00285

DIPLOMA IN ELECTRICAL AND MECHANICAL ENGINEERING

Term-End Examination

June, 2012

BET-038 : ESTIMATING AND QUANTITY SURVEYING

Time : 2 hours *Maximum Marks : 70*

Note : *All questions of **Section 'A'** are **compulsory**. Attempt **any two** questions from **Section 'B'** and **any two** questions from **Section 'C'**. Use of calculator is permitted.*

SECTION - A

All questions compulaory.

1. State '***True***' or '***False***' for the following statements : **1x8=8**

(a) There is no difference between preparation of 'Rough Indication of Cost, and 'Approximate Estimate'.

(b) MES SSR Part I and II are independent of each other while preparing estimates.

(c) Cement stored in bags must be stored in a haphazard manner.

(d) 'RCCB' and 'ELCB' are used for different purposes and are different in operation from each other.

(e) Earth resistance cannot be reduced by increasing the size of earth electrode.

(f) An MCB is a mechanical device.

(g) The terms 'Luminous Flux' and 'Illumination' mean the same.

(h) MES SSR Part I varies from area to area.

2. Write short notes on ***any three*** of the following : **2x3=6**

(a) MES SSR Part I

(b) MCCB

(c) Purpose of earthing

(d) Concreting under water

(e) Plastering and its purpose

(f) Classification of ordinary buildings.

SECTION - B

Attempt **any two** questions :

3. (a) What are important points to be observed while erecting an overhead line ? 7

   (b) What are types of Insulators ? 7

4. (a) Explain the purpose and working of 'MCB' and 'MCCB'. Tabulate the major differences between MCB and MCCB. 7

   (b) An external electrification scheme has to be planned for feeding a load of 30kW. The specification are: 7

   (i) Length of line - 750 mtrs.

   (ii) Supply - 415 V/240 V, 0.8 p.f. lagging

   (iii) 3 phase, 4 wire, vertical configuration system.

   (iv) Span between 2 poles - 50 mtrs.

   (v) Size of conductor - ACSR $6/1 \times 2.59$ weasel.

   Calculate the following :

   (i) Number of 8 mtr. PCC poles required

   (ii) Current in the circuit carried by the overhead lines.

   (iii) Length of ACSR conductor required.

   (iv) Nos. of LT shackle insulaters required.

   (v) Draw a line plan of the proposed scheme.

5. (a) Explain the terms 'Coefficient of Utilization' or 'Utilization Factor'. Calculate the number of TWIN tube light fittings required in a large hall of 30 Mtr. × 10 Mtr. given the following: 7

(i) Required illumination - 250 lux.

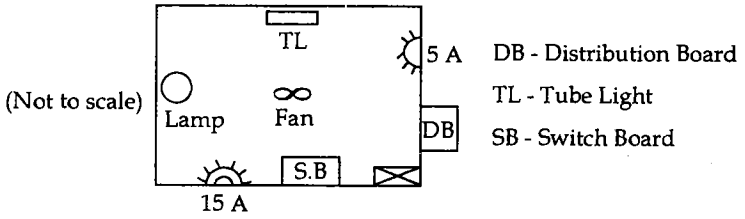
(ii) Wattage of each tube light - 40 Watts.

(iii) Output of each tube light - 2400 Lumens

(iv) Coefficient of utilization - 0.5

(v) Maintenance factor - 0.9

(b) Draw the 'schematic' and 'wiring' diagram of the plan of room shown below: 7



All connections must start from DB.

SECTION-C

Attempt **any two** :

6. (a) Explain, how earthwork is estimated in building foundation by 'Long Wall' and 'Short Wall' method ? Explain it's similarity with 'centre - line' method with the help of a diagram. **7**

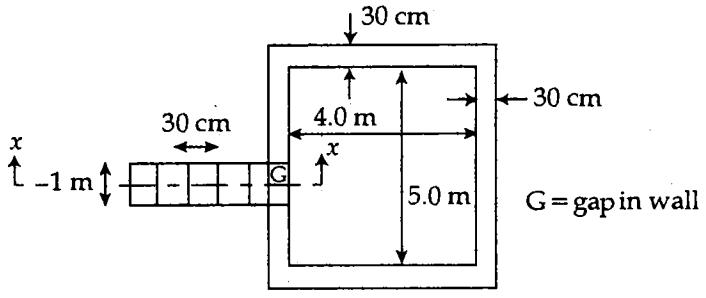
   (b) Explain the following : **7**

   (i) Earthwork involved in laying of pipes and cables.

