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**PRESIDENCY UNIVERSITY  
BENGALURU**

**SCHOOL OF ENGINEERING  
END TERM EXAMINATION - JUN 2023**

**Semester :** Semester VI - 2020

**Course Code :** CIV3004

**Course Name :** Sem VI - CIV3004 - Design of Structural Steel Elements

**Program :** CIV

**Date :** 14-JUN-2023

**Time :** 9.30AM - 12.30PM

**Max Marks :** 100

**Weightage :** 50%

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**Instructions:**

- (i) Read all questions carefully and answer accordingly.*
  - (ii) Question paper consists of 3 parts.*
  - (iii) Scientific and non-programmable calculator are permitted.*
  - (iv) Do not write any information on the question paper other than Roll Number.*
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**PART A**

**ANSWER ALL THE QUESTIONS**

**(5 X 5 = 25M)**

1. A tension member is a structural member that is subjected to tensile force in the direction of its longitudinal axis. They are also known as a tie member or just a tie. The type of tension member in structural steel construction is determined by the structure and method of end connections. Explain briefly the block shear failure in tension members.  
(CO2) [Knowledge]
2. Determine the bolt value of M30 bolts and property class 4.6 used to connect two plates of thicknesses 12mm and 10mm respectively. Assume the tolerances, pitch and end distances suitably as per IS800: 2007.  
(CO1) [Knowledge]
3. Two plates of width 200mm and thickness 10mm are to be connected by providing lap joint. Determine the strength of the fillet weld provided. Assume the size of the weld as per codal provisions.  
(CO1) [Knowledge]
4. A tension member is a structural member that is subjected to tensile force in the direction of its longitudinal axis. They are also known as a tie member or just a tie. With the help of neat sketches mention the use of tension members in structural applications.  
(CO2) [Knowledge]
5. A compression member is a very commonly encountered structural member whose function is to receive a compressive force. A compression member is known by various terms like column, stanchion, strut etc. With the help of neat sketches mention the use of compression members in structural applications.  
(CO3) [Knowledge]

