Q.P. Code: 25325

(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 given plan & section. (Fig.01)   **20**
- RCC(M20) upto Plinth Level (Footings, columns and plinth beams)
- Internal plaster in c:m 1:5, 15 mm th.
- Brick work in c:m 1:6
- Flooring and skirting

Q.2 A) Work out the plinth area of building shown in fig 01. Prepare an approximate estimate of the same assuming cost of construction of super structure as Rs.8000 / sqm.   **10**

B) What is pre bid meeting? Explain in brief from owner's and contractors' point of view.   **05**

C) Draft a typical tender notice for construction of Hostel building in a city area. The work is estimated to cost Rs. 10 crores, to be completed in 18 months.   **05**

Q.3. A) Explain how various factors affect rate of an item. Perform rate analysis for 15 mm thick Plastering work in cement mortar 1:4.   **10**

B) Define specification. Draft the detailed specification for First class work in cement mortar 1:5.   **10**

Q.4 A) Define and explain the purpose of BBS. Work out the quantity of materials (sand, cement, aggregate and steel) in PB5 of Fig 01. Top steel 2-12#, Bottom steel 2-12# Extra at Bottom of length 0.7L 2-16#, stirrups 8# @ 200 c/c.   **10**

B) The owner of a building gets a net annual rent of Rs. 35000. The future life of the building is estimated 12 years. But if recommended repairs are carried out immediately at an estimated cost of Rs. 3,00,000, it is expected to last for at least 30 years.   **10**

Assuming the rate of interest as 8%, and rate of interest on sinking fund 6%, determine whether it is economical to carry out the recommended repairs to the building or leave it as it is.

Q.5 A) Prepare a detailed estimate for earthwork for a portion of a road from the following data,: Formation width of road is 10 m, side slopes 2:1 in banking and 1.5:1 in cutting. Take the rates of earthwork as Rs. 125 per cum in banking and Rs. 130 per cum in cutting   **12**

Dist in m	0	100	200	300	400	500	600	700	800	900	1000	1100	1200
GL	114.5	114.75	115.25	115.2	116.1	116.85	118.00	118.25	118.1	117.8	117.75	117.90	119.50
FL	115	Upward gradient 1 in 200						Downward gradient 1 in 400					

B) List out types of contract and explain any one with its advantages and disadvantages and suitability.   **8**

Q.6 Write short notes on (any four)
- Mass haul diagram
- Rules for deduction in Plaster work
- Arbitration
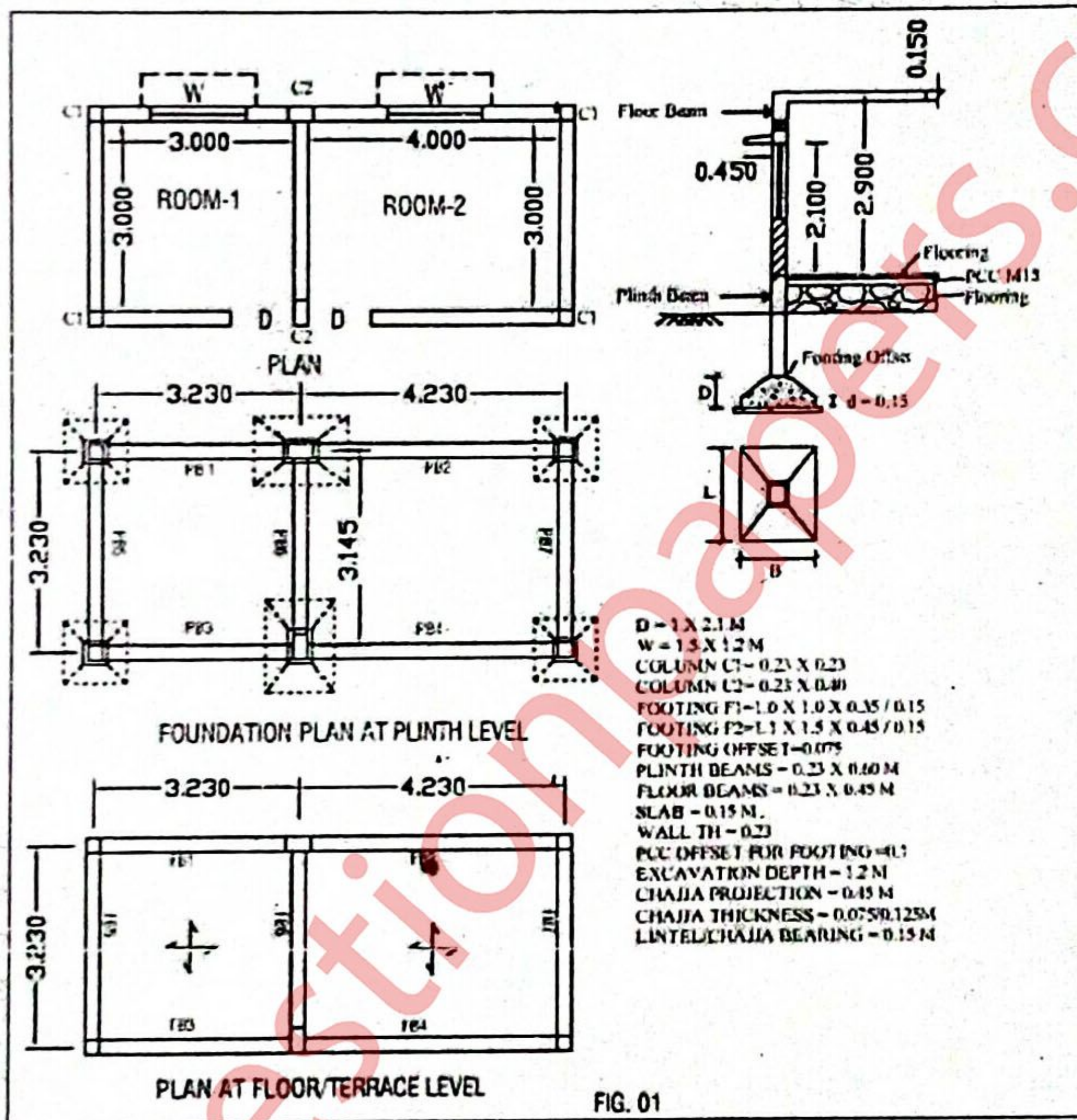- EMD and SD
- Price variation clause
- CBRI equations

PLAN

FOUNDATION PLAN AT PLINTH LEVEL

PLAN AT FLOOR/TERRACE LEVEL

D = 1 X 2.1 M
W = 1.5 X 1.2 M
COLUMN C1 = 0.23 X 0.23
COLUMN C2 = 0.23 X 0.40
FOOTING F1 = 1.0 X 1.0 X 0.35 / 0.15
FOOTING F2 = 1.1 X 1.5 X 0.45 / 0.15
FOOTING OFFSET = 0.075
PLINTH BEAMS = 0.23 X 0.60 M
FLOOR BEAMS = 0.23 X 0.45 M
SLAB = 0.15 M.
WALL TH = 0.23
PCC OFFSET FOR FOOTING = 0.1
EXCAVATION DEPTH = 1.2 M
CHAJJA PROJECTION = 0.45 M
CHAJJA THICKNESS = 0.075/0.125M
LINTEL/CHAJJA BEARING = 0.15 M

FIG. 01