EX/ CON/T/226/2018

B.E. CONSTRUCTION ENGINEERING SECOND YEAR SECOND SEMESTER EXAM 2018

Time: Three hours

Subject: ESTIMATING AND PRICING

Full Marks: 100

Different parts of the same question should be answered together.

CO1 [50]

Answer all questions in this block:

1. (a) Workout quantity of 6 mm, 10mm, and 16mm diameter reinforcement for a rectangular beam of size 250 mmx400mm. The beam is reinforced with 2 Nos-10mm dia. at top, 2Nos – 16mm dia. at bottom. 2 Nos.-16mm dia. bent up.6mm dia. two legged stirrups are provided at 200 mm c/c throughout the length. Length of beam is 6.0 Assume suitable cover.

OR

(b) Prepare the Bar bending schedule of a simply supported R.C.C. Lintels from the following specification: Size of lintel 300mm widex 200mm depth. Main bars in tension zone of Fe250(grade I) 3 bars of 16mm dia., one bar is cranked through 45 degree at 170mm from each end 2 No. anchor bars at top 8mm dia.Two legged stirrups@150mm c/c of 6mm dia. throughout. Clear span of the lintel is 150mm.Bearing on either side is 150mm. [15]

2. (a) Work out quantities of earth work for a section of road as given in table

Chainage (m)	0	30	60	90	120	150
Ground level (m)	111.00	109.00	109.70	108.70	109.80	110.80

Formation level at 0 m chainage=111.00 m. Gradient of formation line 1 in 350 upward. Top width of Formation 10.00m. Side slope 2.5:1.

OR

(b) The road has the following data. The Formation level at chinage zero is 28 and having the rising gradient of 1 in 100 the top width is 10m and the side slopes are 1½ horizontal to 1 vertical Assuming transverse slope is level calculate the volume of earth work.

Chainage	0	30	60	90	120
G.L in m	26.0	27.5	28.8	30.5	35.8

[3] (a) Calculate the quantities of the following items from the given figure-1 up to G.L., using (a) Centre line method.(b) Long Wall – Short Wall method. 1. Excavation for foundations-2. Cement Concrete in foundations. 3. Brick work in cement mortar (1:4). [15]

OR

(b) From the given figure (Figure-2) below calculate the details estimate for the single Storeyed residential building with no of rooms (Load bearing type structure) by Centre Line Method. [20]

CO2 [10]

