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BCE-034

Diploma in Civil Engineering

Term-End Examination

December, 2010

01640

BCE-034 : ESTIMATING & QUANTITY SURVEYING - I

Time : 2 hours *Maximum Marks : 70*

Note : *Attempt five questions in all. Question no. 1 is compulsory. Assume suitable data, wherever required. Use of calculator is permitted.*

1. Write the correct answers from the given alternatives : **7x2=14**

   (a) For the calculation of volumetric quantity of earth work along road alignment, the formula for 'Average cross - sectional area method' is used :

   (i) $V = Am \times l$

   (ii) $V = \left(\frac{A_1 + A_2}{2}\right) l$

   (iii) $V = \frac{h_1 + h_2}{2} \times l$

   (iv) $V = (A_1 + Am + A_2)\ l$

(b) The long wall and short wall method is suitable for the calculation of items of :

(i) Building works

(ii) Road works

(iii) Canal works

(iv) River training works

(c) Dry Rubble Masonry wall is built by using stones and :

(i) Cement sand mortar 1 : 6

(ii) Lime Surkhi mortar 1 : 3

(iii) Mud mortar

(iv) No mortar

(d) For 12 m span, both - side sloped roof the suitable type of roof is :

(i) Couple closed roof

(ii) Collar beam roof

(iii) Queen post roof

(iv) King post roof

(e) Acceptable slump for RCC slab is :

(i) 1.27 cm to 2.54 cm

(ii) 15 cm to 17.50 cm

(iii) 5 cm to 10 cm

(iv) 20 cm to 25 cm

(f) Unit of measurement of V-grooved pointing on brick work is :

(i) Per metre (ii) Per m^2

(iii) Per m^3 (iv) Per kg

(g) In an estimate which of the following is not part of 'over head charges' :

(i) Compensatory Insurance for labour

(ii) Travelling expenses

(iii) Interest and Taxes

(iv) Cost of materials

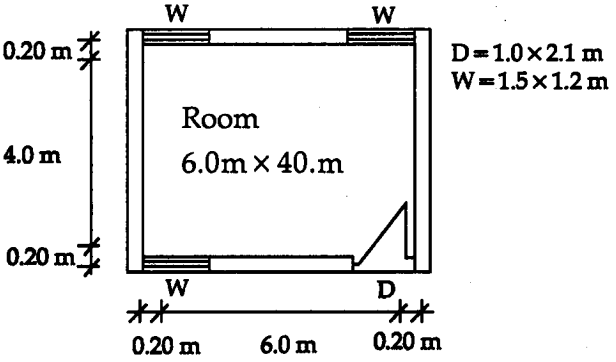
2. With the help of the given sketch calculate the following items : **4x3½=14**

(i) Quantity of RCC lintels over door and windows assuming bearing on walls 15 cm at each end and lintel thickness 10 cm.

(ii) 6 mm thick plaster with cement sand mortar 1 : 3 on RCC roof (flat) ceiling in room.

(iii) Cement concrete flooring in room including door sill.

(iv) Quantity required to be deducted from brick wall for door and windows openings.



PLAN OF SINGLE ROOM

3. Calculate the quantity of earth work in filling for a 70 m long railway track using 'Average Cross - Sectional Area method' with the help of given data : **1x14=14**

- Cross-sectional area at one end for earth filling $(A_1) = 30\ m^2$
- Cross - sectional area at other end for earth filling $(A_2) = 20\ m^2$.

4. Prepare the analysis of rates of ***any two*** of the following : **2x7=14**

(a) Cement concrete in foundations and under floors with 4 cm gauge brick ballast and fine sand in the proportion of 1 : 5 : 10 (cement : sand : brick ballast)

(b) First class brick work in lime and Surkhi mortar 1 : 2 in foundation and Plinth

(c) Second class brick work in mud mortar in super-structure.

(d) 12 mm thick, cement and sand mortar 1 : 6, plastering on brick work - including base preparation etc.

5. Differentiate between ***any four*** of the following :

(a) Plain cement concrete and reinforced cement concrete. **4x3½=14**

(b) Segmental Arch and Semi-circular Arch.

(c) Surface excavation and excavation for foundation trench of wall footings.

(d) Random Rubble Masonry and Dry Rubble Masonry

(e) Lump-sum contract and Percentage contract

(f) Cement Plastering and Painting

6. Write specifications for ***any two*** of the following : **2x7=14**

(a) First class brick work in cement sand mortar 1 : 4

(b) Ashlar Masonry with cement sand mortar 1 : 4.

(c) King Post Truss with steel sections

(d) Cement Plastering on brick work

7. Write short notes on ***any four*** of the following : **4x3½=14**

(a) Maintenance and repair works

(b) Estimation of over head charges

(c) Mixing of cement concrete

(d) Sloped roofs

(e) Mid-sectional Area Method of earth work along road alignment.

(f) Arch work in stone masonry.