



KERALA AGRICULTURAL UNIVERSITY
B.Tech.(Food Engg.) 2017 Admission
V Semester Final Examination-December 2019

Cien.3105

Design of Structures (1+1)

Marks: 50
Time: 2 hours

I State True or False

(10x1=10)

1. A column head of flat slab increases rigidity of slab and column connection.
2. One-way slabs have the ratio of long span to short span as less than 2.
3. Radius of gyration of a section in compression member is $\sqrt{I/A}$.
4. Number of Rivets required for a joint is given by $n = \{\text{Force / Rivet Value}\}$.
5. At max. B.M. effective depth of simply supported slab is $d = \sqrt{M/1000R}$

Choose the Correct Answer

6. Slenderness ratio of a compression member is ratio between
a Effective length b Radius c Both a & b d None of above
7. Effective length of column for both end fixed is
a $L=1$ b $L=2l$ c $L=l/2$ d None of above
8. Pitch is related to distance in case of
a Riveting b Welding c Both a & b d None of above
9. Euler's Theory is related to
a Long column b Short column c Both a & b d None of above
10. Butt joint requires cover plate in case of
a Riveting b Welding c Both a & b d None of above

II Write Short notes on any FIVE of the following

(5x2=10)

1. Fe415
2. R.C.C.
3. Fillet weld.
4. Neutral axis.
5. Under reinforced beams.
6. Two way slab.
7. M20 concrete.

III Answer any FIVE of the following.

(5x4=20)

1. What is one-way slab and two-way slab?
2. Write the steps for Analysis of singly reinforced beams.
3. Balanced and unbalanced sections.
4. What are restrained slabs?
5. Where are tension members used in steel structures?
6. Assumptions for the design of RCC structural elements.
7. Write design steps of simply supported two way slabs.

IV Write an essay on any ONE of the following

(1x10=10)

1. State about reinforcements and their requirements in circular RCC columns.
2. State the assumptions of the analysis in reinforced beams.
