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Total Number of Pages : 04 **B.Tech**

PCI5D002

5th Semester Regular/Back Examination 2019-20

QUANTITY SURVEYING & ESTIMATING

BRANCH : CIVIL

Max Marks : 100

Time : 3 Hours

Q.CODE : HRB454

Answer Question No.1 (Part-1) which is compulsory, any EIGHT from Part-II and any TWO from Part-III.

The figures in the right hand margin indicate marks.

Part-I

Q1 **Only Short Answer Type Questions (Answer All-10)** **(2 x 10)**

a) Differentiate between preliminary estimate and detailed estimate?

b) How the following items of work are measured?
i) Painting Doors and Windows. ii) DPC

c) What is meant by "degree of accuracy in Estimating"?

d) Define overhead charges.

e) How are general specifications different from detailed specifications?

f) What are the errors in a network?

g) Differentiate between float and slack.

h) Write the purpose of doing rate analysis.

i) Define the term 'Cash Book'.

j) Define Dummy activity.

Part-II

Q2 **Only Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve)** **(6 x 8)**

a) How you will find approximate quantities of main items of materials required for the construction of average type without going into detailed estimate?

b) What are the different types of rough estimates, where is each adopted?

c) Define the following items: Supplementary Estimate, Technical sanction

d) Write short notes on Plinth area rates and schedule rates.

e) Draw the net work diagram and find the critical path.

f)

Activity	A	B	C	D	E	F	G	H
Predecessors	-	A	-	-	D	C	B,C	E,C
t0	1	2	3	2	2	2	2	3
tm	4	5	6	2	3	4	9	3
tp	7	8	9	2	7	6	10	3

g) Differentiate between PERT and CPM.

h) Write the detailed specification for Random Rubble Masonry.

i) What is three time estimates of PERT activity?

j) Find out the rate analysis of cement concrete with 4cm gauge stone basalt, coarse sand and cement in 4:2:1 proportion.

k) Write the General specification of a second class building.

l) What is float and how is it useful in a CPM network?
Find out the rate analysis of I-class brickwork in super structure with 20 x 10 x 10 cm

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brick with 1:6 Cement Sand Mortar.

Part-III

Only Long Answer Type Questions (Answer Any Two out of Four)

Q3 Estimate the quantities of following items of work for a building as shown in **Fig 1** **(16)**

a) Earthwork excavation in foundation.
b) 1st class Brick work in foundation
c) 2.5cm Damp proof course

Q4 Estimate the following quantities of a culvert as shown in Fig 2. **(16)**

a) Earthwork excavation
b) 1:4:8 Cement concrete in foundation.
c) I-class brickwork in foundation and superstructure.

Q5 Draw the network corresponding to the following and determine **(16)**
a) The critical Path
b) The total, free and independent floats for each of the activities.

Activity	1-2	1-3	1-4	2-3	2-6	3-5	3-6	4-5	5-6
Duration(days)	8	10	30	22	12	10	14	4	4

Q6 Estimate the cost of earthwork for a portion of a road from the following data:- **(16)**
Road width at the formation surface is 8 metre. Side slopes 2:1 in banking and 1.5:1 in cutting. Length of chain is 30 metre.

Chanage	20	21	22	23	24	25	26	27	28	29	30
Ground Level	71.20	71.25	70.90	71.25	70.80	70.45	70.20	70.35	69.10	69.45	69.70
Formation Level	← 70.00					Upward gradient of 1 in 200 →					

