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**3rd Sem. / Civil, Brick Tech,
Tech, Const Mgmt., Highway Engg.
Subject : Surveying - I**

Time : 3 Hrs.

M.M. : 100

SECTION-A

Note: Multiple choice Questions. All questions are compulsory
(10x1=10)

- Q.1 A building is an obstacle to
a) Chaining but not ranging
b) Ranging but not chaining
c) Neither chaining nor ranging
d) Both chaining and ranging
- Q.2 Maximum tolerance of a 20m chain is
a) $\pm 2\text{mm}$ b) $\pm 3\text{mm}$
c) $\pm 4\text{ mm}$ d) $\pm 5\text{mm}$
- Q.3 For a line AB
a) The fore bearing of AB and back bearing of BA differ by 18°
b) The fore bearing of AB and back bearing of BA differ by 18°
c) Both (a) and (b) are correct
d) None of the above
- Q.4 The horizontal angle between the true meridian and magnetic meridian at a place is called:
a) Declination b) Azimuth
c) Local attraction d) Magnetic bearing

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- Q.5 Which of the following is an obstacle to chaining but not to ranging
a) Building b) River
c) Hillock d) None of these
- Q.6 Planimeter is used for measuring.
a) Volume b) Area
c) Slope angle d) Contour gradient
- Q.7 Plotting of inaccessible point on a plane table, is done by
a) Intersection b) Traversing
c) Radiation d) None of the above
- Q.8 Which of the following instrument is used to setup right angles?
a) Cross staff b) Site square
c) Optical staff d) Prism square
- Q.9 Which is the method of plane tabling?
a) Ranging b) Traversing
c) Both A & B d) None of the above
- Q.10 Instrument used for sighting the objects and drawing the rays in plane table surveying
a) Alidade b) Through compass
c) U-for K d) None of the above

SECTION-B

Note: Objective type questions. All questions are compulsory.
(10x1=10)

- Q.11 Geodetic survey of India was done using _____ triangulation system.
- Q.12 In surveying when work is done from part to whole, the smaller errors are _____
- Q.13 Length of an Engineer chain is _____.

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- Q.14 Quadrantal bearings are measured with _____ compass.
- Q.15 Reduced bearing of a Line whose WCB is 312° is _____.
- Q.16 The datum adopted for India is mean sea level at _____.
- Q.17 The fiducial edge of alidade should be _____.
- Q.18 Line ranger is used for _____.
- Q.19 The plane table surveying's suitable for _____ scale mapping.
- Q.20 _____ line is the line drawn through points of the same declination.

SECTION-C

Note: Short answer type questions. Attempt any twelve questions out of fifteen questions.

(12x5=60)

- Q.21 What are the principles of Surveying? Explain.
- Q.22 Give the classification fo Surveying on the basis of instrument used.
- Q.23 What are the obstacles in chain surveying? Explain
- Q.24 What are the different kinds of chains used in surveying?
- Q.25 Differentiate between chain survey and compass survey.
- Q.26 What is local attraction? How is it detected and eliminated?
- Q.27 Describe temporary adjustment of prismatic compass.
- Q.28 Define leveling, What is the principle of leveling? Explain.
- Q.29 What is bench mark? Give their classification.

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- Q.30 Describe the two peg method of permanent adjustment of a dumpy level.
- Q.31 Name the various accessories of the plane table. What are their functions? Explain in brief.
- Q.32 What are the various method of plane table? Explain any two in details.
- Q.33 Write any five advantages of plane table surveying.
- Q.34 Write the purpose of leveling.
- Q.35 Write a short note on check leveling'.

SECTION-D

Note: Long answer type questions. Attempt any two out of three questions. (2x10=20)

- Q.36 The following bearings were observed in running a close traverse. Which stations are affected by local attraction?

Determine the correct bearings.

| Line | F.B. | B.B. |
|------|-----------------|-----------------|
| AB | $78^\circ 15'$ | $257^\circ 30'$ |
| BC | $118^\circ 30'$ | $299^\circ 30'$ |
| CD | $168^\circ 30'$ | $348^\circ 30'$ |
| DA | $227^\circ 45'$ | $47^\circ 15'$ |

- Q.37 The following staff readings were observed successively with a level, the instrument have been moved after 3, 6, and 8 reading: 2.228, 1.606, 0.988, 2.090, 2.864, 1.262, 0.602, 1.982, 1.044, 2.684 fill the above readings in a page of level book and calculate the RL of points using height of instrument method, if the first reading was taken with a staff held on a bench mark of 432.384m.
- Q.38 Explain in detail about "Two point problem" and How it is performed?

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