GUJARAT TECHNOLOGICAL UNIVERSITY

B.E. Sem-II Examination June- 2010

Subject code: 110004
Subject Name: Elements of Civil Engineering

Date: 18 / 06 / 2010   **Time: 02.30 pm – 05.00 pm**

Total Marks: 70

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1 **(a)** What do you understand by scheduling of construction project? Explain.   **05**
 (b) What are the characteristics of contours?   **05**
 (c) Explain role of Civil Engineering in infrastructure development.   **04**

Q.2 **(a)** The following are the bearings of closed traverse. Find the included angles and draw   **07**
  the traverse.

Line	FB	BB
AB	N 50^0 00' E	S 50^0 00' W
BC	S 60^0 00' E	N 60^0 00' W
CD	S 15^0 00' W	N 15^0 00' E
DA	N 70^0 30' W	S 70^0 30' E

 (b) A steel tape was exactly 30.00 m long at 20^0 C and when supported throughout its   **07**
  length under a pull of 9 kg. A line was measured with a tape under a pull of 14.00 kg
  and found to be 1800.00m. The mean temperature during the measurement was 36^0 C.
  Assuming the true length of the line, given that cross-section area of the tape =0.05
  cm². The weight of 1 cm² of tape is 0.0087 kg. The co-efficient of expansion =0.000012
  per 1^0 C and the Modulus of Elasticity = 2.1 x 10⁶ kg/cm².Find the corrected measured
  length.

OR

 (b) If primary scale is graduated to read 20 minutes, Construct a direct vernier read up to   **07**
  1 minutes and show 23^0 32'.

Q.3 **(a)** What is GPS? Explain its use in Civil Engineering field.   **04**
 (b) The following is the page of Level Book. Fill the missing data and calculate the RL   **10**
  of all points. Apply the usual checks

Station	Chainage	BS	IS	FS	Rise	Fall	HI	RL	Remark
1	0	2.485							
2	20				1.035				
3	40		0.625						
4	60	2.450				3.175			
5	80		2.155						
6	100		1.945						
7	120	1.255		0.645					
8	140			2.450					100.00 BM
Check									

OR

Q.3 **(a)** What are the corrections required in linear measurement? Explain any one in detail.   **05**
 (b) Advantage and disadvantage of concrete   **05**
 (c) What is local attraction in compass? How you can predict the same?   **04**

Q.4 **(a)** What are the test on aggregates and state its significance? **05**

(b) Define Trapezoidal and Simpson Rule and State its limitations. **05**

(c) Differentiate load bearing and framed structures. **04**

OR

Q.4 **(a)** What is Planimeter? Explain its uses. **05**

(b) Enumerate various principles of planning and explain aspect and prospect in detail. **05**

(c) Draw neat sketch of R.C.C. lintel with chajja. **04**

Q.5 Write Short Note on

(a) Total Station. **05**

(b) Error in leveling. **05**

(c) Role of Transportation in National Development. **04**

OR

Q.5 Write Short Note on

(a) BOT Projects of Highways. **05**

(b) Water Conveyance System. **05**

(c) Elements of Traffic Engineering. **04**

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