

GANPAT UNIVERSITY**B. Tech. Semester: VI (CIVIL) Engineering****Regular Examination April – June 2016****2CI604-ESTIMATION & COSTING**

Time: 3 Hours

Total Marks: 70

- Instruction:** 1. Assume Suitable Data, if necessary.
2. Figure to the Right indicates Full Marks.

Section - I

- Que. - 1 (A) Using Centre Line method, Estimate the Quantities for following item of work for a Building shown in **Figure 1**. (1) Excavation in foundation. (2) Brickwork in foundation below G.L. 8
- (B) Prepare an Abstract Sheet for Quantities mentioned in above said Que-1 (A). 4

OR

- Que. - 1 (A) Using Centre Line method, Estimate the Quantities for following item of work for a Building shown in **Figure 1**. 8
(1) 2.5cm thick flooring at plinth
(2) Earth filling in foundation.
- (B) Prepare an abstract sheet for quantities mentioned in above said Que-1 OR (A). 4
- Que. - 2 (A) Calculate the Cement & Sand required for 20 m² of 12mm plaster work (1:6). 3
- (B) Write Rate Analysis of following items: 8
(1) Lime concrete in Foundation with 40 mm Stone ballast, White Lime and Sand (1:2:4) for 10 m³
(2) Cement Concrete (1:2:4) for 15 m³

OR

- Que. - 2 (A) Explain Plinth area estimate. 3
- (B) Write Rate Analysis of following items: 8
(1) Reinforced Brickwork (1:3) for 10 m³
(2) Random rubble masonry in superstructure for 10 m³ (1:6).
- Que. - 3 Estimates the following Quantities For RCC Beam as shown in **Figure 2**: 12
(1) Cement Bags, Sand and Coarse Aggregates (1:1.5:3).
(2) Bar Bending Schedule
Use suitable cover, hook length etc.

Section - II

- Que. - 4 (A) Estimates the quantities of Brickwork & Plastering required in 5 m long, 2.5m high & 40 cm thick wall. Also Calculate the cost if the rate of brickwork is 300 Rs /m³ & of plastering is Rs. 10 /m² 3
- (B) Prepare detailed estimate for earthwork for a portion of a road from the following data. RL of formation 100m. Upward gradient 1 in 300 up to 400m and downward gradient 1 in 250 for remaining length. Formation width of a road is 8 m, side slope 1.5:1 in banking and cutting. Adopt rates for Cutting 45 Rs /m³ and banking 40 Rs/m³. 9

Distance (m)	0	50	100	150	200	250	300
RL of Ground (m)	105.00	104.50	104.00	103.50	103.00	102.50	102.00

Distance (m)	350	400	450	500	550	600
RL of Ground (m)	99.00	98.50	98.00	97.50	97.00	96.50

OR

- Que. - 4 (A) Write down rules for deduction for doors and windows. 3

- (B) Calculate quantities for (1) Excavation (2) CC 1:2:4 in foundation and Wall (3) Steel in Foundation and Wall, of a R.C.C Retaining wall of 50 meters in length whose cross section is given in **Figure 3**. Take rate for Excavation as 40 Rs/m³, CC 1:2:4 as 4500 Rs/m³ and Steel Rs 50/Kg. Use suitable cover, lap length, hook length etc. 8
- Que. - 5 (A) Work out detailed specification for the following item of work: 3
- (1) Cement Concrete (1:2:4)
- (2) Brick Masonry
- (B) Write down the necessity of estimation. 3

