



R18 Regulation

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A' Grade)

Subject code:2P7AA

B.Tech VII Semester Regular/Supplementary Examinations, November 2022

ESTIMATION & COSTING (Civil Engineering)

Maximum Marks: 70

Date:01.12.2022

Duration: 3 hours

- Note:
1. This question paper contains two parts A and B.
 2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
 3. Part B consists of 5 Units. Answer any one full question from each unit which carries 10M.
 4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A

All the following questions carry equal marks

(10x2M=20 Marks)

- 1 A single room building is having 3.60 m x 6.00 m internal dimensions with 300 mm thick wall and height of room is 2.30 m. Calculate: (i) Plinth area. (ii) Brick work for single room without considering of deductions for super structure.
- 2 Tabulate formats neatly of detailed estimate and abstract estimate separately.
- 3 Define Overhead charges & Contingent charges?
- 4 Write short notes on analysis of rate?
- 5 Draw the typical cross section of the road in cutting and derive the expression for volume?
- 6 What is Lead & Lift in Earthwork Calculations?
- 7 What is the Unit weight of 12mm diameter steel bar?
- 8 Write the formulae for total length of the cranked bar in a slab?
- 9 Write short note on scrap value
- 10 What is years purchase?

Part-B

Answer All the following questions.

(5X10M=50Marks)

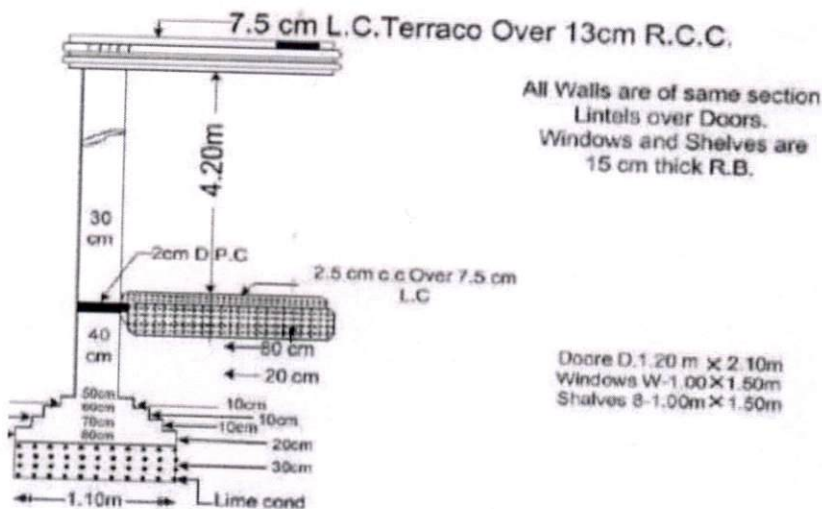
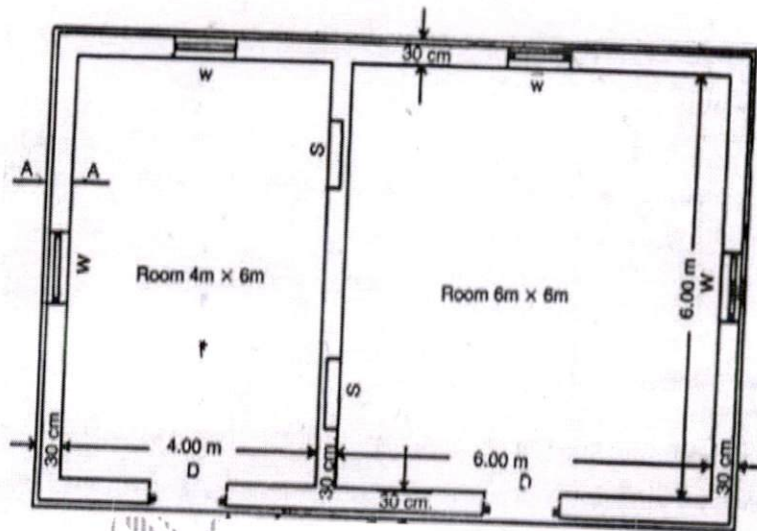
- 11 A. Write down specifications for: (i) Painting. (ii) Plastering. (iii) RCC works. 5M
(iv) White washing 5M
B. What is an approximate estimate? State the different approximate methods of estimating civil engineering structures.
OR
- 12 A. What is estimate? What are the documents required to prepare an estimate? 4M
B. Enunciate: (a) Earthwork excavation (b) Soling (c) Concrete in foundation 6M
(d) Masonry (e) Damp proof course
- 13 A. What are the Factors affecting Rate analysis? 5M
B. Calculate the quantity of materials for C.M. (1:4) for $1m^3$ of work? 5M
OR

