

B.E. Civil Engineering (Model Curriculum) Semester-VI  
**PCC-CE603 - Engineering Economics, Estimation & Costing**

P. Pages : 3

Time : Four Hours



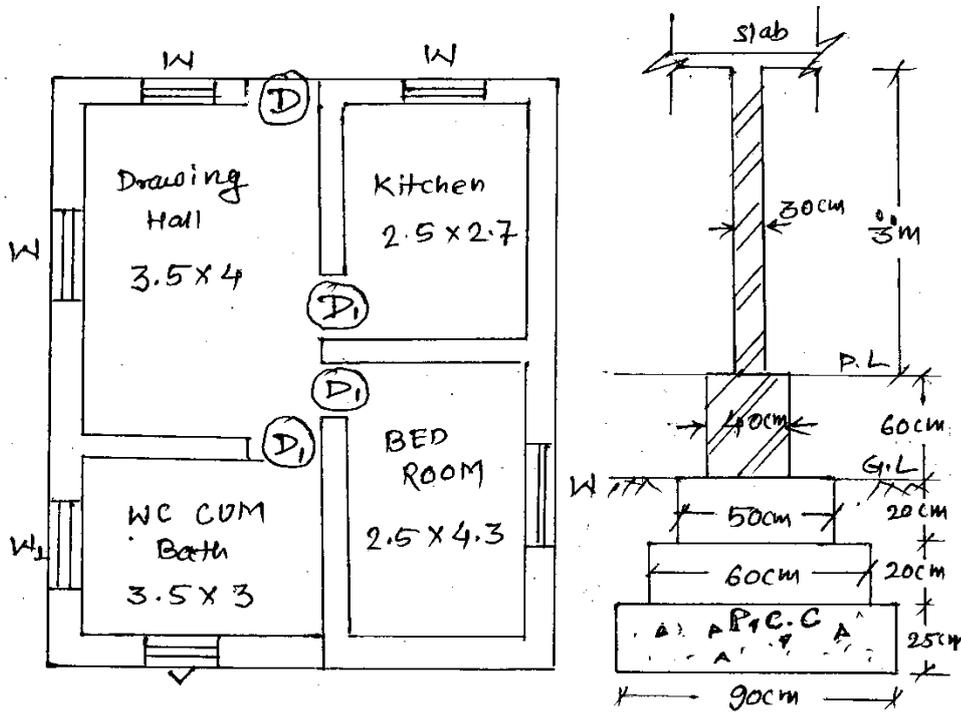
GUG/W/23/13731

Max. Marks : 80

- Notes :
1. All questions carry equal marks.
  2. Question No. 1 from Section A is compulsory.
  3. Assume suitable data wherever necessary.
  4. Illustrate your answers wherever necessary with the help of neat sketches.

1. Estimate the quantity for the following item of work for the given building plan & typical wall section. **16**

- i) Earth work in excavation in foundation work.
- ii) Brick Masonry in CM 1:5 in foundation & plinth
- iii) Cement concrete 1:4:8 mix
- iv) 12mm thick internal & External cement plaster in C. M. 1:4 for ceiling and wall.



Note :- All Dimension in Meter:

D = 1.2M x 2.1M

W = 1.5M x 1.5M

D<sub>1</sub> = 0.9M x 2.1M

W<sub>1</sub> = 1.2M x 1.5M

V = 0.9 M x 0.9M

**OR**

2. a) Prepare a preliminary estimate of Double storeyed building having carpet area of 1600m<sup>2</sup>. It may be assumed that 25% of building area will be considered for corridors and verandahs & 10% of area to be occupied by wall. **8**
- Given:-
- Plinth area rate :- Rs. 1550 per m<sup>2</sup>.
  - Water supply & sanitary work :- 8% of building cost
  - Electrical installation :- 12.5% of building cost
  - Contingencies : 10%

- b) Define preliminary (Approximate) estimate, object of approximate estimate & enumerate the method of approximate estimate. **8**

**OR**

3. a) Enlist the types of contract & explain any two with its merits & demerits. **8**

- b) Explain the terms “Administrative Approval” & “Technical sanction”. **8**

4. a) Define specification. Explain the various types of specification. **6**

- b) Write a detailed specification of the following items any two. **10**

- Second class brick masonry in CM 1:6 in super structure.
- Laying P. C. C. 1:4:8 mix in foundation.
- 12mm thick cement plaster in cement mortar in proportion 1:4.

**OR**

5. a) A R. C. C. simply supported beam of size 300mm x 450 mm is reinforced with 4 No's of 20 mm dia main bar are placed in one row & two bent up two anchor bars of 12 mm dia. are provided at top 8mm diameter stirrups are provided at 140mm/cc. The overall beam length is 6m. calculate the total quantity of steel required show bar bending schedule. **10**

- b) What do you understand by task work of a labour. Explain factor affecting task work. **6**

6. Calculate the quantity of earth work for hill road in the ground from following data:- **16**

- Formation width of road in banking: 12 meter.
- Formation width of road in cutting :10 meter
- Side slopes in banking :- 2:1
- Side slopes in cutting :- 1.5:1
- The distance between two station = 30 meter.

The height of filling & depth of cutting at centers of road & cross slopes are given below:-

Chainage (m)	0	30	60	90	120	150	180	270
Depth of cutting (cm)	60	70	50	40	-	-	-	-
Height of Banking (cm)	-	-	-	-	70	60	80	90
Cross slope of ground	10:1	12:1	15:1	12:1	10:1	15:1	12:1	10:1

**OR**

7. a) Write a short note on schedule of rates (any two). **6**
- b) Give rate analysis of the following:- **10**
- i) C. C (1:2:4) with 2.5% steel excluding shuttering? Centering.
  - ii) Brick masonry in C. M. (1:6) mix in superstructure.
  - iii) 12mm thick internal cement plaster in C:M 1:4
8. a) Define Depreciation. Describe in brief various method of depreciation. **6**
- b) A leasehold property is to produce a Net annual income of Rs. 15,000/- for the Next 20 years. The owner expects a return of 5% on his capital & also sets apart a sinking fund installment to accumulate 5% annually to replace the capital. Determine the capitalized value of property. **10**

**OR**

9. Write short notes on **any four**. **16**
- i) Value, cost & price
  - ii) Leasehold & freehold property
  - iii) Difference between Earnest money & security deposits.
  - iv) M.A.S Account.
  - v) Detail information in Tender Notice.

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