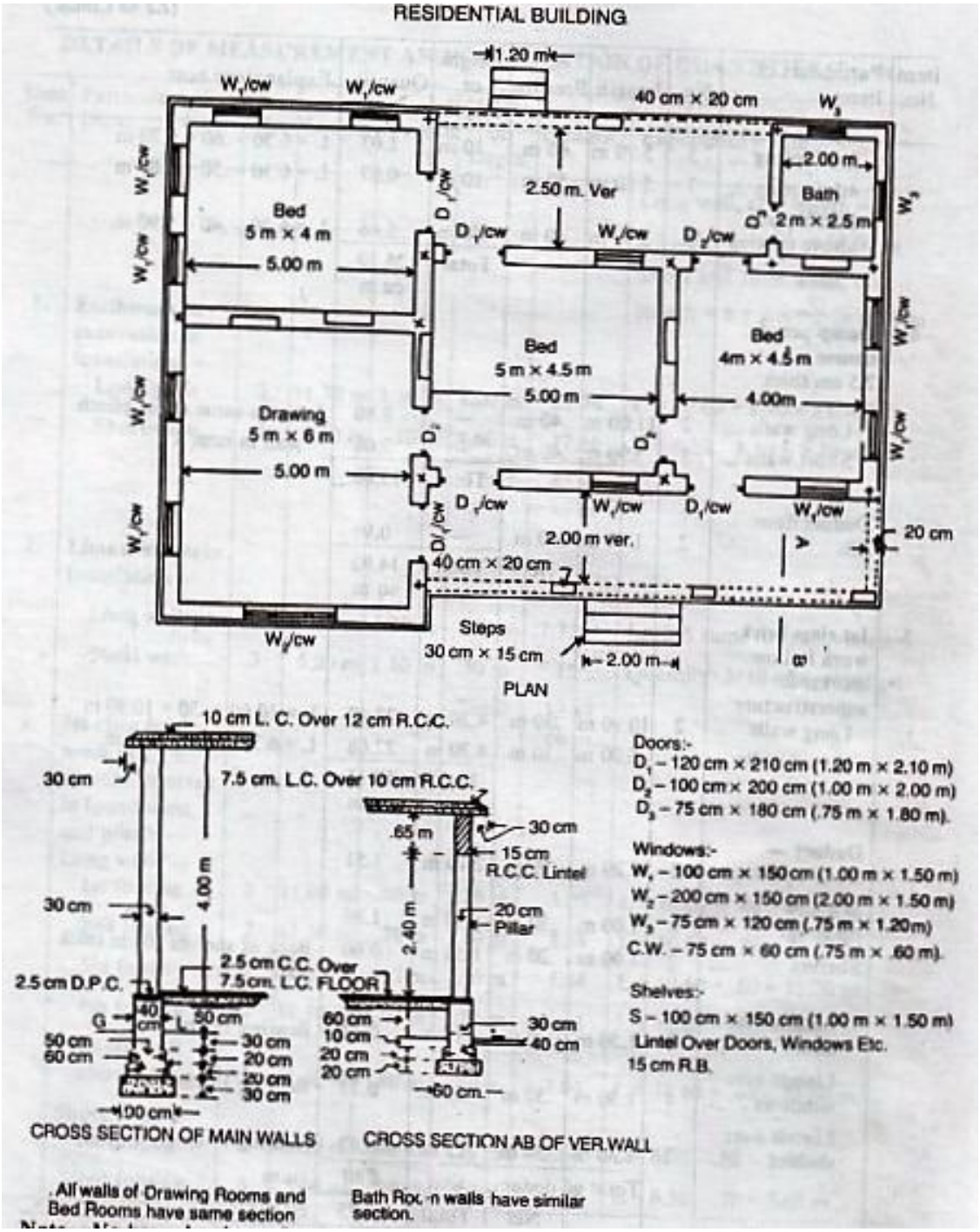
RESIDENTIAL BUILDING
1.20 m
W1/cw
W1/cw
40 cm × 20 cm
W3
2.00 m
Bath
2 m × 2.5 m
2.50 m. Ver
Bed
5 m × 4 m
5.00 m
D1/cw
W1/cw
D2/cw
Bed
5 m × 4.5 m
5.00 m
Bed
4m × 4.5 m
4.00m
Drawing
5 m × 6 m
5.00 m
D2
D1/cw
W1/cw
D1/cw
W1/cw
2.00 m ver.
20 cm
40 cm × 20 cm
Steps
30 cm × 15 cm
2.00 m
W2/cw
PLAN
10 cm L. C. Over 12 cm R.C.C.
30 cm
7.5 cm. L.C. Over 10 cm R.C.C.
.65 m
30 cm
15 cm
R.C.C. Lintel
4.80 m
2.40 m
20 cm
Pillar
30 cm
2.5 cm C.C. Over
7.5 cm. L.C. FLOOR
2.5 cm D.P.C.
40 cm
50 cm
50 cm
60 cm
30 cm
20 cm
20 cm
30 cm
60 cm
10 cm
20 cm
20 cm
30 cm
40 cm
60 cm.
100 cm
CROSS SECTION OF MAIN WALLS
CROSS SECTION AB OF VER.WALL
Doors:-
D1 – 120 cm × 210 cm (1.20 m × 2.10 m)
D2 – 100 cm × 200 cm (1.00 m × 2.00 m)
D3 – 75 cm × 180 cm (.75 m × 1.80 m).
Windows:-
W1 – 100 cm × 150 cm (1.00 m × 1.50 m)
W2 – 200 cm × 150 cm (2.00 m × 1.50 m)
W3 – 75 cm × 120 cm (.75 m × 1.20m)
C.W. – 75 cm × 60 cm (.75 m × .60 m).
Shelves:-
S – 100 cm × 150 cm (1.00 m × 1.50 m)
Lintel Over Doors, Windows Etc.
15 cm R.B.
All walls of Drawing Rooms and Bed Rooms have same section
Bath Room walls have similar section.