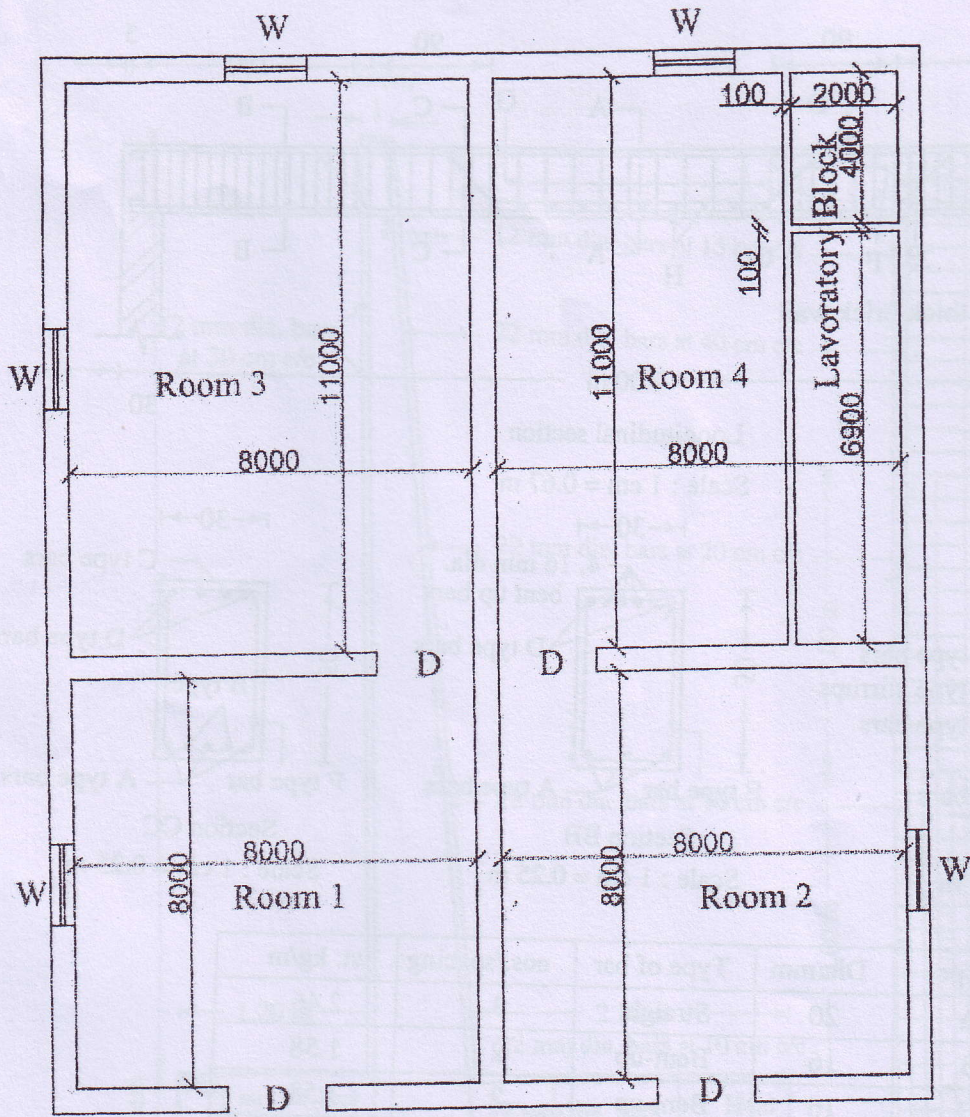
OR

- Que. - 5 (A) Work out detailed specification for the following item of work: 8
- (1) Color Washing
- (2) Reinforced Brickwork (R. B. Work)
- (B) Write down Principle of units for various items of estimation work. 3
- Que. - 6 (A) Prepare an estimate of a Surface Drain for 30 m length, shown in **Figure 4** for following items. (1) Earth work, rate 45 Rs/m³ (2) Brick masonry, Rate 600 Rs/m³, (3) CC 1:2:4, rate 3500 Rs/m³ (4) 12 mm cement plaster on top and external sides of masonry wall. All dimensions are in mm. 4
- (B) Calculate the quantity of earthwork of a portion of a channel with the following 8

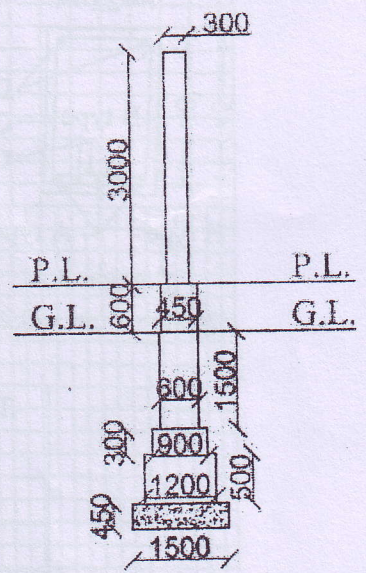
data:

Bed width = 5.0 m	Slope of digging = 1.5:1
Free board = 0.6 m	Full supply depth = 1.1 m
Slope of banking = 2:1	Top width of banks = 2.5 m (left) and 3.5m (right)
Rate of cutting = 45 Rs/m ³	Rate of banking = 40 Rs/m ³

Distance	0	50	100	150	200	250	300
Ground level in m	235.24	234.00	233.50	232.10	233.00	235.00	234.68
Bed level in m	234	233.85	233.00	231.52	232.78	233.70	233.94