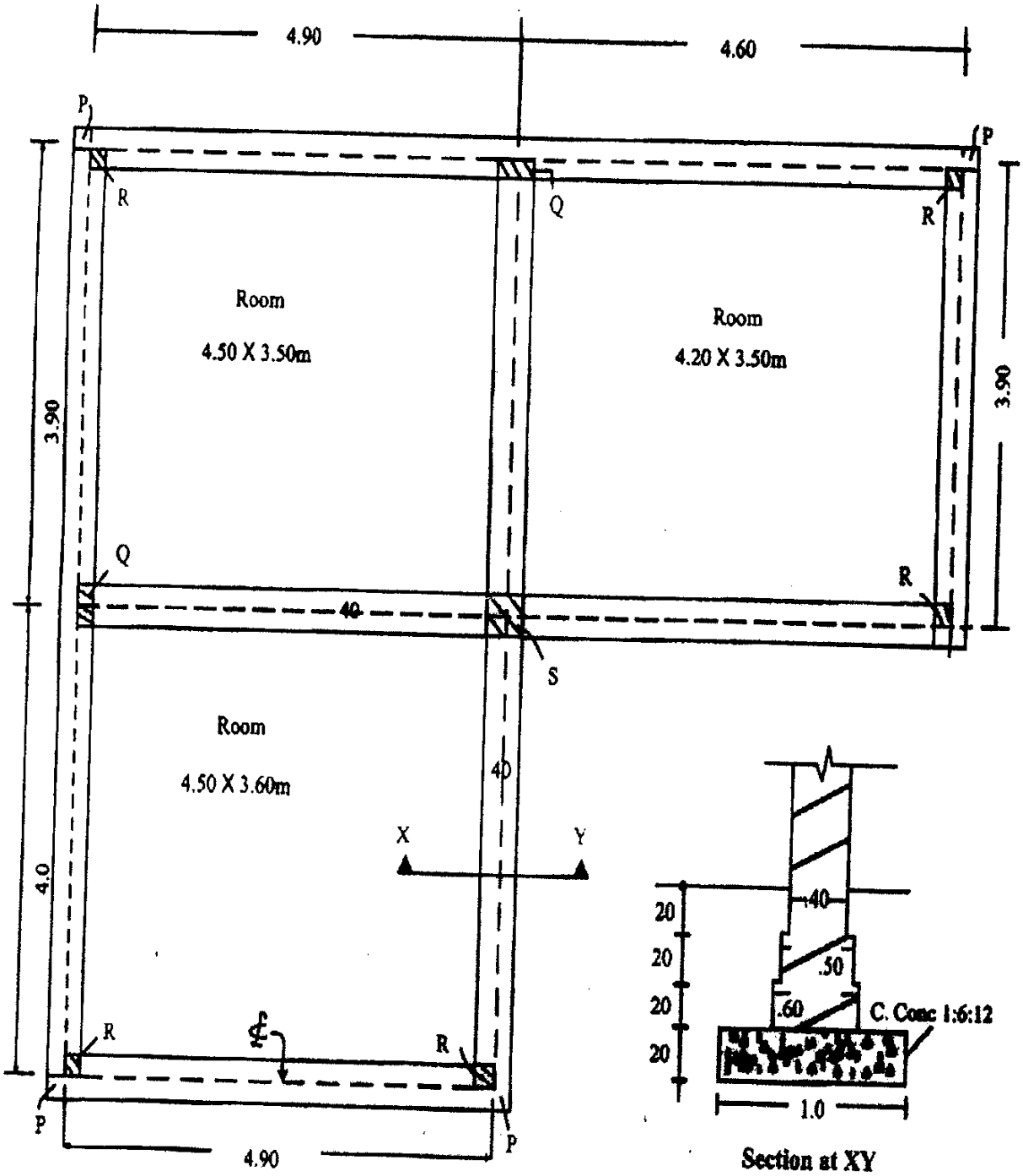
Answer all questions in this block:

[4] (a) What do mean by overhead? Mention the types of overhead?

(b) Prepare a unit rate of (**ANY TWO**) (1) brickwork in cement mortar for 1.0 cum.use in modular bricks. (2) R.C.C. (1:1.5:3) for 1.0 cu m. in slabs, beams and columns. (3) 2.5 thick cement concrete 1:2:4 Damp proof Course. [4] [3+3]

CO3 [10]	*Answer all questions in this block:* [5] (a) Distinguish between General specification and Detailed specification. (b) Write specification on (ANY TWO) (1) First Class brick work (2) Damp proof course. (3) Line terra [4
CO4 [30]	*Answer all questions in this block:* [6] (a) Difference between Depreciation and obsolescence **OR** Salvage value and scrap Value. (b) Define cost, price and value. **OR** difference between market value and Book value. (c) Define sinking fund and explain any method to determine sinking fund **OR** briefly describe types of depreciation and explain any method to determine depreciation. (d) A concrete mixer was purchased at Rs.9000.00. assuming a salvage value to be Rs.1000.00 after 5 yea calculate depreciation for each years adopting any method.

