Seat No.: _____ *Enrolment No._____*

GUJARAT TECHNOLOGICAL UNIVERSITY

B.E. Sem-II Remedial Examination September 2009

Subject code: 110004 Subject Name: Elements of Civil Engineering

Date: 10/ 09 / 2009 Total Marks: 70 Time: 11:00am-1:30pm

Instructions:

1. **Write seat no. and enrolment no. at given location on question paper.**
2. **Attempt all questions.**
3. **Make suitable assumptions wherever necessary.**
4. **Figures to the right indicate full marks.**

Q-1 **(a)** The following observations were taken with dumpy level and four meter leveling staff. The instrument was shifted after the fourth and seventh readings. The first reading was taken on a bench mark whose RL is 15.575 m. Prepare a page of level book and calculate RLs of all the points. The observations were taken at every 30m interval. Also find out the gradient between first and last point. Also draw the profile of ground. Use H.I. method. Observations are: 0.565, 1.250, 1.675, 3.695, 0.125, 2.345, 3.245, .500, 1.785, 2.535. **07**

(b) Draw the neat sketch of the following. **07**

1) RCC Lintel with Chajja.
2) Dog legged stair.

Q-2 **(a)** Enlist various materials nowadays used in construction of buildings. Write properties of good bricks and timber. **07**

(b) Explain with sketch GIS and its components? State its objectives. **07**

OR

(b) 1) Explain with sketch the use of line ranger and cross staff. **04**

2) Differentiate between plain survey and geodetic survey. **03**

Q-3 **(a)** The following observations were taken with a prismatic compass while running a closed traverse ABCDE. Calculate the correct included angles of the traverse. **07**

LINE	Fore Bearings	Back Bearings
AB	$150^0\ 00'$	$330^0\ 00'$
BC	$230^0\ 30'$	$48^0\ 00'$
CD	$306^0\ 15'$	$127^0\ 45'$
DE	$298^0\ 00'$	$120^0\ 00'$
EA	$49^0\ 30'$	$229^0\ 30'$

(b) Write short notes on **07**

1) Methods of chaining on sloping ground.
2) Local Attraction.

OR

Q-3 **(a)** Which is the instrument used for measuring area of irregular figure? Explain the procedure of measuring and calculating the area of irregular figure? **07**

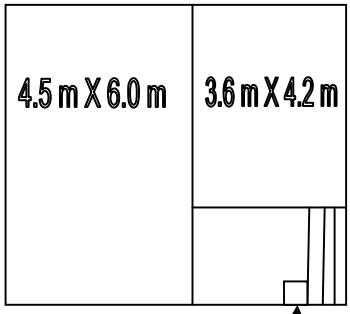
(b) State and explain temporary adjustments of a dumpy level. **03**

(c) Draw the contours of following objects with contour values. **04**

Hill, Pond, Hanging cliff, Steep Ground

Q-4 Draw the detail plan of a building from its line sketch diagram. Draw the conventional signs to show the brick work and RCC work. Also give dimensions of doors, windows, floor height, and plinth and parapet height. Draw the cross section of wall showing foundation and plinth with necessary dimensions. **14**

Line sketch diagram, all dimensions are in meters.



RCC column (0.3 m X 0.3 m)

OR

Q-4 **(a)** Explain the term conservation of water? Discuss various measures for irrigation conservation. **07**

(b) What are advantages of road transportation? Draw the neat sketch of National highway showing all component parts and explain their functions. **07**

Q-5 Write short notes on:

1) Traffic control measures and devices. **05**
2) Watershed and its development. **05**
3) Method of mixing of concrete. **04**

OR

Q-5 Write short notes on:

1) Indirect ranging. **05**
2) Uses and properties of steel and stones. **05**
3) Aspect and Prospect. **04**

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