GALGOTIAS UNIVERSITY

| ADMISSION NUMBER |
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# School of University Polytechnic

**Diploma in Civil Engineering**
**Semester End Examination - Aug 2024**

**Duration : 180 Minutes**
**Max Marks : 100**

## Sem V - N1DB503T - Design of Steel Structure

*General Instructions*
*Answer to the specific question asked*
*Draw neat, labelled diagrams wherever necessary*
*Approved data hand books are allowed subject to verification by the Invigilator*

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| 1) | Define snow load | K1(2) |
| 2) | Explain rivet value in brief. | K2(4) |
| 3) | Describe the different typs of loads on a steel structure. | K2(6) |
| 4) | Calculate the value of a 22 mm diameter rivet in a double cover Butt joint. The thickess of plates is 16mm and cover plates is 9mm. Given permissible shear stress in rivet is 90N/mm2 and permissible bearing stress is 270N/mm2. | K3(9) |
| 5) | Write a note on: rivet and arrangement of rivited joint | K3(9) |
| 6) | Examine different loads to be considered in the Limit State design of steel structures. | K5(10) |
| 7) | Compare butt joint and riveted joint. | K4(12) |
| 8) | A single angle strut ISA 60 X 60 X 8 mm of a roof truss is 1.10 m long.It is connected by one rivet at each end.Evaluate the safe load the strut can carry? | K5(15) |
| 9) | A single angle strut ISA 65 X 65 X 8 mm of a roof truss is 1.10 m long.It is connected by one rivet at each end.Evaluate the safe load the strut can carry? | K5(15) |
| 10) | Design a lap joint to connect a plate 115 X 10mm with the flange of the column. The joint should be designed to develp full strength of plate. Given permissible shear stress in rivet is 90N/mm2 and permissible bearing stress is $270N/mm^2$and permissible tensile stress in plate is 150N/$mm^2$ | K6(18) |