III-SEM./CIVIL/2021(W) OLD

CET 303 Survey -1

Full Marks: 80 Time- 3 Hrs

Answer any five Questions including Q No.1& 2

Figures in the right hand margin indicates marks

1. Answer **All** questions 2 x 10

a. State the basic principle of surveying.
b. Differentiate between open traverse & close traverse.
c. What is a contour line?
d. Draw the conventional symbols of metalled road and wire fencing.
e. Differentiate between plan and map.
f. What is reciprocal levelling?
g. Outline the uses of a cross staff.
h. Convert 270° into reduced bearing system.
i. Define a benchmark and write down different type of benchmark.
j. Explain the term contour line.

2. Answer **Any Six** Questions 5X6

a. In levelling between points A and B on opposite side of a bank of a river. The level was set up near A and the staff reading on A and B are 2.156 & 3.568 respectively. The level was then moved and set up near B and the respective staff readings on A and B were 1.968 and 3.262. Find true difference level of A and B & write which is at high level.
b. The length of a line measured with a 20 m chain was found to be 250m. Calculate the true length of the line if the chain was 10 cm too long.
c. Describe the method of testing chain.
d. The four bearings of the lines AB, BC, CD and DE are 45°20',120° 30', 200° 30' & 280°30' respectively. Find angles ∠B, ∠C & ∠D.
e. Draw a comparison between chain surveying and compass surveying.
f. Explain the method of continuing a chain line facing the following obstacles.
> A tall building
> A river
g What do you mean by contour interval .Write down the factors affecting choice of contour interval?

3 The following staff readings were observed successfully with the level, the instrument being changed after 3rd, 6th and 8th readings. 10
2.228, 1.606, 0.988, 2.090, 2.864, 1.262, 0.602, 1.982, 1.044, 2.684 meters.
Enter the above readings in a page and calculate the RL of points, if the first reading was taken with staff held on a benchmark of 432.384 m

4 Write down the various characteristics of contour with diagrams wherever necessary. 10

5 Find which station is free from local attraction & work out the correct bearings. 10

Line	F.B.	B.B.
AB	154°	334°40'
BC	205°40'	23°38'
CD	140°00'	321°22'
DE	69°38'	249°38'

Explain each reading underneath the tabular form.

6 Describe the field procedure of chain surveying. 10

7 What are the sources of error in chaining? What precautions would you take to guard against them? 10