



KERALA AGRICULTURAL UNIVERSITY
B.Tech.(Food Engg.) 2019 Admission
V Semester Final Examination-January 2022

Cien.3105

Design of Structures (1+1)

Marks:50
Time: 2hours

- I Fill in the blanks (10x1=10)**
1. Vertical shear reinforcement are called -----.
 2. Rivet diameter according to Unwin's formula is -----.
 3. The ratio of shearing stress to shearing strain within elastic limit, is known as -----.
 4. The lateral pressure on the walls of a bunker is determined by -----.
 5. The Anchorage value of U-type hook is -----.
 6. Deflection of a beam shall not exceed -----.
 7. When two plates are placed end to end are joined by two cover plates, the joint is known as -----.
 8. Effective throat thickness in weld joints is -----.
 9. The Indian Standard code which deals with steel structures, is -----.
 10. Square footing should have Min depth "D" = -----
- II Write short notes on ANY FIVE of the following (5x2=10)**
1. Effective length of weld
 2. Plinth area estimate
 3. Grades of concrete
 4. Web crippling in steel beam
 5. R.C.C.
 6. Book value
 7. Singly reinforced beam
- III Answer ANY FIVE of the following (5x4=20)**
1. Explain the design procedure of a tension member.
 2. Calculate the maximum load that can be carried by 400x400mm square column reinforced with 8 bars of 22mm diameter. The effective length of column is 4m.
 3. Discuss the types of failure of riveted joints.
 4. Characteristics of concrete and steel
 5. Sketch the types of butt welds.
 6. Differentiate between scrap and salvage value.
 7. Critical section
- IV Write an essay on ANY ONE of the following (1x10=10)**
1. State the assumptions of the analysis and design of doubly reinforced beams.
 2. Find a suitable pitch for a double riveted lap joint, for plate 10mm. Use 20mm diameter rivets. Also determine the efficiency of the joint.
