Reg. No:

## SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR (AUTONOMOUS)

## B.Tech III Year I Semester Regular Examinations March-2023 ESTIMATING, COSTING AND VALUATION

(Civil Engineering)

Time: 3 hours

Max. Marks: 60

(Answer all Five Units  $5 \times 12 = 60$  Marks)

UNIT-I

a Briefly explain the different types of estimates discussing when each one is preferred.

CO1 L1 6M

**b** What are the different methods of estimate? Explain long wall and short wall method and centre line method in detail.

CO1 L1 6M

OR

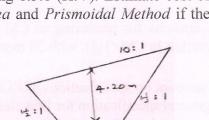
A person constructs a building of a plinth area equal to 160 sq.m. on a plot of land in a certain locality at a rate of Rs. 25,50,000/-. The height of the building from ground level to the top of roof is 3.10 m and parapet wall of height equal to 75 cm is constructed on the terrace. Determine the cost of a similar building of a plinth area equal to 140 sq.m. is to be constructed in the same locality by plinth area rate and volume rate method.

CO1 L1 12M

12M

UNIT-II

A hill road is to be constructed in side-long ground in cutting. Calculate the quantity of earthwork for two chain length in between 10<sup>th</sup> to 12<sup>th</sup> chainage, the length of chain being 30 m. The depth of cutting at the chainage 10 is 3.60 m at the centre and cross slope of ground is 8:1 (H:V). The depth of cutting at the chainage 11 is 3.00 m at the centre and cross slope of ground is 12:1 (H:V). The depth of cutting at the chainage 12 is 4.20 m. The depth of cutting at the chainage 12 is 4.20 m at the centre and cross slope of ground is 10:1 (H:V). Formation width is 10 m and side slopes of cutting 1.5:1 (H:V). Estimate cost of earthwork using *Mid-Sectional Area*, *Mean Sectional Area* and *Prismoidal Method* if the rate of earthwork in exaction is Rs.275%cu.m.



Section at 10th Chainage

3.60

Section at 11th Chainage

3.00

K- 10.00->

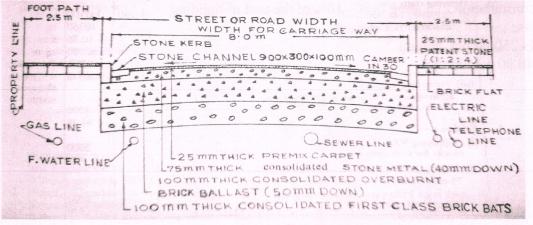
Section at 12th Chainage

Detailed dimensioned shotely are a cotion of a city

Detailed dimensioned sketch cross-section of a city street having mettled portion of 8 m CO2 L3 12M for the carriageway is shown in figure. Prepare a estimate for constructing 500 m length of this street. Indicate also quantities of materials.

OR

12:1



## **UNIT-III**

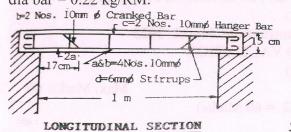
Prepare a schedule of bars for the RCC lintel shown in figure assuming bearing of the lintel be 15 cm on walls at each side. Weight of 100 mm dia bar = 0.62 kg/RM and 6 mm dia bar = 0.22 kg/RM.

CO<sub>2</sub> 13 12M

12M

**6M** 

12M



b&c=4Nos a = 2 No10mm 6 a&b=4Nos. 10mm 6 CROSS SECTION CROSS SECTION

AT SUPPORT

OR

The following figure shows the longitudinal section & cross section of a simple beam of clear span 5.0 m. The thickness of support wall is 300 mm. Workout the total quantity of the reinforcement in the beam. Also prepare the bar bending schedule

10mm & holder bar 6 mm & two legged @ 50cm c/c

AT HID SPAN

500 cm Cross Section Longitudinal Section

**UNIT-IV** 

a Work out the rate analysis for PCC (1:3:6) and RCC (1:1.5:3) for foundation.

CO<sub>4</sub> L3 **6M** 

L3

b What are the factors affecting the rate analysis? Describe briefly the procedure of rate analysis.

Prepare the rate analysis for plastering in CM (1:3), with 12 mm thick for ceiling and **CO4** outside wall plastering in CM (1:4), with 20 mm thick.

CO<sub>4</sub>

UNIT-V

OR

a Give detailed account on specifications of RCC (1:2:4).

CO<sub>5</sub> L2 **6M** 

**b** Describe the general specification for first class buildings.

CO<sub>5</sub> L2 **6M** 

10 Calculate the standard rent of a Government residential building newly constructed from the following data -

**CO6** 12M

- (i) Cost of land –Rs.10,000.00
  - (ii) Cost of construction of the building –Rs.40,000.00
  - (iii) Cost of roads within the compound, and fencing –Rs.20,00.00
  - (iv) Cost of sanitary and water supply works 8% of the cost of building
  - (v) Cost of electric installation including fans 10% of the cost of building
  - (vi) Municipal House tax Rs.400.00 per annum
  - (vii) Water tax Rs.250.00 per annum

Property tax – Rs.140.00 per annum

\*\*\* END \*\*\*