R16/R15/R13/R09

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech IV Year I Semester Examinations, March - 2021
R16 - ESTIMATION, QUANTITY SURVEYING AND VALUATION/
R15/R13/R09 - ESTIMATING AND COSTING
(R16 – Civil Engineering; R15 - Civil Engineering; R13 - Civil Engineering;
R09 - Civil Engineering)

Time: 3 Hours

Max. Marks: 75

Answer any Five Questions
All Questions Carry Equal Marks

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1. Explain the following general items of work involved in the estimation for a building along with the process of calculations.
   a) Earthwork in excavation.
   b) Earthwork in filling.
   c) Brick flat soling.
   d) Cement concrete in foundation.
   e) Masonry work in foundation.
   f) Damp proof course.
   g) Masonry work in superstructure.
   h) 10 cm thick brickwork.   [15]

2.a) Explain the earthwork in excavation in foundations of buildings by
   i) Long wall – Short wall method.
   ii) Centre line method
   b) Enumerate the different methods of building estimates and explain them.   [10+5]

3. Prepare a detailed estimate for earthwork for a portion of a road from the following data,

Distance in m	RL of ground	RL of the formation 115.00
0	114.50	Upward gradient 1 in 200 up to 600 m
100	114.75	
200	115.25	
300	115.2	Downward gradient 1 in 400
400	116.10	
500	116.85	
600	118.20	
700	118.45	
800	118.35	
900	117.10	
1000	117.80	
1100	117.90	
1200	117.50	

Formation width of road is 8m, side slopes are 2:1 in banking and 1 1/2:1 in cutting.[15]

4.a) Prepare rate analysis for
   i) RCC work in slabs 1:2:4.
   ii) 1st class brick work in superstructure with 1:6 CM
  b) Calculate the rate of 2.5 cm thick D.P.C with cement and sand in (1:2).   [10+5]

5.a) Explain the method of valuation of a building along with an example by valuation based on profit.
  b) Discuss various types of contracts in construction along with their suitability.
  c) Explain different methods of depreciation.   [5+5+5]

6. The formation width of a road embankment is 10.0m. The side slopes are 2.5:1. The depths along the center line of road at 40.0 m intervals are 1.2, 1.1, 1.4, 1.2, 0.9, 1.5 and 1.0 m. It is required to calculate the quantity of earthwork by Prismoidal rule.   [15]

7.a) Explain the Prismoidal formula and Mean - sectional area method
  b) Derive the formulae for earthwork in the following situations:
   i) Partly in cutting and partly in banking (ii) when transverse slope existed.   [8+7]

8. A building is situated by the side of a main road of Mumbai city on a land of 600 sq.m. The built-up portion in 25 m × 30 m. The building is first class type and provided with water supply, sanitary and electric fittings, and the age of the building is 30 years. Workout the valuation of the property. Assume plinth area rate is Rs. 400 and cost of land as Rs. 7000 per sq.m.   [15]

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