

20611 B

Name : .....

Reg. No.: .....



**THIRD SEMESTER B.TECH DEGREE EXAMINATION, OCTOBER 2011**

CE 09 305 / PTCE 09 304 – SURVEYING – I  
(2009 Admission)

Time: 3hrs

Total Marks: 70

**PART A**

*Answer all questions.*

1. a) Explain the term surveying?  
b) List out the errors in chain surveying?  
c) Write short note on levelling?  
d) For what purpose we use pantagraph?  
e) List out the advantages of plain table surveying? **(5x2 marks = 10 marks)**

**PART B**

*Answer any four questions.*

2. Explain the principle of surveying and also add a short note on field book.
3. Write short note on
  - a) True and magnetic bearing
  - b) Dip and declination
4. Write short notes on contour characteristics and uses of contour
5. List out the various permanent adjustments of a theodolite and explain any one in detail.
6. Explain the process of reciprocal levelling.
7. List out and explain the various obstacles that are encountered in chaining **(4x5 marks = 20 marks)**

**PART C**

*Answer all questions.*

8. Sketch the various conventional signs used in surveying and levelling and also add short notes on cross staff and optical square.
- OR**
9. a) A survey line BAC crosses a river, A and C being on the near and distant banks respectively. Standing at D, and a point 50 metres measured perpendicularly to AB

from A, the bearings of C and B are  $320^\circ$  and  $230^\circ$  respectively, AB being 25 metres. Find the width of the river.

b) Find the hypotenusal allowance per chain of 20m length if

i) The angle of slope is  $10^\circ$

ii) The ground rises by 4m in one chain length

10. List out and explain the various errors in plain tabling and also add a short note on local attraction

**OR**

11. Explain in detail with the help of sketches the three point problem in plain table surveying

12. Explain in detail the temporary and permanent adjustments of a level.

**OR**

13. The following perpendicular offsets were taken at 10m interval from a survey line to an irregular boundary line:

3.25, 5.60, 4.20, 6.65, 8.75, 6.20, 3.25, 4.20, 5.65 (Meters). Calculate the area enclosed between the survey line, the irregular boundary line and the first and last offsets by the application of

a) Trapezoidal rule

b) Simpsons rule

14. Write short notes on a) Elements of a curve  
b) Temporary adjustments of a theodolite

**OR**

15. The following consecutive readings were taken with a dumpy level: 6.21, 4.92, 6.12, 8.42, 9.81, 6.62, 7.91, 8.62, 9.71, 10.21 (Meters). The level was shifted after 4<sup>th</sup>, 6<sup>th</sup> and 9<sup>th</sup> readings. The reduced level at first point was 100m. Rule out a page of your answer book as a level field book and fill all the columns. Use collimation system and apply the usual arithmetical check. Indicate the highest and lowest points.

**(4x10 marks = 40 marks)**

\*\*\*\*\*