

**B.Tech Odd Semester (CBCS) Exam.,
December—2018**

AGRICULTURAL ENGINEERING

(7th Semester)

Course No. : AECC-36

(Building Materials and Structural Design)

Full Marks : 50

Pass Marks : 15

Time : 2 hours

Note : 1. Answer **any five** questions.

2. Begin each answer in a new page.

3. Answer parts of a question at a place.

4. Assume reasonable data, wherever required.

5. The figures in the margin indicate full marks for the questions.

1. (a) Explain different types of cements and their compositions. 6
- (b) Discuss lime as construction material in brief. 4
2. (a) What are the properties of concrete? What is slump test? 2+2=4
- (b) Discuss different types of wire fencing in farm. 6

3. (a) Explain different types of dairy barns. 6
- (b) List out different properties of construction materials. 4
4. (a) Discuss different types of poultry houses. 5
- (b) List out the methods of estimating cost of a building. 5
5. (a) Work out the economical diameter and depth of a silo to store sufficient quantity of silage for herd of 400 dairy cows having an average body weight of 450 kg each. The cows are fed silage for 200 days a year. 5
- (b) List out various types of glasses, their properties and uses in construction. 5
6. (a) Deduce expressions for moment of inertia and bending moment for a T-section. 8
- (b) Name different types of plastics used in construction. 2
7. (a) Explain single and double reinforced beams. 5

(3)

- (b) Calculate the quantities of cement, sand and gravel required to prepare 81 cu. ft. of concrete having 1 : 3 : 4 as the properties of aggregate. 5
8. Explain the design procedure of a concrete grain bin in detail. 10
