** questions from Part B.*
>
> 2) ***Assume** any data suitably, if necessary.*
>
> 3) *Use of standard data book may be **permitted**.*

PART – A   (25 Marks)

1. Why degree of accuracy is required in estimation ?

2. Write down the principle of long wall and short wall method.

3. Enumerate the difference between load bearing structure and framed structure in estimating a building.

4. The bed width of the channel is 6 metres and the top width of banks are 3.5 metres for the left and 2.0 metres for the right bank. Side slopes of excavation is 1:1.5 and of bank 1:2. Estimate the economical depth of digging.

5. Explain the method of estimating the brickwork in arch portion of a culvert.

6. Write down the weights of 10 mm, 12 mm, 16 mm, 20 mm and 25 mm steel rods (for 1 metre length).

7. Differentiate between general specifications and detailed specifications.

8. Estimate the quantity of materials required for 5 cm. thick cement concrete floor of 1:2:4 for 100 sq. m.

9. What are the centage charges ?

10. Write a short notes on standard measurement book.

(This paper contains 4 pages)   1   **P.T.O.**

PART – B   (50 Marks)

11. Prepare the detailed estimate for the following items of work for a residential building plan as shown in the Fig. 1 by using centre line method.

 a) Earth work excavation for foundation

 b) First class brickwork in the super structure with cm 1:6.

12. Compute the quantity of steel reinforcement in an R.C.C. roof slab of 4.5 metres clear span and 7.0 metres long, having 12 mm dia main bars at 15 cm c/c and 8 mm dia distribution bars at 20 cm c/c with alternate bent up bars. Extra rods of 10 mm dia bars at 12 cm c/c are provided at each corner of the slab for a length of 1 metre. Also prepare the schedule of bars for the RCC slab.

13. Estimate the quantity of earth work for a portion of a road from the following data :

Formation width of the road is 10 metres, side slopes are 1.5:1 in banking and 1:1 in cutting.

Chainage (m)}	:	0	50	100	150	200	250	300
R. L. of ground}	:	102.35	101.80	102.05	102.5	103.15	103.45	103

R. L. of formation is 103.5 m in an uniform upward gradient of 1 in 250.

14. Workout the unit rates for the following finished items required for a building.

 a) First class brickwork in super structure in cm (1:6) for 1 Cu.m.

 b) 1:1.5 : 3 cement concrete required for slab and beam for 1 Cu.m. RCC work.

 Adopt the following rates of materials and labour at the site.

 i) Cement   Rs. 210/- per bag

 ii) Sand   Rs. 300/- per Cu.m.

 iii) Aggregate   Rs. 450/- per Cu.m.

 iv) Mixing Mortar   Rs. 25/- per Cu.m.

|	
v) Standard bricks	Rs. 2,200/- per 1000 No's
vi) Steel	Rs. 32,000/- per tonne
vii) Brick layer	Rs. 450/- per day
viii) Man Mazdoor	Rs. 250/- per day
ix) Woman Mazdoor	Rs. 200/- per day
x) Bar bending	Rs. 30/- per kg
xi) Centring and shuttering	Rs. 750/- / per day

15. Explain the various detailed specifications required for 1:3 reinforced brickwork.

16. a) Bring out the role of work charged establishment in the field work.

   b) A building is situated by the side of a main road in a city on land of 600 sq.m. the built up area is 400 sq.m. the age of the building is 15 years. Assuming the cost of land as Rs. 30,000 per sq.m. and cost of building as Rs. 2,500 per sq. m. work out the value of the property.

17. Write short notes on the following :

   a) Types of estimates

   b) Conditions of contract

   c) Liquidated damages and unliquidated damages

   d) Tender notice.