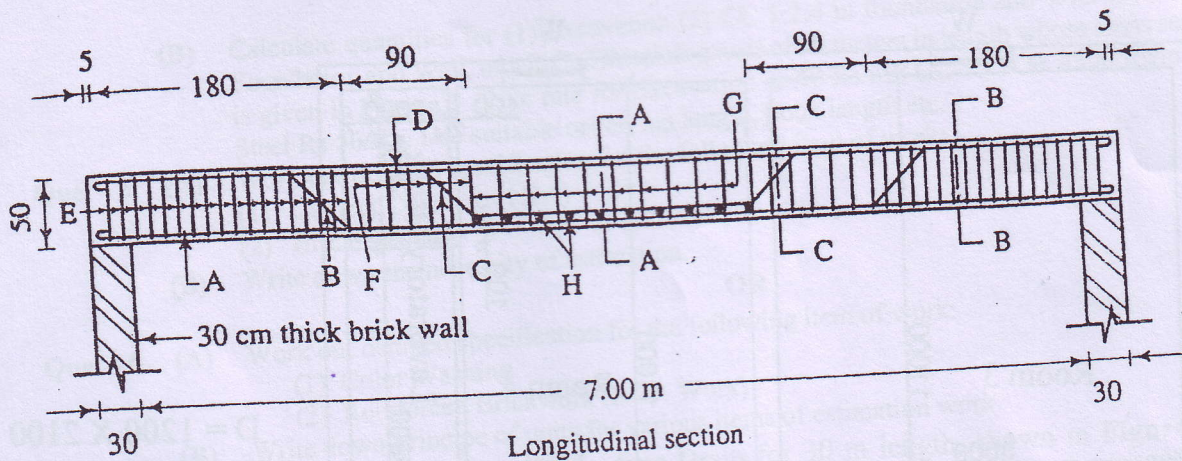
D = 1200 X 2100
 W = 1000 X 1500



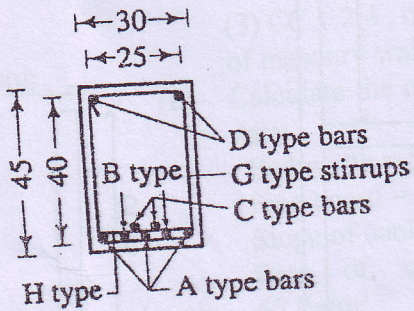
All dimensions are in MM

Foundation Details

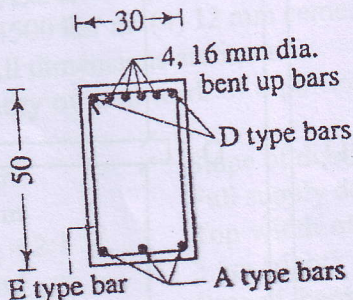
Figure 1



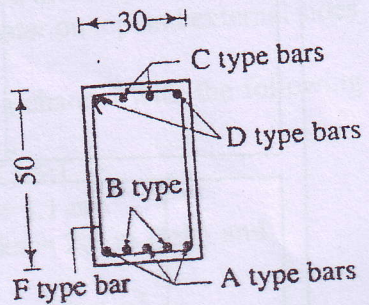
Longitudinal section
Scale : 1 cm = 0.67 m



Section AA
Scale : 1 cm = 0.25 m



Section BB
Scale : 1 cm = 0.25 m



Section CC
Scale : 1 cm = 0.25 m

Type	Dia.mm	Type of bar	nos./spacing	wt. kg/m
A	20	Straight	3	2.46
B	16	Bent-up	2	1.58
C	16	Bent-up	2	1.58
D	12	Anchor	2	0.89
E	10	Stirrups	10 cm c/c	0.62
F	8	Stirrups	15 cm c/c	0.39
G	6	Stirrups	20 cm c/c	0.22
H	20	Pins	21 cm c/c	2.46

