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BCE-034

DIPLOMA IN CIVIL ENGINEERING

Term-End Examination

June, 2019

BCE-034 : ESTIMATING AND QUANTITY SURVEYING–I

Time : 2 Hours *Maximum Marks : 70*

Note : *Question No. 1 is compulsory. Attempt any* ***four*** *more questions from the remaining questions. Use of calculator is permitted. All questions carry equal marks.*

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

   (a) The formula for computing volume of earthwork along road alignment by "Average cross-sectional area" method is :

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

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

   (iii) $\frac{l}{6}(A_1 + 4A_m + A_2)$

   (iv) $A_m \times l$

(b) The units of measurement of earthwork in cutting is :

(i) m^2

(ii) m^3

(iii) per m^2

(iv) per m^3

(c) Least period for form work to remain in position in case of undersides of beams and arches with more than 9.0 m span is :

(i) 7 days

(ii) 21 days

(iii) 28 days

(iv) 365 days

(d) During earth excavation, articles found such as relics, coins, fossils etc. shall belong to the :

(i) Owner

(ii) Contractor

(iii) Engineer

(iv) Government

(e) Measurement Book is used for :

(i) Recording of work done

(ii) Recording of attendance

(iii) Recording of test results

(iv) Recording of site instructions

(f) Length of long wall is :

(i) Centre to centre length of wall + 2 × Wall thickness

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

(iii) Inner length of wall only

(iv) Wall thickness only

(g) King post truss is used upto span of :

(i) 27.00 m

(ii) 18.00 m

(iii) 9.00 m

(iv) 4.50 m

2. (a) Explain the average cross-sectional area method of computing volumetric quantities of earthwork along a road alignment. 7

(b) A stretch of road is 120 m long. For making the road the earthwork is to be done in cutting. The cross-sectional area of earth in cutting is 82 m^2 and 98 m^2 at both the ends respectively. Calculate the earthwork in cutting for road using "Average cross-sectional area method". 7

3. (a) Describe the general specifications of earthwork in road in cutting. 7

(b) What do you mean by estimates ? Discuss the data necessary to prepare an estimate for building works. 7

4. Calculate the cost of 10 m^3 of cement concrete with 40 mm gauge stone ballast, coarse sand and cement in 6 : 3 : 1 proportion. 14

5. (a) Explain the estimation of brick masonry in arches. 7

(b) Discuss the requirements of men and material for 10 m^3 first class brickwork in 1 : 6 cement sand mortar in foundation and plinth. 7

6. (a) Describe the various types of approval and sanction required before commencement of work. 7

(b) Discuss various types of contracts in vogue in PWD. 7

7. Write short notes on any *two* of the following : 2×7=14

(a) Work charged establishments

(b) Contract Documents

(c) Classification of works

(d) Work Order

8. Differentiate between the terms in any *two* of the following : 2×7=14

   (a) Original and Repair works

   (b) Earnest and Security money

   (c) Lump-sum and Item-rate contracts

   (d) Cement Plastering and Cement Pointing