   (ii) Four important considerations regarding formwork for concreting above plinth level in building.

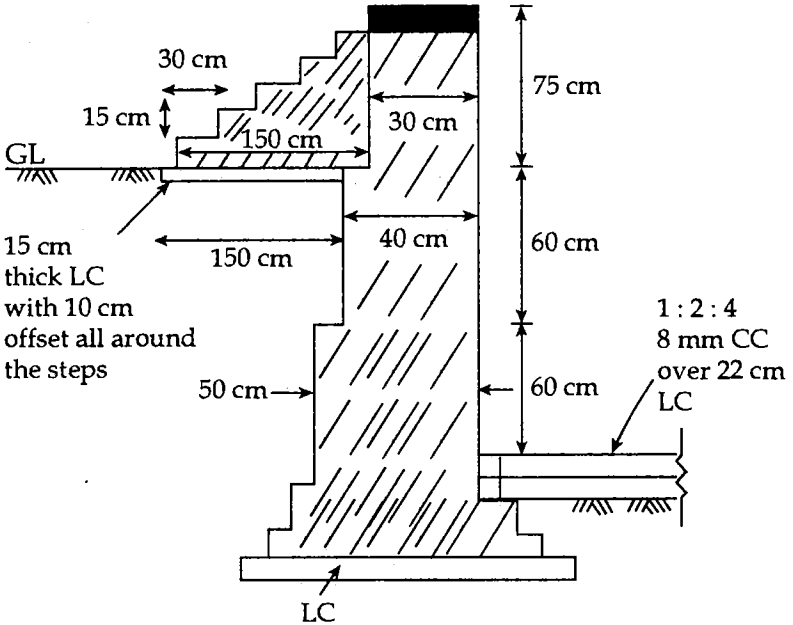
   (iii) 'Average Cross - Sectional Area' method for calculation of earthwork in long trenches.

7. A brick masonary water tank (partly underground) is to be plastared with local cement - sand mortar. Calculate the quantity of 1:2 CM (Cement Mortar) if 12 mm thick plaster is required an inside wall surfaces. **14**



Plan at Top Level

(Not to scale)



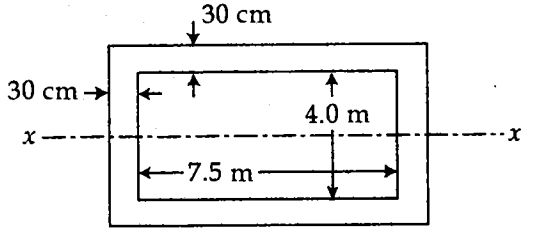
Section X - X

(Not to scale)

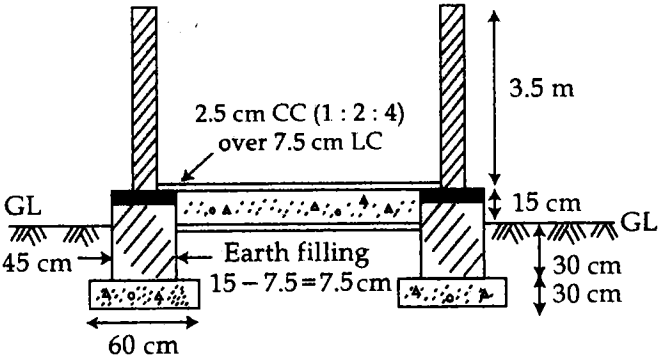
Tabulate results as :

Item	Nos	Measurement			Quantity
12 mm thick cm (1 : 2) on inside surface of wall		L (m)	B (m)	H/D m	
				Total	

8. An open water tank has to be constructed overground with 1st Class Brick work in 1 : 6 Cement Sand mortar in plinth and foundation as per plan and section below : 14



Plan (Not to scale)



Section at x – x

(Not to scale)

It is also to be plastered with 13mm thick plaster on inside and outside walls in cm (1:6).

Estimate the Ist Class Brickwork required only in plinth and foundation by both centre - line method and long and short wall method. Also estimate the plastering work.

Assume any other data as may be necessary clearly mentioning the assumption.