3

PLAN (NOT TO SCALE)

ROOM
4.0 × 4.0m

ROOM
4.0 × 4.0m

ROOM
3.0 × 3.0m

VERANDAH
5.30 × 3.30m
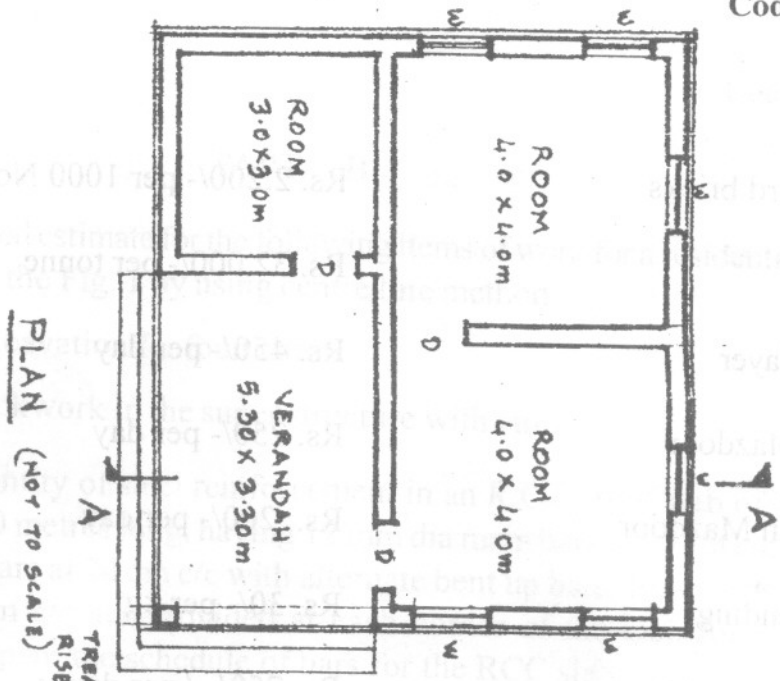
TREAD : 0·30
RISE : 0·15

D : DOOR : 1·0 × 2·0m
W : 0·n × 1·0 × 1·25m
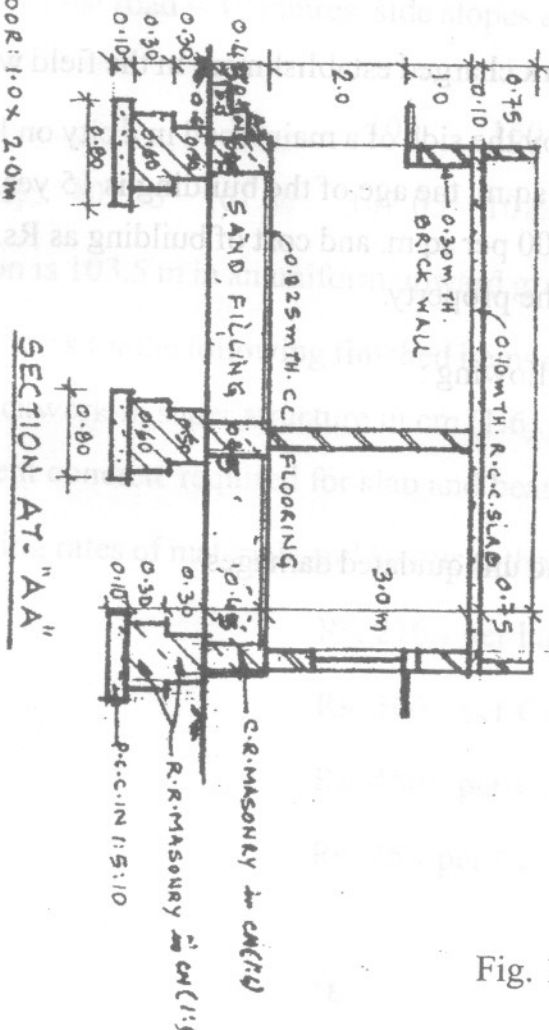LINTEL BEARING : 0·20m on either sides
NOTE : All dimensions are in meters.

SECTION AT "AA"

SAND FILLING
0·025m TH. C.C FLOORING
0·30m TH. BRICK WALL
0·10m TH. R.C.C. SLAB
C.R. MASONRY in cm(1:6)
R.R. MASONRY in cm(1:6)
P.C.C. IN 1:5:10

Fig. 1