

Diploma in Civil Engineering

Term-End Examination

June, 2008

BCE-034 : ESTIMATING & QUANTITY SURVEYING-I

Time : 2 hours

Maximum Marks : 70

Note : Attempt *five* questions in all. Question number 1 is **compulsory**. Assume suitable data, wherever required.

1. Choose the correct answer from the given alternatives.

7×2=14

(a) The formula for computing quantities of earth work along road alignment by 'Average Cross-Sectional Method' is

(i) $V = A_m \times l$

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

(iii) $V = \frac{l}{6} (A_1 + A_m + A_2)$

(iv) $V = \left(\frac{h_1 + h_2}{2} \right) l$

- (b) R.L. of formation line of road depends on
- (i) Width of road formation
 - (ii) Side slope in cutting
 - (iii) Side slope in filling
 - (iv) Longitudinal falling or rising gradient of road formation
- (c) Earthwork of a canal is in cutting. The R.L. of 'canal bed' at any point will be
- (i) Less than R.L. of original ground
 - (ii) More than R.L. of original ground
 - (iii) Same as of original ground
 - (iv) None of the above
- (d) Blasting is required for cutting
- (i) Soft soils
 - (ii) Hard soils
 - (iii) Hard rocks
 - (iv) Mud
- (e) Half-brick wall masonry is generally used for construction of
- (i) Partition walls
 - (ii) Load bearing walls
 - (iii) Retaining walls
 - (iv) None of the above

- (f) In 'Dry Rubble Masonry' of a retaining wall, all the stone joints are filled with
- 1 : 3 cement and sand mortar
 - 1 : 6 cement and sand mortar
 - No mortar is filled
 - M-15 grade cement concrete
- (g) Muster Roll is used for
- Recording site instructions
 - Recording measurements of executed work
 - Recording test results of materials used
 - Recording attendance of daily labour employed

2. A 'Semi-Circular Arch' has the following dimensions :

$$4 \times 3 \frac{1}{2} = 14$$

- Inner radius of arch ring $r = 100$ cm
Thickness of arch ring $t = 20$ cm
Breadth of arch ring $b = 20$ cm

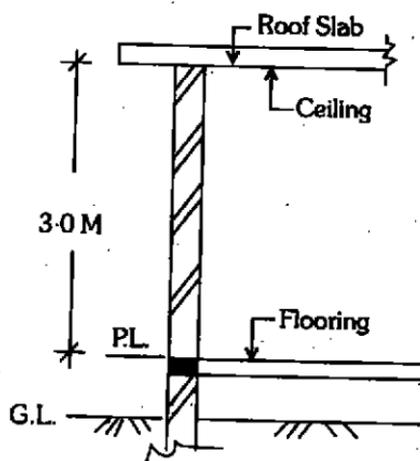
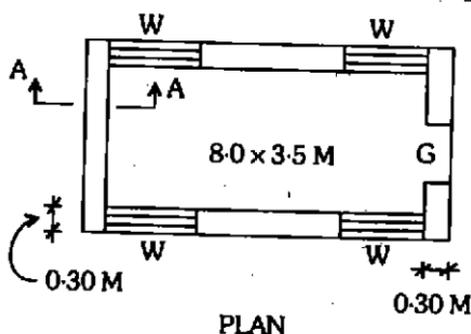
Calculate the following quantities :

- Central radius of arch ring
- Clear span of the arch
- Average length of arch masonry
- Brick masonry work in arch

3. Calculate the following quantities with the help of the given sketch :

2x7=14

- (i) Internal and external plaster on walls above plinth level and upto ceiling height
 (ii) 40 mm thick cement concrete flooring



Window $W = 1.00 \times 1.20 \text{ M}$

Gate $G = 1.50 \times 2.20 \text{ M}$

4. Prepare analysis of rates for any **two** of the following items : $2 \times 7 = 14$
- (i) First class brick work in Jack Arch in 1 : 3 cement and coarse sand mortar
 - (ii) Line concrete for foundations and under floors with 4 cm gauge brick ballast, white lime and surkhi in 100 : 16 : 32 proportion
 - (iii) Second class brick work in mud mortar in super-structure
5. Differentiate between any **four** of the following : $4 \times 3 \frac{1}{2} = 14$
- (i) Average cross-sectional area method and Mid-sectional area method for earth work in roads
 - (ii) Earth work in cutting and Earth work in filling
 - (iii) Cast-in-situ concrete work and Precast concrete work
 - (iv) Plain cement concrete and Reinforced cement concrete
 - (v) Cement plastering and Cement pointing
 - (vi) Lump-sum contract and Item rate contract
6. Write specifications for any **two** of the following : $2 \times 7 = 14$
- (i) Cement plaster on walls
 - (ii) Collapsible gates and shutters
 - (iii) First class brick work in superstructure
 - (iv) Ashlar masonry in stone work

7. Write short notes on any *four* of the following : $4 \times 3 \frac{1}{2} = 14$

- (i) Colour washing
- (ii) Estimation of overhead charges
- (iii) Placing reinforcement in RCC beam
- (iv) Class 'A' buildings
- (v) Half-brick wall masonry
- (vi) Jack arch roof in brick work