

RE VERA INSTITUTE OF TECHNOLOGY

CIVIL DEPARTMENT

ASSIGNMENT NO- 2

SUBJECT-D.S.S

CLASS-T.Y (A)

- 1)** Design a suitable fillet weld to connect a tie bar $100 \text{ mm} \times 12 \text{ mm}$ to 10 mm thick gusset Plate. Design the joint for full strength of the tie and assume welding on all three sides as
Take $f_y = 250 \text{ MPa}$, $\gamma_{mo} = 1.1$ and $f_u = 410 \text{ MPa}$
- 2)** A butt joint consists of two plates of $100 \text{ mm} \times 10 \text{ mm}$ connected by 20 mm dia. bolts of grade 4.6.. Calculate strength of double bolt and number of bolts to be provided in the joint
- 3)** State the modes of failure of bolted joints
- 4)** State any four advantages and disadvantages of welded connections over bolted Connections
- 5)** A tie member $100 \times 10 \text{ mm}$ has to transmit an axial load of 100 kN . Design fillet weld and calculate necessary overlap by assuming welding on all four sides. Also draw a neat sketch of connection. Take permissible shear stress in weld material as 108 MPa
- 6)** A lap joint consists of two plates $180 \times 10 \text{ mm}$ connected by means of 16 mm dia bolts of grade 4.6. All bolts are in one line. Calculate strength of single bolt and no. of bolts to be provided in the joint.
- 7)** Explain the types of welds with sketch