Fig-1

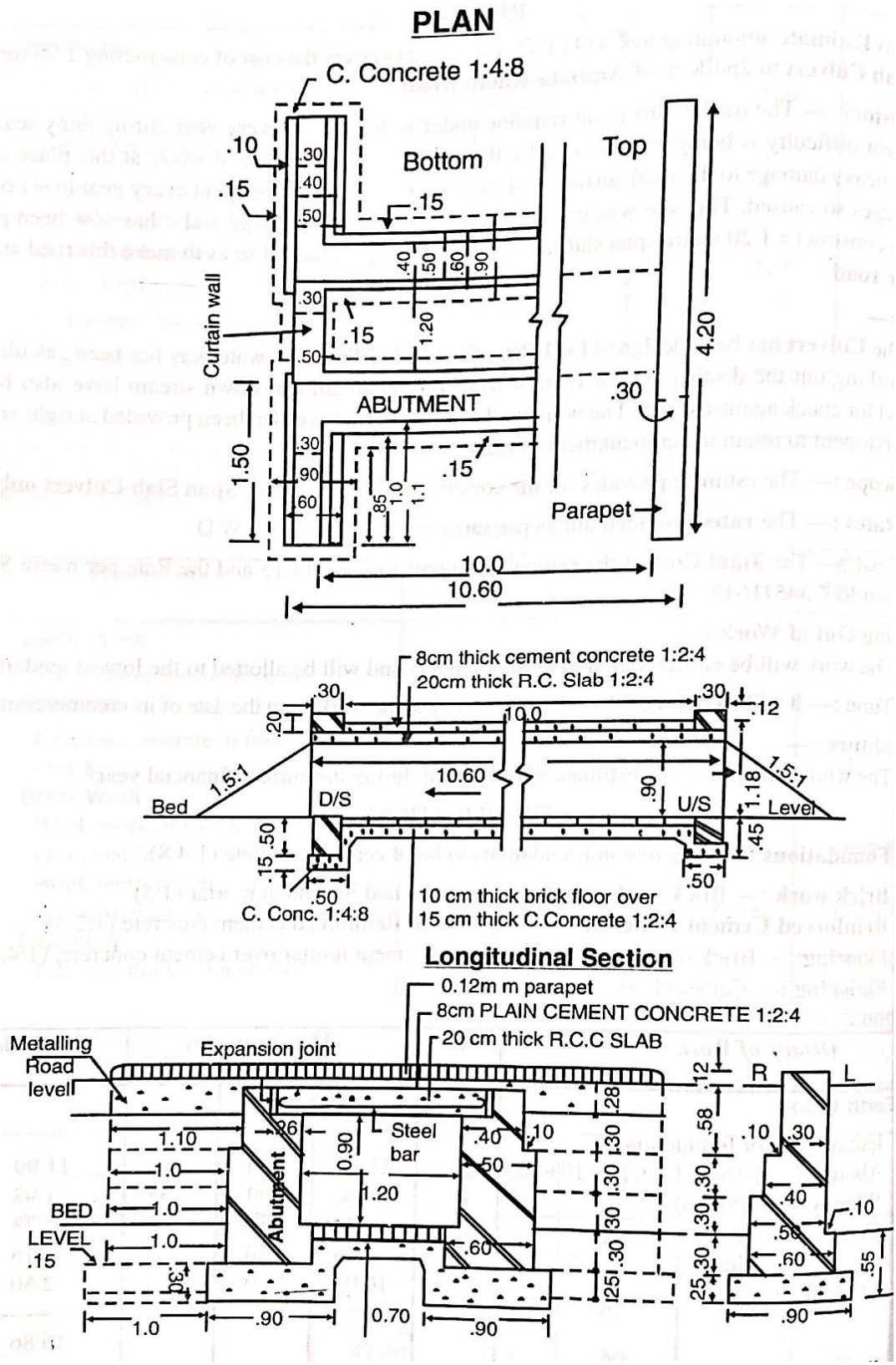
PLAN
C. Concrete 1:4:8
Bottom
Top
Curtain wall
ABUTMENT
Parapet
4.20
1.50
10.0
10.60
8cm thick cement concrete 1:2:4
20cm thick R.C. Slab 1:2:4
1.5:1
Bed
D/S
U/S
Level
C. Conc. 1:4:8
10 cm thick brick floor over
15 cm thick C.Concrete 1:2:4
Longitudinal Section
0.12m m parapet
8cm PLAIN CEMENT CONCRETE 1:2:4
20 cm thick R.C.C SLAB
Metalling
Road
level
Expansion joint
Steel
bar
Abutment
BED
LEVEL
R
L
0.70

Fig-2