

**BACHELOR OF ARCHITECTURE (B.Arch.)**

**Term-End Examination**

**December, 2018**

00173

**BAR-053 : ESTIMATING AND COSTING**

*Time : 3 hours*

*Maximum Marks : 70*

*Note : Question no. 1 is compulsory. Attempt any four questions from the remaining. All questions carry equal marks.*

*Choose the most appropriate answer from the given options in questions below :*

*7×2=14*

1. (a) Shallow thin and surface work is measured in
  - (i) Cubic unit
  - (ii) Square unit
  - (iii) Linear unit
  - (iv) None of the above
- (b) Dimensions of traditional brick in metric units are
  - (i) 22.0 cm × 11.0 cm × 7.0 cm
  - (ii) 22.9 cm × 11.2 cm × 7.0 cm
  - (iii) 23.0 cm × 11.0 cm × 7.5 cm
  - (iv) 23.0 cm × 11.5 cm × 7.5 cm

(c) Which of the following is *not* a method of building estimation ?

- (i) Individual wall method
- (ii) Centre line method
- (iii) Separate wall method
- (iv) Cubical method

(d) Which of the following methods of estimation gives accurate results ?

- (i) Mid-sectional area method
- (ii) Mean sectional area method
- (iii) Prismoidal formula method
- (iv) None of the above

(e) The analysis of rates is usually carried out for the unit of payment of a particular item of work under the following two heads :

- (i) Materials and Labour
- (ii) Materials and Machines
- (iii) Materials and Methods
- (iv) Machines and Labour

- (f) Voids in fine river sand is generally taken as
- (i) 28%
  - (ii) 30%
  - (iii) 35%
  - (iv) 43%
- (g) For making a 1 : 2 : 4 nominal mix of concrete in the past, the amounts of constituents were taken in terms of
- (i) weight
  - (ii) volume
  - (iii) shape
  - (iv) size
2. (a) Write a general specification for live concrete to be used in foundation. 7
- (b) Write a general specification for plastering with cement mortar. 7
3. (a) Write the names of various items involved in the estimate of a two-room building with front verandah. Write the units associated with those items while making an estimate. 7

- (b) A road in cutting has formation width of 3.5 m and side slopes 1:1.5. Distance between two chainage points is 250 m.  $h_1$  and  $h_2$  may be taken as 1.5 m and 1.1 m respectively. Find the volume of earthwork in cutting by using trapezoidal rule. 7

4. Write short notes on any *two* of the of the following :  $7 \times 2 = 14$

- (a) Sinking Fund
- (b) Determination of Depreciation
- (c) Report on the Estimate for a Road Construction
- (d) Tender Notice

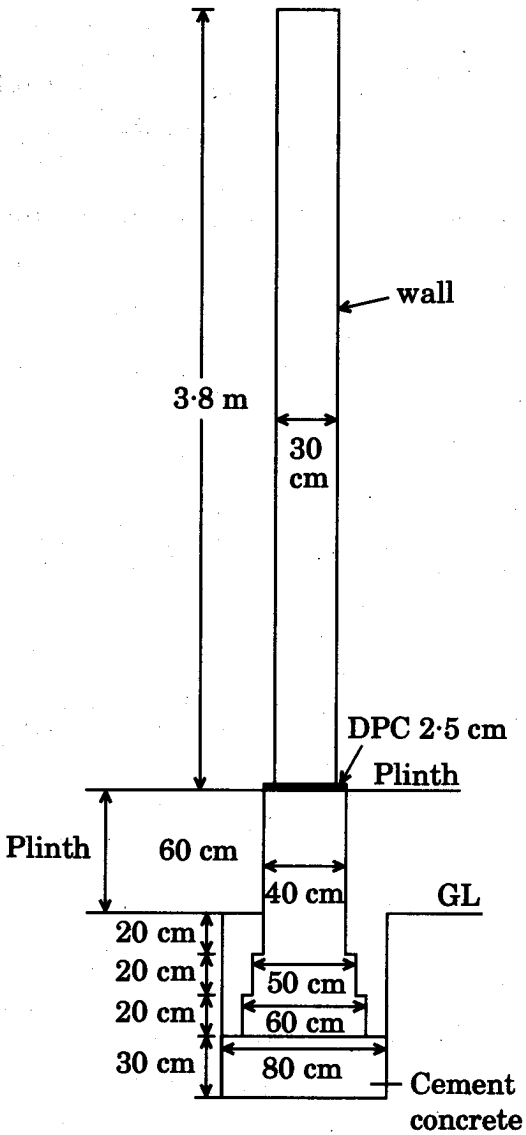
5. (a) What are the types of contract systems ? Explain any one briefly. 7

(b) Discuss briefly the utility of a bar bending schedule. 7

6. (a) The arch of a culvert, subtends an angle of  $120^\circ$  at the centre. The span of the arch is 5 m and thickness of the arch is 60 cm. The length of the arch is 8.0 m from face to face. Determine the quantity of arch masonry work and cement plastering in the soffit of the arch. 7

- (b) The cross-section of a 5.0 m long wall is given in Figure 1. Estimate the quantity of brickwork and plastering.

7



**The general specifications are as follows :**

- (i) Cement concrete foundation**
  - (ii) DPC – 1 : 1.5 : 3 in concrete**
  - (iii) I<sup>st</sup> class brickwork**
  - (iv) Cement mortar for all work**
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