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**INSTITUTE OF TECHNOLOGY AND MANAGEMENT**

(AN AUTONOMOUS INSTITUTION)

(Approved by AICTE, New Delhi & Affiliated to JNTUH, Hyderabad)

Accredited by NBA and NAAC with 'A' Grade & Recognized Under Section 2(f) & 12(B) of the UGC act, 1956

IV B.Tech I Sem Regular End Examination, November 2022

**Estimation, Costing and Project Management**

(CIVIL)

**Time: 3 Hours.**

**Max. Marks: 70**

Note: 1. Question paper consists: Part-A and Part-B.

2. In Part – A, answer all questions which carries 20 marks.

3. In Part – B, answer any one question from each unit.

Each question carries 10 marks and may have a, b as sub questions.

**PART- A**

**(10\*2 Marks = 20 Marks)**

- |       |  |    |     |      |
|-------|--|----|-----|------|
| 1. a) | Explain Plinth area estimation.  | 2M | CO1 | BL 2 |
| b)    | Write the units of measurement of the following items of work.   | 2M | CO1 | BL 1 |
|       | (a) Earth work excavation  |    |     |      |
|       | (b) R.C.C for footings   |    |     |      |
|       | (c) Masonry Work.  |    |     |      |
|       | (d) Plastering   |    |     |      |
| c)    | Explain the terms lead and lift for the formation of roads   | 2M | CO2 | BL 2 |
| d)    | Find the volume of earth work in road embankment of length 100m top width is 7.0m, depth 3.5m and side slopes 2:1. | 2M | CO2 | BL 3 |
| e)    | Explain about the uses of standards measurement book.  | 2M | CO3 | BL 2 |
| f)    | Mention general specifications for flooring of a 1 <sup>st</sup> class building.                                   | 2M | CO3 | BL 1 |
| g)    | What is meant by depreciation?   | 2M | CO4 | BL 1 |
| h)    | What are the different purposes for which the valuation is undertaken?   | 2M | CO4 | BL 2 |
| i)    | Define (a) event and (b) critical path.  | 2M | CO5 | BL 2 |
| j)    | Explain briefly the necessity of construction schedule.  | 2M | CO5 | BL 3 |

**PART- B**

**(10\*5 Marks = 50 Marks)**

- |      |   |    |     |      |
|------|---|----|-----|------|
| 2 a) | Differentiate between detailed estimate and abstract estimate | 5M | CO1 | BL 2 |
| b)   | Describe general items of works for building construction.    | 5M | CO1 | BL 2 |

**OR**

- 3 a) Calculate the quantity of earth work excavation for foundation. For the 5M CO1 BL5 following Figure.1

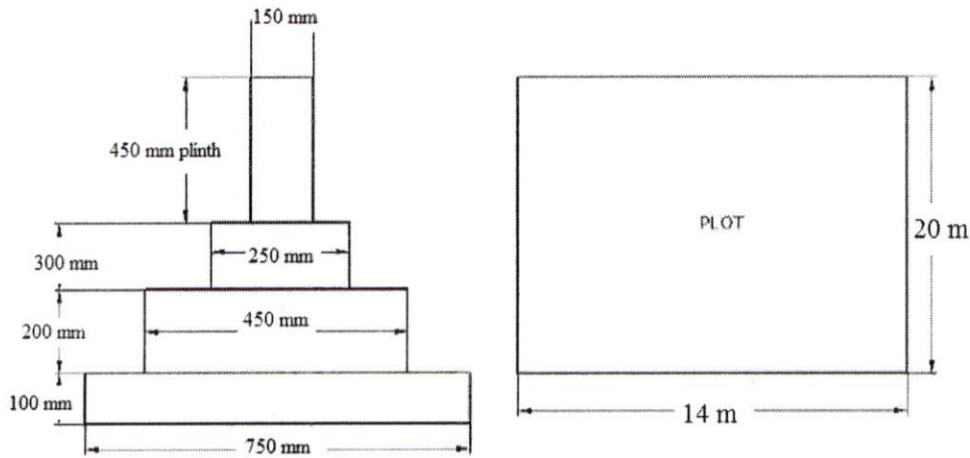
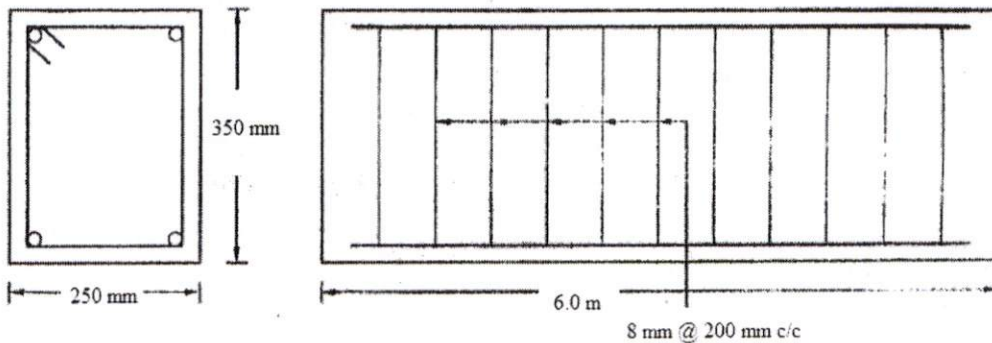


