

KERALA AGRICULTURAL UNIVERSITY  
B.Tech. (Food Engineering) - 2011 Admission 1<sup>st</sup> Semester  
Final examination – February – March 2012

Cat. No: Cien 1101

Title: Basic Civil Engineering

Marks: 80

Time : 3 hours

**Part A**

(10×1= 10 marks)

**Fill up the blanks.**

1. The standard size of brick is .....
2. For ordinary Portland cement the compressive strength should not be less than ..... at 28 days of curing.
3. For mild steel the yield strength is .....
4. Plain concrete is a mixture of .....
5. Ultimate bearing capacity = .....  
Factor of safety
6. In chain surveying, only ..... measurements are made .
7. The angle, a line makes with magnetic meridian is known as .....
8. In surveying, the art of determining relative heights or elevations of points is known as .....
9. Liquid waste from a community is known as .....
10. Minimum horizontal dimension for soak pit is .....

**Part B**

(10×3= 30 marks)

**Answer any 10 questions.**

1. Differentiate between true bearing and magnetic bearing.
2. What is reciprocal leveling?
3. What is local attraction?
4. How temporary adjustment is done in theodolite surveying?
5. Explain the test for finding the specific gravity of cement.
6. Which are the tests conducted to measure the workability of fresh concrete?
7. How setting time of cement is determined in the laboratory?
8. Explain intersection method in plane table surveying.
9. What is tangential method in surveying?
10. Explain break point chlorination.
11. In a chain survey the length of a line measured with a 20 m chain was found to be 935.4m. Afterwards, it was found that the chain was 0.04m too short. Find the true length of the line.
12. What are the tests for drinking water?

**Part C**

(6×5= 30 marks)

**Answer any 6 questions.**

1. Describe the test for finding compressive strength of cement.
2. Explain the usage of steel in building construction.
3. With a neat sketch describe surveyor's compass.

4. Explain any two types of building foundations.
5. Write a note on principles of chain surveying.
6. The following bearings were observed while traversing with a compass.

Line	FB	BB
AB	45° 0'	226° 0'
BC	98° 0'	277° 30'
CD	29° 30'	209° 0'
DE	324° 30'	144° 30'

Mention the stations affected by local attraction and determine the corrected bearings.

7. The following consecutive readings were taken with a level and a four metre leveling staff on a continuously sloping ground  
0.755, 1.545, 2.335, 3.545, 3.655, 0.525, 1.275, 2.650, 2.895, 3.565, 0.345, 1.525, 1.850, 2.675, 3.775. The first reading was taken on a bench mark whose R.L is 200 metres. Rule out a page of level book and enter the above readings. Calculate the reduced levels of the stations by height of instrument method and apply arithmetical check.
8. Plot the cross staff survey of a field ACDBFE from the field book measurements given in fig. A and determine the area of the field.

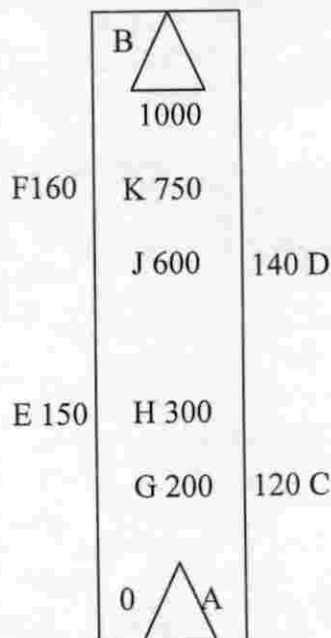


Fig. A

### Part D

(1×10= 10 marks)

Answer any ONE question.

1. Explain various bacteriological tests for testing the quality of drinking water.
2. Describe 3 point problem in surveying. Also state the advantages and disadvantages of plane table surveying.