The students of the course should be able to
CO1: To estimate quantity of materials of different civil engineering structures. (K3)
CO2: To analyse the rate analysis, bill preparations, overhead and profit.(K4)
CO3: To prepare the specification. (K3)
CO4: To understand the valuation of rental, land and buildings. (K2)


4.90
4.60
P
R
Q
R
P
Room
4.50 X 3.50m
Room
4.20 X 3.50m
3.90
3.90
Q
R
40
S
Room
4.50 X 3.60m
40
4.0
X
Y
R
℄
R
P
P
4.90
20
20
20
20
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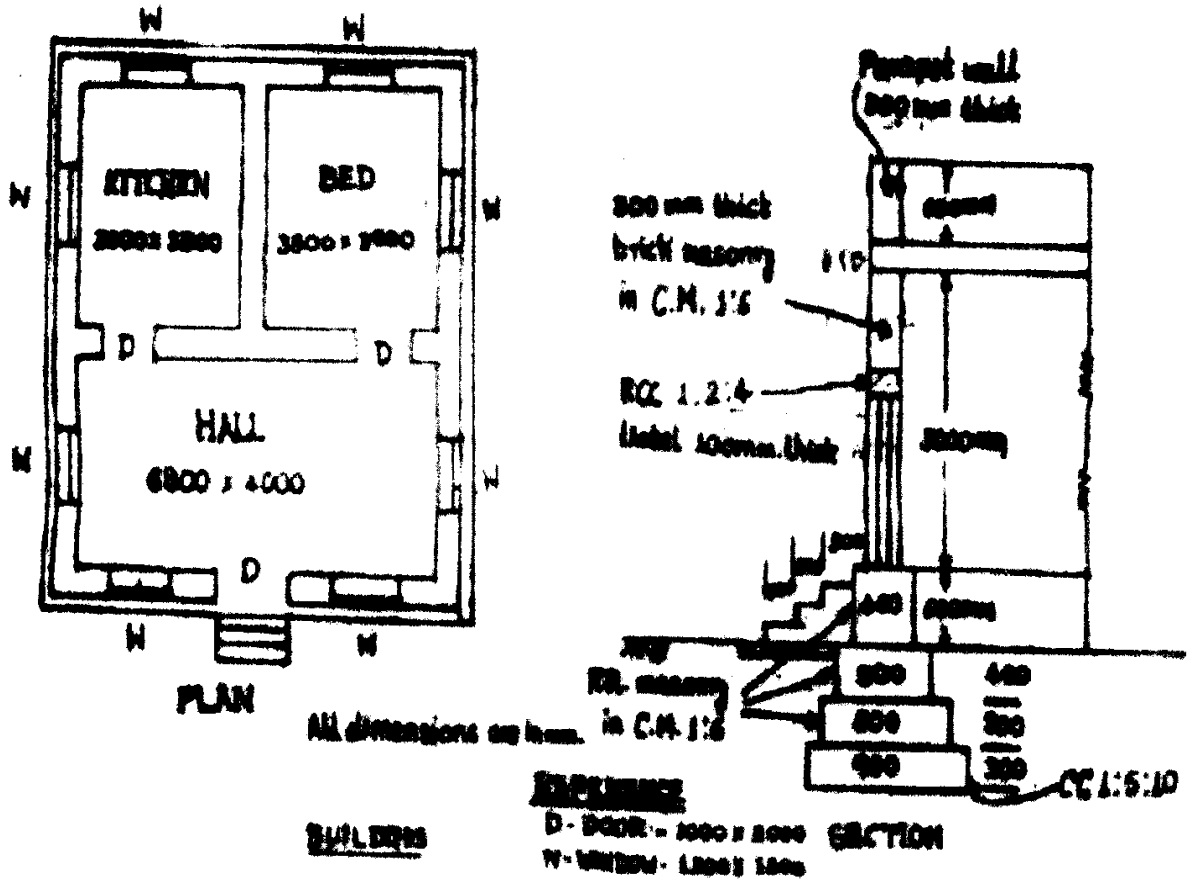
W
W
KITCHEN
BED
W
W
D
D
HALL
6800 x 4000
W
D
W
W
PLAN
500 mm thick
brick masonry
in C.M. 1:6
RCC 1:2:4
All dimensions are in mm.
in C.M. 1:6
D - DOOR
W - WINDOW
SECTION

FIGURE-2