Full Marks: 70                                                 Time: 3 hours

(i) Use separate answer script for each half
(ii) Assume reasonable data if not supplied

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### FIRST HALF
(Answer Question No.1 and any **Two** from the rest)

1. A single storied office building is having two consecutive rooms of 3500 x 4500 and 4000 x 4500. The building is having masonry structure with 250 thick outer and internal walls above ground level. The depth of foundation trench is 750 wide and 900 deep. The plinth level is 600 above the ground level. The roof consists of a 125 slab and the ceiling is 3800 above the plinth. Each room is having one door of 1200 x 2100 at any of the outer walls and also one door at the internal wall between two rooms of same size. Each room is also having two windows of each 1000 x 1000 size. Lintels in cut pieces are provided over the doors and windows with 200 thresholds in each side. All through the brickwork damp proof course of 25 thick are provided. Estimate the quantities of following items of work. All dimensions are in millimeter.      [3+4+4+4]

    i)    Earthwork in excavation in foundation.

    ii)    25 thick damp proof course

    iii)    1:2:4 concrete for RCC work in slab and lintel.

    iv)    20mm cement plaster in internal and outer wall.

2. Write short note on any five of the following:

    (a) Belting Method, (b) Land locked land, (c) Tandem Plot, (d) Internal Aspects in Direct Capital Comparison, (e) Accounts Method of Valuation, (f) Owelty      [2 x 5]

3. A G+IV storied R.C.C. frame residential building, situated at Kolkata and constructed over a 250 sq m plot, have the following specifications:

    Gr. Floor = 100 sq m. Typical Floor = 130 sq m, Garage = 30 sq m, Mezzanine Floor = 30 sq m; height of GF, TF, Garage and MF are 3.4m, 2.9m, 2.1m and 2.1m respectively. Plinth height of Ground Floor is 0.9m and that of garage is 0.1m respectively. The foundation depth of the building is 2 m. only. There is a 2000 liter capacity Overhead Water Reservoir and no lift facility. The building was built in 2007. Calculate the cost of construction of the building in 2007. Assume any other data required to calculate the cost of construction of the building by CPWD Plinth Area Rate method.      [10]

4. (a) 750 sq m Ground Floor of a two storied R.C.C. frame building was constructed in 1994. The 600 sq m first floor of the same building was constructed in 2011. The cost of construction of a similar R.C.C. frame building in 1992 was Rs. 2810/- per sq m. If the Cost Indices of construction were 100, 124, 382 and 412 in the year 1992, 1994, 2011 and 2012 respectively, calculate the depreciated replacement cost of construction of the two storied building in 2012.

(b) The construction of a three storied R.C.C. framed building was started in 1998 and completed in 2000. The building was constructed on a 500 sq m. plot having FAR 3 and consuming the full FAR of the plot. 15% of the construction was done in 1998, 80% in 1999 and 5% in the year 2000. If the CPWD Cost Index of construction were 178, 192 and 212 in 1998, 1999 and 2000 respectively, calculate the cost of construction of the building as per CPWD Plinth Area Rate Method. [5 + 5]

## SECOND HALF
(Answer Question No.5 and any **Two** from the rest)

5. (a) What is the difference between a normal floor and a mezzanine floor?

(b) What is the difference between a Kitchen and a pantry?

(c) What are the permissible uses of basement as per KMC Building Rules?

(d) Why the roof-right of an apartment building cannot be sold in the Kolkata Municipal Corporation area?

(e) Differentiate between a loft and a ledge. [3x5]

6. Write short notes on any four of the following

(a) Bathroom, (b) Service Floor, (c) Garage, (d) Parapet, (e) Habitable Room [2½x4]

7. a) What do you mean by analysis of rate? [2]

b) A room of 3.0 m x 3.5 m is of 4.0m height from floor to ceiling. The wall is of 250mm thick brickwork and having two 1.0 m x 1.2m openings for windows and one 1.2m x 2.0m opening for a door. The skirting is 200 mm. Estimate the quantities of materials required for the following items of work of this room assuming reasonable values for all parameters. [8]

   i) First class brickwork in superstructure with 1:4 cement sand mortar and conventional bricks.

   ii) Artificial Stone Flooring with neat cement finish.

8. Discuss briefly [2 x 5]

   i) Revised Estimate
   ii) Abstract of Estimated Cost
   iii) Schedule of Rates
   iv) Service Unit Method
   v) Bay Method