Figure . 1

- b) Calculate the quantity of RR masonry required for foundation and plinth, for the Figure.1 5M CO1 BL5
- 4 a) The contour levels and contour areas of a depression are given below. The bed level of the depression is at 80 m contour and is to be filled up to 86m. Calculate the earthwork quantity by using Trapezoidal rule. 5M CO2 BL5

Contour level in m	80	81	82	83	84	85	86
Area of contour in sq.m	88	94	100	108	120	132	140

- b) Prepare Bar Bending Schedule and estimate the quantity required for a simply supported beam shown in the below figure, take end cover as 25 mm. 5M CO2 BL6



Top and Bottom reinforcement are 2 No's of 20mm diameter

OR

- 5 a) Explain "Trapezoidal rule" and "Prismoidal rule" with usual notations 5M CO2 BL2
- b) Prepare Bar Bending Schedule and estimate the quantity of stirrups of 6 mm dia for a column of size 300 mm × 300 mm. The spacing of stirrups is 210 mm c/c, total height of column is 3.3 m and unit wt of rod is 0.23 kg/m. Take Concrete cover is 40 mm. 5M CO2 BL6

- 6 a) Give the purpose, requirements and importance of rate analysis. 5M CO3 BL 4  
 b) Work out the rate analysis of the following items. 5M CO3 BL 5  
 1. 230 mm wall in CM 1:2 on ground floor of height 3.0 m and length 3.0 m  
 2. Cement Plaster 12 mm thick in CM 1:3 on ground floor of height 3.0 m and length 3.0 m

OR

- 7 a) Calculate the rate for a one and half thick brick wall of dimensions length = 20 m, height = 3.3 m and thickness of 30 cm. Assume the rates as per SSR. 5M CO3 BL 5  
 b) Calculate the rate for 1 m<sup>3</sup> of cement concrete of 1:1.5:3 5M CO3 BL 5
- 8 a) Explain types of contract. 5M CO4 BL 2  
 b) Differentiate between Salvage Value and Scrap Value. 5M CO4 BL 3

OR

- 9 a) Describe the detailed specifications of RCC slab (1:2:4), DPC (1:1.5:3) 5M CO4 BL 2  
 b) Explain various steps involved in tender system. 5M CO4 BL 2
- 10 a) Write the limitations of Gantt chart and explain in detail. 5M CO5 BL 1  
 b) Write the advantages of CPM network in execution of a project. 5M CO5 BL 3

OR

- 11 The following project has eight activities and the expected time of each activity is given below 10M CO5 BL 6

Activity	1 - 2	1 - 3	1 - 4	2 - 5	3 - 5	4 - 6	5 - 7	6 - 7
Expected time in days	2	3	5	4	3	2	2	3

(a) Draw network diagram;

(b) Identify the critical path.

(c) Draw the table showing EST, LST, EFT and float.

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CO-Course Outcome

BL - Blooms Taxonomy Levels