

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER- 1st / 2nd • EXAMINATION – SUMMER • 2014

Subject Code: 2110004

Date: 24-06-2014

Subject Name: Elements of Civil Engineering

Time: 02:30 pm - 05:00 pm

Total Marks: 70

Instructions:

1. Question No. 1 is compulsory. Attempt any four out of remaining six questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

Q.1 (a) Objective Questions: MCQ: choose right answer. 07

1. Planning of a very large area covering several towns and villages is known as:
(a) Town planning
(b) Village planning
(c) Urban planning
(d) Regional planning
2. Totalstation take measurements of
(a) Length
(b) Angle
(c) coordinates
(d) All of the above
3. Offset are set by instrument
(a) Cross staff
(b) Prism square
(c) Optical square
(d) All of the above
4. If W.C.B. of any line lies in quadrant IV then R.B. is equal to
(a) WCB
(b) 360° -WCB
(c) 180° -WCB
(d) $WCB-180^\circ$
5. Write full form of: GTS
6. Curvature correction in leveling is always
(a) Additive (b) Subtractive
7. Contour lines cross one another in case of:
(a) Vertical cliff
(b) Hillock
(c) Overhanging cliff
(d) Reservoir

Q.1 (b) Objective Questions: MCQ: choose right answer. 07

1. As per principles of building planning ---longer walls of building should face the direction:
(a) North-East
(b) North-South
(c) East- West
(d) North-West
2. To define grade of concrete which characteristics is used:
(a) Tensile strength
(b) Compressive strength
(c) Density

- (d) None of the above
3. (D)Depth of wall foundation is calculated by thumb rule
(T=Wall thickness)
(a) D is greater than equal to $2T+30$
(b) D is less than equal to $2T+30$
(c) D is greater than equal to $T+30$
(d) None of the above
4. Which type of door provides maximum safety
(a) Hollow core flush door
(b) Solid core flush door
(c) Sash door
(d) Battened and ledged door
5. For span of 12 m which pitched roof can be suggested
(a) King post
(b) Queen post
(c) Lean to roof
(d) All of the above
6. A barrier across a river to change flow of river water is called
(a) Weir
(b) Dam
(c) Barrage
(d) Aqueduct
7. Traffic sign indicating speed limit is categorized in:
(a) Regulatory sign
(b) Warning sign
(c) Informatory sign
(d) Prohibitory sign

- Q.2 (a)** i. What is the difference between plan and map? **04**
ii. Convert the following bearing: **03**
a. RB=S 50° E
b. RB=S 20° W
c. WCB=250°

- (b)** What will be the horizontal distance between two points if measured along rising slope of 1 in 10 found 480m? **07**

- Q.3 (a)** Write classification of lime. **07**
(b) Prepare plan for a room with verandah in scale 1:50. The size of room is 3.0 m x 4.50 m. Verandah is 1.8 m wide. The thickness of wall is 30 cm for external and 20 cm for internal. Provide door, window and steps at suitable location. Write assumed dimensions for them. **07**

- Q.4 (a)** i. What is local attraction? What are the sources of local attraction? **03**
ii. Explain geodetic surveying. **04**

- (b)** Following table shows a page of a level book. **07**
Calculate values for Rise and Fall.
Calculate R.L. of the stations.
Apply arithmetic checks. R.L.of B.M. is 150.000.

st	BS	IS	FS	Rise	Fall	R.L.	Remark
A	2.500	-	-				B.M
B	1.685	-	1.575				
C	-	2.735	-				
D	1.515	-	3.335				

E	-	2.325	-				
F	-	1.050	-				
G	1.775	-	0.675				
H	-	-	2.450				

- Q.5 (a)** i. Write use of planimeter with formula. **03**
ii. Discuss the principles of planning: Flexibility and Circulation in brief. **04**
- (b)** The following fore bearings are observed in a closed traverse ABCD while surveying around a building. Calculate the included angles. **07**

Line	Bearing
AB	124°
BC	60°
CD	318°
DA	200°

- Q.6 (a)** Discuss about various dams. **07**
- (b)** i. What is mass transportation system? **03**
ii. Sketch the traffic signs for following: **04**
a. STOP
b. GIVE WAY
c. T Intersection
d. One way
- Q.7 (a)** Write functions of following building components: **07**
1. Weathershed /Chajja 2. Lintel 3. Plinth
4. Stair 5. Foundation 6. Beam 7. Slab
- (b)** i. Explain the term Infrastructure. **04**
ii. What are GPS, RS and GIS? **03**
