BE Semester-VIII (Civil Engineering) Question Bank

(Design of Steel Structures)

1. Draw a neat sketch of plate girder giving elements and state function of each element. 10 2. What are the various types of stiffeners and state minimum web thickness provisions as per IS 800-2007. 10 3. Explain simple post critical method of determining shear buckling strength of web. 10 4. Explain tension field method of determining shear buckling strength of web. 10 5. List major component of an industrial building with figure. 10 6. Explain design steps of Gantry Girder. 10 7. Define shape factor and find it for rectangular section. 10 8. State the assumption made in plastic design to simplify computation. 10 9. State the following theorems of plastic collapse : a) static theorem, b) kinematic theorem. 10 10. Find out collapse load of the simply supported beam having span 5 m and point load 15 10 11. Find out collapse load of the fixed beam having span 5 m and point load 15 10 12. Find shape factor for circular and triangular section. 10 13. Find out D.L., L. and WL on the roof truss of an industrial building having span of 15 m provided of spacing of 3.2 m c/c which is required to construct in Banglore. Consider A.C sheets as a roof covering			
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	135kN and weight of crab is 65kN. Take clearance as 1m and wheel base as	
	3.0m. Choose suitable section and check the bending stresses and deflection	
19.	Design a gantry girder for an industrial building to carry an electrical overhead travelling crane having following data.	40
	Crane capacity-250 kN, Weight of crane excluding trolley-200 kN, Weight of	
	trolley(crab)-60 kN, Span of crane girder-20 m, Span of gantry girder-7 m,	
	Wheel base-3.4 m, Weight of rail section-0.25 kN/m, Minimum hook approach-	
	1.1 m, f _y =250 N/mm ²	
20.	A foot over bridge is of span 20m and pedestrian load of 4kN/m2. The clear distance between two trusses is 3.0m and truss height is 2.0m. Take dead	40
	weight of truss is 1.10kN/m. Assume suitable configuration of truss and design	
	& detail a cross beam and a top chord near centre.	