Register No:…….

B.E DEGREE EXAMINATIONS: MAY/ JUNE 2013

Fourth Semester

CIVIL ENGINEERING

CEE109: Surveying - II

Time: Three Hours **Maximum Marks: 100**

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. The curve which deflects to the Right of the direction of the progress of route is termed as
   a) Left hand curve b) Right hand curve
   c) Forward tangent d) Point of curve
2. The curve of varying radius introduced between a straight and circular curve is called
   a) Compound curve b) Simple curve
   c) Transition curve d) Vertical curve
3. A device erected to define the exact position of a observed station is known as
   a) Signal b) Towers
   c) Satellites d) Sensors
4. The operation of applying correction to the observed angles due to eccentricity of the station is termed as
   a) Surveying b) Reduction to centre
   c) Survey adjustments d) Bench marking
5. The difference between the most probable value of a quantity and its observed value is
   a) True error b) Residual error
   c) Accidental error d) Systematic error
6. The condition imposed by the station of observation is known as
   a) Station adjustment b) Figure adjustment
   c) Single angle adjustment d) Triangulation adjustment
7. The measurement of depth below the water surface is called
   a) Hydrographic surveying b) Reduction of soundings
   c) Soundings d) Three point problem
8. The two separate images of the object will fuse together in the brain to provide the observer with a spatial impression is known as
   a) Stereoscopic fusion b) Stereo pair
   c) Parallax d) Stereoscopic depth

9. The vertical entrance to mines driven from the surface is termed as

a) Footwall b) Face

c) Shaft d) Vein

10. The device used as a target in the Total station is called

a) Reflector b) Track light

c) GPS d) Geotronics

PART B (10 x 2 = 20 Marks)

11. State the two stages of Location survey.
12. Mention at least two requirements of Transition curve.
13. What do you understand by Primary Triangulation?
14. What is meant by Bench – marking? Mention its types.
15. Mention the three types of errors occurred during the measurements in the surveying.
16. State the various special instruments employed for specific purposes during the surveying.
17. List out the main parts of an echo- sounding apparatus.
18. State the functions of EDM equipment.
19. What are the uses of Remote seniti in civil Engineering?
20. List out the three fundamental quantities measured in the field by using Total station.

PART C (5 x 14 = 70 Marks)

21. a) What is meant by Route surveys? Explain in detail, the various stages of surveys involved in the route surveys.

(OR)

b) Two tangents AV and BV to a railway curve meet at vertex V at an angle $119^0 48'$. Find the radius of the circular curve which will pass through the point A, 13.24m from V at an angle $34^0 36'$ to first tangent. If the chainage of V is 1500m, Determine the deflection angle required to set out the first two pegs on the curve at full stations. Given length of the full chain = 20m

22. a) What are the essential requirements of a signal? Mention its types. Explain in detail.

(OR)

b) An eccentric station S is chosen, 12.5m west of the main station B. Length of the sides AB and BC are 5292.5m and 4836.5m respectively of Δ ABC. The measured angles BSC = 76^0 26'30" and CSA = $58^0$30'20". The stations S and C are the opposite side of the line AB. Find the angle ABC.

23. a) Enumerate the various laws of weights established by the method of least square. Explain in detail, with suitable examples.

(OR)

b) Find the most probable values of M, N,O from the following observations:

M = 32^0 15' 3.62"	Weight 2
N= 40^0 16' 18.4"	Weight 1
O = 35^0 12' 26.6"	Weight 1
M+N= 72^0 31' 50.2"	Weight 1
M+N +O = 107^0 44' 25.5"	Weight 2

24. a) Discuss in detail, the various sounding methods involved in the determination of depth of water below the surface.

(OR)

b) (i) Explain in detail, the working principle of EDM. Mention the few types of EDM instruments. (7)

(ii) Mention the three stages of field work of Terrestrial photographic surveys. Explain in detail. (7)

25. a) Discuss in detail, the applications of Remote sensing in Water resources and Land use studies.

(OR)

b) State the various good practices to be followed in using Total station. Add a note on the advantages of using Total stations over conventional surveying instruments.

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