BET-038

Diploma in Electrical and Mechanical Engineering

Term-End Examination

June, 2008

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

1. State 'True' or 'False' for the statements given below : *8×1=8*

(a) Basic objective of an estimate is to deduce the time required for a project.

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

(c) Temperature stresses and mechanical strength are not important while planning for insulation material for cables.

(d) Mounting height of luminaries is normally 5·0 cm.

(e) External plastering of a building is also called 'rendering'.

(f) Cast-in-situ concrete work can be plain or reinforced.

(g) To reduce aeration, cement should be stored in bulk, wherever possible.

(h) 'Painting' is a preventive and decorative measure in the absence of external plaster.

2. Write short notes on any ***two*** of the following : 2×3=6

(a) Slump test

(b) Purpose of MES SSR Part II

(c) Method of reducing Earth Resistance

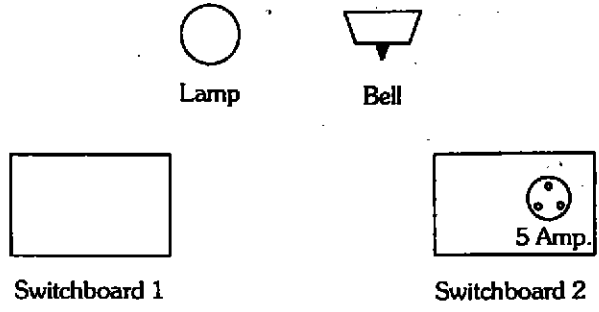
(d) Purpose of 'feeder', 'distributor' and 'service main' in external electrification

SECTION B

*Attempt any **two** questions.*

3. (a) Explain briefly the purpose of MCCB, and give its working. 7

(b) Draw the wiring diagram only to control one lamp, one bell from one switchboard and one 5 amp socket from second switchboard. All the points are on the same sub-circuit. Each point is controlled by an independent switch. 7



4. (a) Define 'Luminous Intensity' and 'Illumination'. Give their units also. 6

(b) Calculate the number of 'TWIN TUBE LIGHT FITTINGS' of 40 watts each for a large room of 30 mtr × 10 mtr and a required illumination level of 250 lux ('O' = 2400 lumens). 8

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

(b) A 1 km long LT overhead distribution line, 3-phase 50 Hz is to be erected from a 125 kVA pole mounted substation. PCC poles of 8 mtr length are to be used. Span between adjacent poles is 50 meters. 6/1 x 2·59 mm ACSR conductor is to be used for 3-phase wires and 6/1 x 2·11 ACSR is to be used for neutral wire. Calculate the following :

(i) Number of poles required

(ii) Assuming vertical configuration, number of LT shackle insulators required for the poles.

(iii) Length of ACSR conductors required for phase wire and for neutral wire. 7

6. (a) What are the forces likely to act on the pipes used for a water supply scheme ? 7

(b) What are the design considerations for planning fire hydrants in a building ? 7

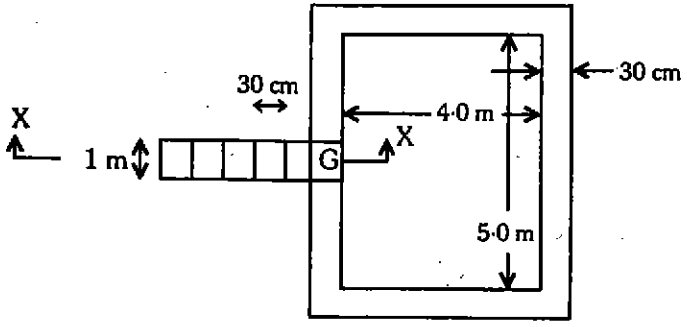
SECTION C

*Attempt any **two** questions only.*

7. (a) Explain calculation of earthwork in building foundation by "Long wall" and "Short wall" method. 9

(b) List any five general considerations regarding plastering in buildings. 5

8. A brick masonry water tank (partly underground) is to be plastered with local cement – sand mortar. Calculate the quantity of 1 : 2 CM (cement mortar), 12 mm thick plaster on inside wall surfaces. 14



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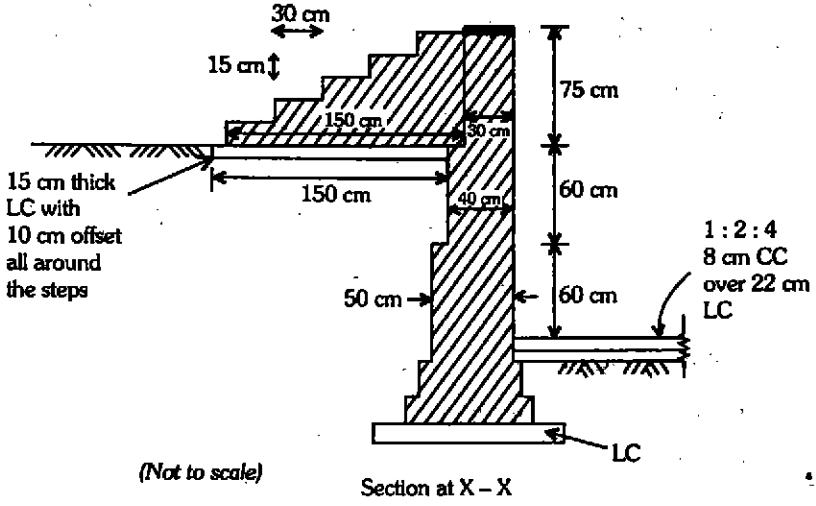
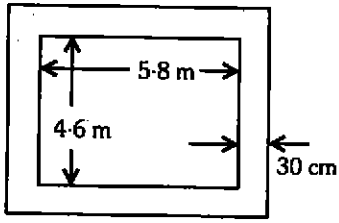
Plan at Top Level



Compute in a tabular form :

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

9. A simple brick masonry platform has to be plastered over outside face of walls with 13 mm thick plastering in CM (1 : 6) upto 10 cm below GL. Compute the required quantity of this plastering as per format given. *14*



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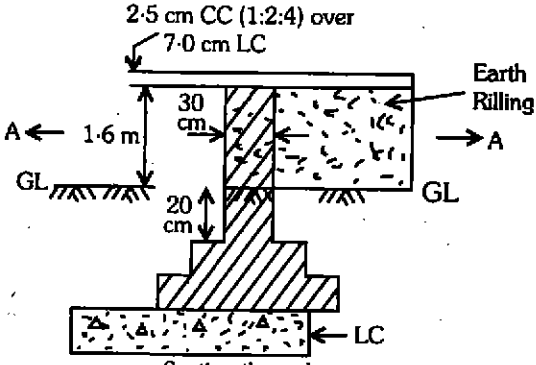
Section Plan A – A



Section through a wall of the platform

(Not to scale)

Compute in a tabular manner :

Item	No.	Measurement			Quantity	Remarks
		L(m)	B(m)	H/D(m)		
13 mm thick plastering as specified						
				Total		