- 14 A. Calculate the quantity of Cement required in bags for the following items of work.
 C.C. (1:4:8) 40mm HBG metals for 30m^3 of work. 5M
 B. RR masonry in CM(1:5) very 0.34m^3 of CM for 1m^3 of masonry for 20m of work. 5M
- 15 A. Estimate the quantities of earthwork for an embankment 120m long, 8m wide at crest, side slope is 2:1, the central height from 0 to 120m at every 30m interval are 0, 0.6, 1.2, 1.6, 2, 1.3 5M
 B. Explain in detail about three cases of road sections with neat sketch? 5M

OR

- 16 Calculate the quantities of the following items for the building shown in figure below using center line method: (i) Earth work in excavation. (ii) Brick work in foundation and plinth. (iii) Damp proof course. (iv) Brick masonry in CM (1:6) for super structure 10M

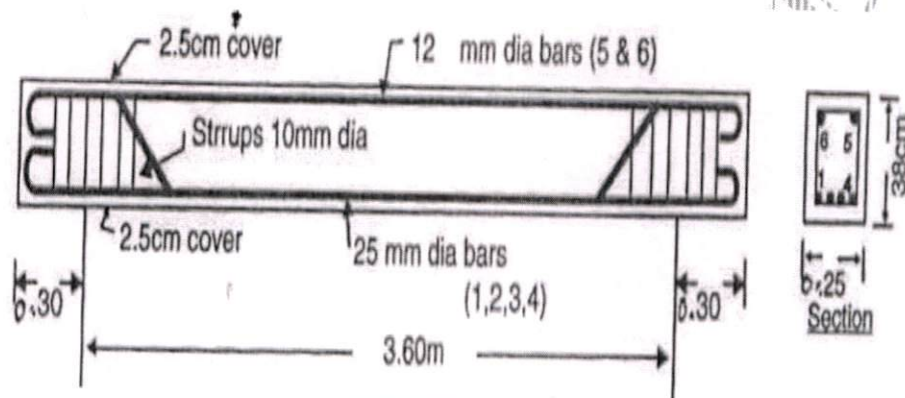
TWO ROOMED BUILDING



- 17 Workout the quantities of steel and prepare bar bending schedule of steel for RCC one way slab simply supported over walls. Shorter span of 2.5m, longer span of 6m, bearing of slab is 230mm in to the wall. Thickness of slab is 100mm; take end covers 25mm bottom and top covers 15mm. Main steel of 12mm bars alternatively bent up at 120mm center to center, distribution steel is 6mm at 160mm center to center at the bottom and 3 numbers at the top at both ends of bent up. Main bars are bent at a distance of $1/7$ from the face of wall. 10M

OR

- 18 Workout the quantity of reinforcement by preparing bar requirement schedule of a beam as per the drawing given below. Side covers 50 mm. 10M



- 19 Equipment that was purchased at a cost of Rs 20 lakhs, six years age is considered for replacement. The existing equipment can be sold at a price of Rs. 5 lakhs and if kept for another six years will have salvage value of Rs. 1 lakh. The challenger has annual operating cost of Rs. 50000/- and its salvage value is Rs. 5 lakhs at the end of 12 years. Rate of interest is 10%. Decide whether to continue services of existing equipment or replace it. 10M

OR

- 20 A. Define valuation and explain the purpose of valuation. 5M
B. Explain capitalized value with a simple example 5M