B.E. CIVIL - SEM-VII [CBCS] 14 NOV 2019

14 NOV 2019

SEAT NO.

[REV COURSE]

(4 Hours) [Total marks : 80]

NOTE:

i) Question No. 1 is compulsory.
ii) Attempt any three out of the remaining five questions.
iii) Figures to the right indicate full marks
iv) Assume suitable data if required.

Q.1 Work out the following quantities from the given plans & sections. 20

- RCC (M20) for roof slabs and beams
- Brick work
- Internal plaster on walls and ceiling in c:m 1:5, 12 mm thick
- Flooring and skirting

Q.2 A) What is meant by rate analysis? What are the purposes of doing the rate analysis?. Perform rate analysis for UCR masonry work in cement mortar 1:6. 10

B) What are the causes of dispute between a contractor and owner? How is the dispute between contactor and owner solved? Explain briefly. 10

Q.3. A) Calculate the total built up area of building as shown in figure of question no 01. Prepare an approximate estimate of the same building. Assume cost of construction of super structure as Rs.8000 / sqm. 10

B) Why is specification considered as legal document? Draft the detailed specification for 15 mm thick single coat plaster work in cement mortar 1:4. 10

Q.4 A) Clear dimension of a one-way slab is 3 m x 6.25 m. The slab is supported on 230 mm thick wall all around. Main bars are 8 mm dia @ 150 mm c/c (alternate bars bent up) and distribution bars are 8 dia @ 200 c/c. Thickness of slab is 125 mm. Calculate the quantity of reinforcement per cum of concrete in slab. Also calculate the quantity of cement, sand and aggregate. Grade of concrete is M20 and grade of steel is Fe415. 12

B) A leasehold property is to produce a net annual income of 5,50,000 for the next 30 years. The owner expects a return of 8% on his capital and also sets apart a sinking fund installment to accumulate at 7% annually to replace the capital. Determine the value of the property. 8

Q.5 A) Estimate the quantity of earthwork for a portion of a proposed road from the following data. 12

Dist. in m	0	60	120	180	240	300	360	420	480	540
GL	83.12	82.44	81.86	82.08	81.3	80.8	80.54	80.82	80.96	81.50
FL	82.42	Downward gradient 0.8%				Upward gradient 0.5%				

Proposed formation width of road is 12 m, side slope 1:1.5 in cutting and 1:2 in banking. Also draw the mass diagram.

B) What is contract? Explain valid contract, voidable contract and void contract. 8

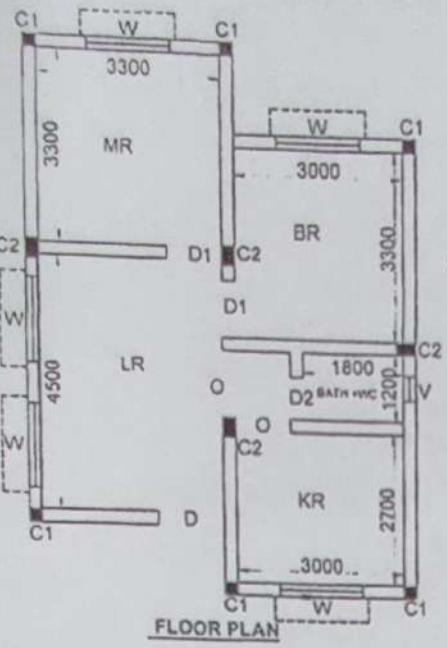
20

Q.6 Write short notes on (any four)

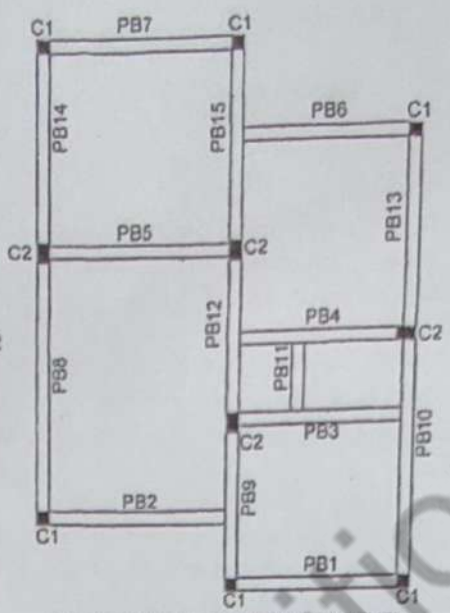
- Balanced and Unbalanced tender
- Rules for deduction in masonry and RCC work
- Concept of Sinking fund
- EMD and SD
- Price variation clause
- Administrative approval

TURN OVER

4 A NOV 2010

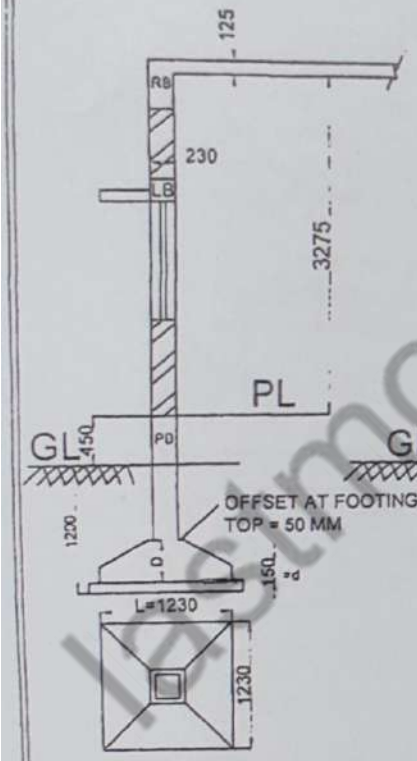


FLOOR PLAN



RCC LAYOUT PLAN AT PLINTH LEVEL

RCC LAYOUT PLAN AT ROOF LEVEL



TYP SECTION
@ C1- 230 X 230

TYP SECTION
@ C2- 230 X 350

SCHEDULE OF OPENING:

D = 1200 X 2100 MM
D1 = 1000 X 2100 MM
D2 = 750 X 2100 MM
W = 1500 X 1200 MM
V = 450 X 600 MM
O = ACTUAL WIDTH X 2100 MM HIGH

ALL WALLS = 230 MM THICK

DETAILS OF LINTEL AND CHAJJA:
LINTEL BEAM LB = 230 X 200 MM
BEARING OF LINTEL BEAM = 230 MM
BEARING OF CHAJJA = 100 MM
CHAJJA PROJECTION = 450 MM
CHAJJA THICKNESS = 100 MM

DETAILS OF BEAMS AND SLAB:
BEAMS AT PLINTH LEVEL
PB11 = 230 X 300 MM
PB8, PB10 = 230 X 600 MM
ALL OTHER PB = 230 X 450 MM
BEAMS AT ROOF LEVEL
RB11 = 230 X 300 MM
RB8, RB10 = 230 X 600 MM
ALL OTHER RB = 230 X 450 MM
SLAB = 125 MM THICK

SCHEDULE OF COLUMNS AND FOOTINGS:
C1 = 230 X 230 MM
C2 = 230 X 350 MM
F = L X B X d/D MM
F1 = 1230 X 1230 X 150/400 MM
F2 = 1230 X 1350 X 150/500 MM
OFFSET AT FOOTING TOP = 50 MM
PCC THICKNESS = 100 MM
PCC OFFSET = 100 MM