

Or

- (b) Describe the controls for setting out works (16) with suitable sketches.

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B.E./B.TECH. DEGREE EXAMINATIONS, NOV/DEC-2011  
REGULATIONS 2008  
THIRD SEMESTER  
CE 37 - SURVEYING - I  
CIVIL ENGINEERING

Time: Three Hours Maximum: 100 marks

ANSWER ALL QUESTIONS

PART-A (10×2=20 marks)

1. Distinguish between map and plan.
2. Classify the type of surveying based on the object of survey.
3. Define the terms closed traverse and open traverse
4. What are the methods of plane tabling?
5. Enumerate the temporary adjustment for a level
6. How will you check the results in rise and fall method
7. What are the permanent adjustments of a transit?
8. List out the source of natural errors in theodolite
9. What are the linear methods of setting out simple circular curves?
10. What are the usual cross sections adopted for tunnel?

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PART-B (5×16=80 marks)

11. (a) Explain various methods for determining the width of a river with sketches (16)

Or

- (b) An offset is laid out 5 degree from its true direction on the field. Find the resulting displacement of the plotted point on the paper A in a direction parallel to chain line B in a direction perpendicular to the chain line given that the length of the offset is 20m and the scale is 10m to 1cm (16)

12. (a) Describe the errors in compass survey and explain how to eliminate them? (16)

Or

- (b) The following are observed fore- bearings of the lines (16)

- (i) AB  $12^{\circ} 24'$
- (ii) BC  $119^{\circ} 48'$
- (iii) CD  $266^{\circ} 30'$
- (iv) DE  $354^{\circ} 18'$
- (v) PQ - N  $18^{\circ} 0' E$
- (vi) QR - S  $12^{\circ} 24' E$
- (vii) RS - S  $59^{\circ} 18' W$
- (viii) ST - N  $86^{\circ} 12' W$

Find their back bearings.

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13. (a) Describe the height of collimation and rise and fall method of computing the levels. Discuss the merits and demerits of each. (16)

Or

- (b) (i) Find the correction for curvature and for refraction for a distance of (8)  
(a) 1200 meters and  
(b) 2.48 Km
- (ii) A light house is visible just 5m above the horizon at a certain station at the sea level. The distance between the station and the light house is 50 Km. Find the height of the light house. (8)

14. (a) (i) Explain temporary adjustment of transit. (8)

- (ii) Explain how will you measure with a theodolite. (8)

- (a) Horizontal angle by repetition
- (b) Vertical angle
- (c) Magnetic bearing of line

Or

- (b) Describe the essential parts of a transit theodolite and their functions with neat sketch. (16)

15. (a) What are the common difficulties in setting out simple errors? Describe the methods employed in overcoming them. (16)

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