KERALA AGRICULTURAL UNIVERSITY

B.Tech (Food.Engg) 2013 Admission

Vth Semester Final Examination-December -2015

Cat. No: Cien 3105 **Marks: 50.00**

Title: Design of Structures (1+1) **Time: 2 hours**

I Fill up the blanks **(10 x 1=10)**

1. Minimum concrete cover to be provided for slab is .....
2. In a cantilever beam, main steel is to be provided at the .....
3. As per Indian Standards,permissible tensile stress in high yield strength deformed bars is .....
4. In a simply supported beam,the stress above neutral axis is ..... in nature
5. The part of the structure below ground is known as .....

State 'TRUE OR FALSE'

6. Effective length of a column is equal to the original length if the ends are hinged
7. In a two way slab,main steel is provided along short span only
8. The effective diameter of a river is equal to the diameter of a river hole
9. An over reinforced section will have a brittle failure
10. Recently,welded connections are common compared to riveted connections

II Write short notes on any Five of the following **(5 x 2=10)**

1. Euler's formula for columns
2. When and where T beams are used?
3. Battening
4. Short columns
5. Quantity surveying
6. Sketch the shear stress diagram for an I sections
7. Advantages of two way slab over one way slab

III Answer any Five questions **(5 x 4=20)**

1. Write down the procedure for calculating the strength of a short column
2. Differentiate between T beam and rectangular beam
3. Estimate the earth work for a compound wall 10m long and having foundation width 45cm and depth 60cm
4. Evaluate the design constants for M20 concrete using Fe 415 steel
5. Explain with sketches the types of riveted joints
6. Find out the area of steel required for a simply supported beam of 5m span carrying a load of 10KN/m including self weight using M20 concrete and mild steel
7. Write down the design procedure for a silo

IV Answer any one question **(1 x 10=10)**

1. Find suitable pitch of rivets for a single riveted double cover butt joint for plates of 12mm thick
2. Design a two way slab for a room 4mx5m subjected to a live load of 2KN/m^2 using M20 concrete and Fe 415 steel.

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