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9. (a) Explain stiffened and unstiffened compression members with the help of neat sketch. 10
- (b) What are the various types of cold formed sections? Explain with neat sketch. 10

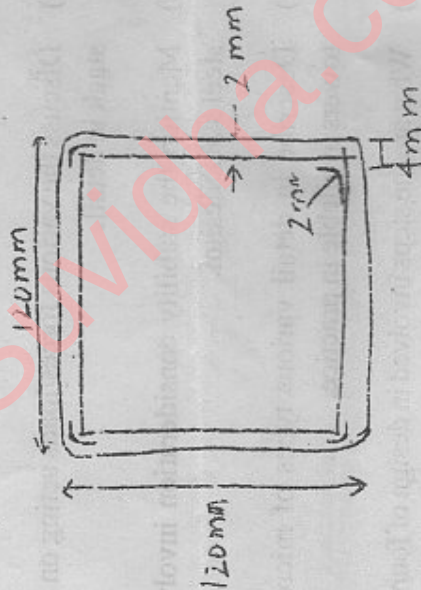


Fig. 2

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B.Tech. 7th Semester (Civil Engineering)
Examination, December-2015

DESIGN OF STEEL STRUCTURE-II

Paper-CE-401-F

Time allowed : 3 hours] [Maximum marks : 100

Note : There are nine questions in all. Question No. 1 is compulsory and students have to attempt one question from each of the four sections.

1. (a) Define plastic hinge. $2 \times 10 = 20$
- (b) What are cold formed section?
- (c) Mention the function of stay in a tank.
- (d) What is purpose of providing column bracket in industrial building?
- (e) Draw sketch of Guyed Chimney.
- (f) Write inside diameter of Chimney.
- (g) Classify the towers on the basis of size and type of loading.
- (h) Define staging.
- (i) List out items that are to be considered while planning and designing of industrial building.
- (j) Which is the Indian Standard Code for calculation of wind loads?

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Section-A

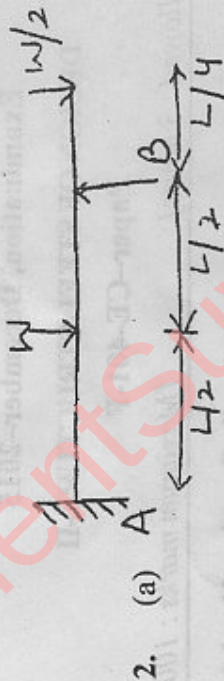


Fig. 1

Find the collapse load for the propped cantilever of uniform M_p as shown in fig 1. 10

(b) What do you mean by mechanism? Discuss the various possible mechanism with help of neat sketch. 10

3. (a) Find Shape factor for "T-section" with flange width 100mm, depth 100 mm and thickness of flange and web 100 mm. 10

(b) Discuss the stages of bending of rectangular sections. 10

Section-B

4. (a) What are the steps involved in design of truss members? 10

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(b) With the help of neat sketch explain common types of industrial building bents. 10

5. Discuss in detail steps involved in design of rectangular steel water tanks. 20

Section-C

6. (a) Discuss the various forces/loads acting on a steel stack in detail. 10

(b) Mention the stability consideration involved in steel stack design. 10

7. (a) Describe in detail various types of microwave towers available in practice. 10

(b) What are the steps involved in design of foundation towers? 10

Section-D

8. (a) Determine the allowable load for the tubular column section shown in Fig. 2? Take effective length of the column as 4.5m and $f_y = 25 \text{ N/mm}^2$. 10

(b) Write short note on local buckling of plate elements. 10