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**BCE-034**

# DIPLOMA IN CIVIL ENGINEERING DCLE(G) / DCLEVI

## Term-End Examination

00195 **December, 2014**

## BCE-034 : ESTIMATING AND 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. Use of calculator is permitted.*

**1.** Choose the correct alternative : *7×2=14*

(a) The formula for computing volume of earthwork along a road alignment by Prismoidal formula method is

(i) $\frac{l}{6}(A_1 + 4A_m + A_6)$

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

(iii) $\left(\frac{h_1 + h_2}{2}\right) l$

(iv) $A_m \times l$

(b) The units of measurement of earthwork in filling is

(i) $m^2$

(ii) $m^3$

(iii) per $m^2$

(iv) per $m^3$

(c) Which of the following is ***not*** a part of tender documents ?

(i) Set of specifications

(ii) Copy of tender notice

(iii) Measurement book

(iv) Set of conditions of contract

(d) Half-brick wall masonry is generally used for the construction of

(i) Retaining wall

(ii) Load bearing wall

(iii) Caissons

(iv) Partition walls

(e) Thickness of joints in brickwork shall not exceed

(i) 10 mm

(ii) 12·5 mm

(iii) 15 mm

(iv) 20 mm

(f) Length of long wall is

(i) Inner length of wall

(ii) Inner length of wall + 2 × wall thickness

(iii) CL length of wall

(iv) CL length of wall + 2 × wall thickness

(g) RL of formation line of a road depends on

(i) width of road formation

(ii) side slope in cutting

(iii) longitudinal falling or rising gradient of road formation

(iv) None of the above

**2.** (a) Explain the average cross-sectional area method of computing volumetric quantities of earthwork along a road alignment. *4*

(b) A stretch of road is 200 m long. For making the road, the earthwork is to be done in cutting. The cross-sectional area of earth in cutting is 35 $m^2$ and 45 $m^2$ at the ends respectively. Calculate the earthwork in cutting for the road. *10*

**3.** Calculate the quantity of brick masonry work for the following cases :

(a) A semicircular arch of clear span 2·50 m, and thickness of arch ring 40 cm, and wall thickness 40 cm. *7*

(b) A 60° segmental arch whose clear span (i.e. opening) is 2·0 m. Take the thickness of arch ring as 50 cm and wall thickness as 40 cm. *7*

**4.** (a) Describe the general specifications for pointing. *7*

(b) Describe the general specifications for earthwork in cutting. *7*

5. Calculate the cost for 10 $m^3$ of lime concrete in Roof Terracing with 2·5 cm gauge brick ballast, white lime and surkhi in 100 : 18 : 36 proportion. Assume the cost of materials suitably. *14*

6. Write short notes on the following : $4 \times 3\frac{1}{2} = 14$

   (a) Estimation of overhead charges

   (b) Centre Line method vs. Long and Short wall method

   (c) Concreting under water

   (d) Technical Sanction

7. Differentiate between the following : $4 \times 3\frac{1}{2} = 14$

   (a) Average cross-sectional area and Mid-sectional area method for earthwork in roads

   (b) Lead and Lift

   (c) Cement plastering and Cement pointing

   (d) White washing and Colour washing