All dimensions are in cm unless mentioned
Figure 2

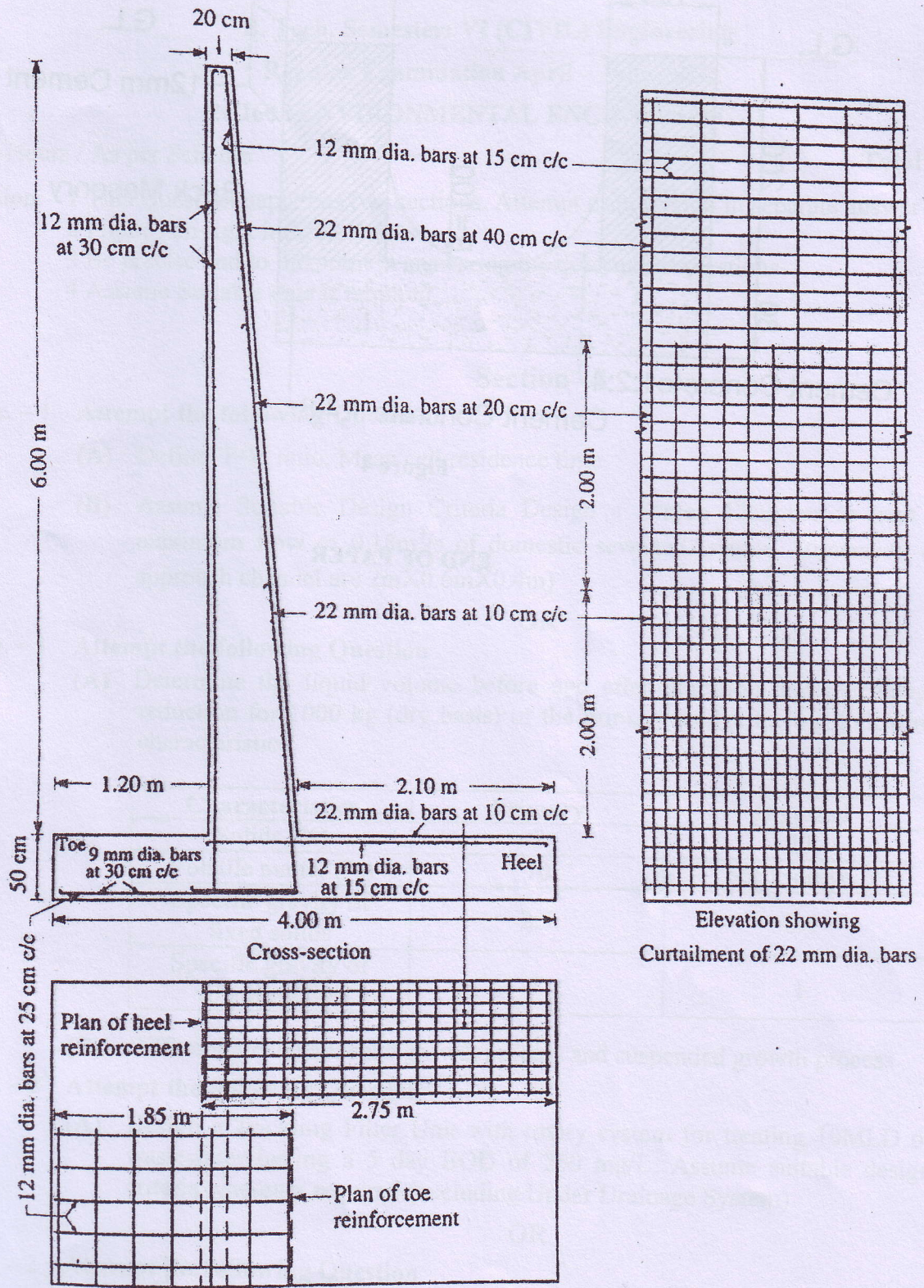


Figure 3

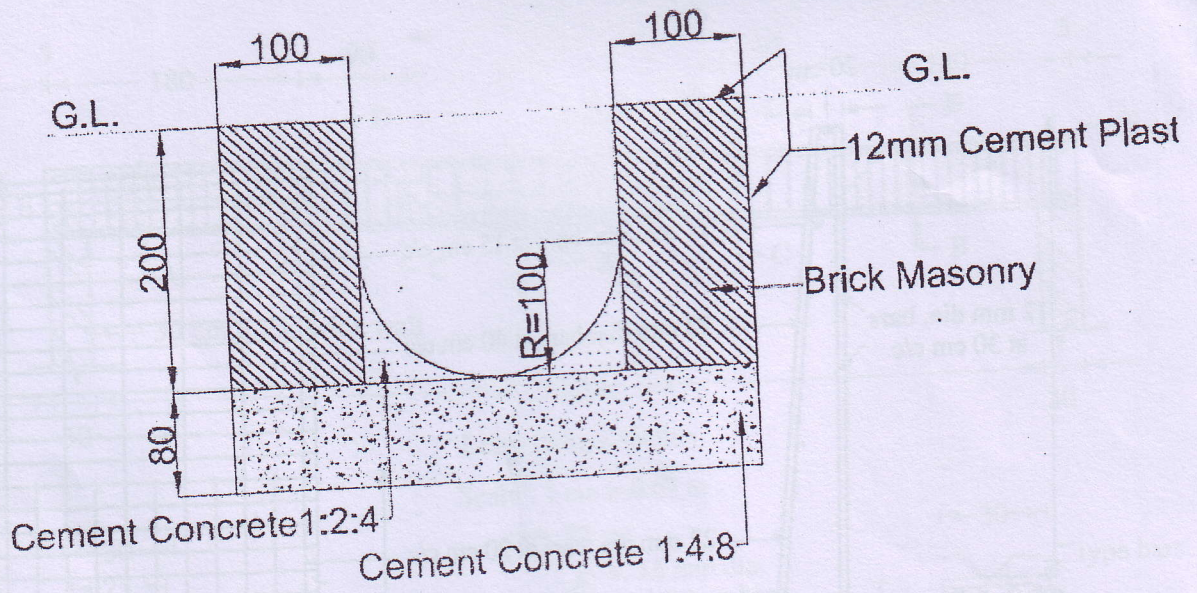


Figure 4

END OF PAPER