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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

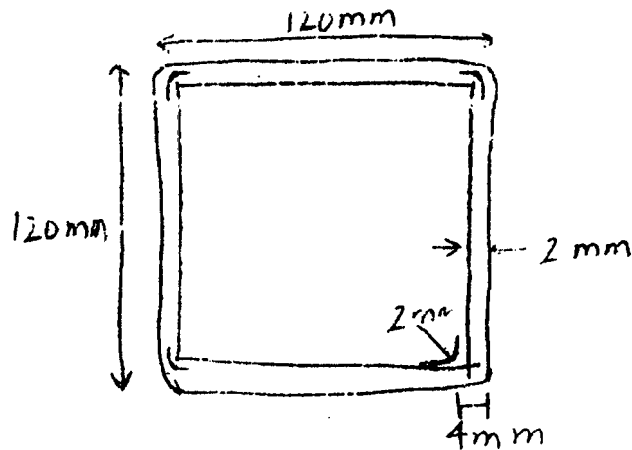


Fig. 2

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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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[P.T.O.]

Section-A

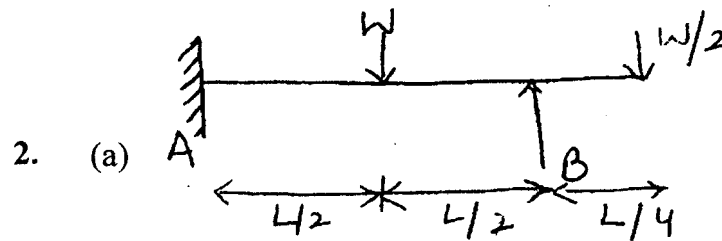


Fig. 1

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 10 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

- (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