

Diploma in Civil Engineering Term-End Examination June. 2007

BCE-042 : ESTIMATING & QUANTITY SURVEYING-II

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. Select the correct answer from the given alternatives. $7\times2=14$
 - (a) The detailed estimate of a project is
 - (i) estimate on plinth area basis
 - (ii) estimate on service unit basis
 - (iii) estimate on cost index basis
 - (iv) estimate on itemwise quantities basis
 - (b) Service unit for a prison building is
 - (i) per bed
 - (ii) per tenement
 - (iii) per cell
 - (iv) per seat



- (c) In quantity surveying billing is the process of
 - (i) writing items in tradewise manner from abstract sheet
 - (ii) collection of quantities of identical nature
 - (iii) booking of dimensions on the take-off sheets
 - (iv) measurement
- (d) One of the fundamental requirements of quantity surveying is
 - (i) to use ruled paper
 - (ii) to use plain paper
 - (iii) to use computer software
 - (iv) to observe the accuracy in measuring quantities
- (e) Analysis of rate of an item of work is prepared
 - (i) to calculate major factors
 - (ii) to calculate minor factors
 - (iii) to make advance payment to contractor
 - (iv) to determine the cost per unit of an item of work



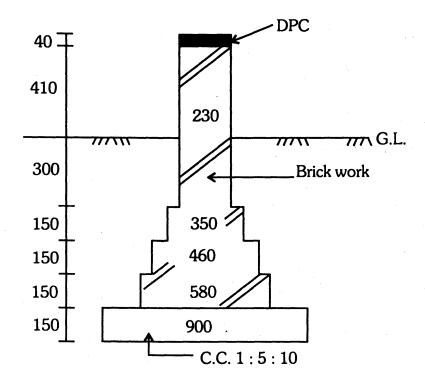
2.

mortar 1 : 6

proofing compound

(f)	The standard labour constant of mixing mortar by hand in brick work is for		
	(i)	Bhisti	
	(ii)	Mate	
	(iii)	Mazdoor	-
	(iv)	Carpenter	
(g)	Which of the following could be the part of 'Repair to Brick work'?		
	(i)	Earth work in surface dressing	
	(ii)	Filling available earth under floors	
	(iii)	Demolition of brick work	
	(iv)	Laying lean concrete under floors	
Calc	ulate	the following quantities from the given sketch for	
a ro	om h	aving internal dimensions 5000×4000 mm and	
one	door	opening of size $1000 \times 2100 \text{ mm}$:	14
(i)	Eart	h work in excavation in foundation trench	
(ii)	Cen	nent concrete 1:5:10 in foundation	
(iii)	Bric	k work in foundation and plinth with cement sand	

(iv) 40 mm thick D.P.C. of mix 1:2:4 including water



Note: All dimensions are in mm

- **3.** Prepare analysis of rate for the following items: $2 \times 7 = 14$
 - (i) Prorata analysis for 38 mm thick door shutter using following data:

Rates of 40 mm thick shutters —

Rs. 1400.00 per sq. m

Rates of 35 mm thick shutters —

Rs. 1200.00 per sq. m

(ii) Analysis of rate for cement concrete in foundations, fillings and mass concrete with mix 1:4;8 (40 mm graded stone aggregate). Assume suitable rates of labour and materials etc.



4. A building has the following types of doors, windows and ventilators:

Wooden windows fully glazed $1500 \times 1500 \text{ mm}$

— 8 nos

14

• Wooden door with flush shutters $1200 \times 2100 \text{ mm}$ — 4 nos

• Steel ventilators fully glazed $600 \times 450 \text{ mm}$ -4 nos

• Collapsible steel shutter $1500 \times 2100 \text{ mm}$ -2 nos

Calculate the painting area required for painting all doors, windows and ventilators.

- 5. The external dimensions of a building are 10000×6000 mm. Calculate the following: $4 \times 3\frac{1}{2} = 14$
 - (i) Plinth area of the building.
 - (ii) Surface excavation in soft soil assuming 3000 mm width from external face of building.
 - (iii) Plinth protection assuming 750 mm width.
 - (iv) Cost of plinth protection @ Rs. 200 per sq. m.
- **6.** Internal dimensions of a room are 4500×3500 mm and wall thickness 230 mm. It has two doors of size 1000×2100 mm and three windows of size 1000×1200 mm. Calculate the following: $4 \times 3\frac{1}{2} = 14$



- (i) Internal plastering on walls assuming ceiling height 3000 mm.
- (ii) Marble chips flooring.
- (iii) RCC in suspended floor (slab) taking full bearing on walls and thickness 120 mm.
- (iv) Sand filling in plinth under floor taking thickness 100 mm.
- 7. A beam of cross-section 250×600 mm is 6000 mm long. It has longitudinal reinforcement of 4 bars at bottom of 20 mm dia and 2 bars on top of 16 mm dia. Stirrups of 8 mm dia bars @ 250 mm c/c. Assuming end covers 50 mm and side, top and bottom cover to the reinforcement 25 mm, calculate $4 \times 3\frac{1}{2} = 14$
 - (i) Main reinforcement of beam
 - (ii) Reinforcement of stirrups
 - (iii) RCC 1:2:4 in beam
 - (iv) Centring and shuttering (form work) for beam taking full bearing of both ends on walls 230 mm thick and embedded (sides encased).