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

Time : 3Hrs. M.M. : 100

SECTION-A

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

Q.1 Length of Gunter's chain is

- a) 20m
- b) 66ft.
- c) 30m
- d) 100ft.

Q.2 Which of the following is an operation of chain surveying?

- a) Ranging
- b) chaining
- c) offsetting
- d) All the above

Q.3 Plotting of inaccessible point on a table, is done by

- a) Intersection
- b) Traversing
- c) Radiation
- d) None of the above

Q.4 The curvature of earth is ignored in

- a) Plane surveying
- b) Geodetic surveying
- c) Both a and b
- d) None of the above

Q.5 A metallic tape is made of

- a) Steel
- b) Invar
- c) Linen
- d) Cloth and wires

Q.6 If the forebearing of a line AB is 190° , then the back bearing will be

- a) 100°
- b) 90°
- c) 10°
- d) 180°

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Q.7 The instrument used for accurate centering in plane table surveying is:

- a) Spirit level
- b) Plumbing fork
- c) Alidade
- d) Trough compass

Q.8 An invar tape is made of an alloy of

- a) Brass and Nickel
- b) Brass and steel
- c) Nickel and steel
- d) Copper and steel

Q.9 Intersection method of detailed plotting is most suitable for

- a) Hilly areas
- b) Urban areas
- c) Plains
- d) Forests

Q.10 "Three Point Problem" can be solved by

- a) Tracing paper method
- b) Bessel's method
- c) Plains
- d) Forests

SECTION-B

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

Q.11 The basic principle of surveying is to _____ whole to part.

Q.12 Invar tape is made up of _____ and _____.

Q.13 The principle of chain surveying is to divide the area into network of _____.

Q.14 The bearing of a line in the direction of progress of survey is called _____.

Q.15 The horizontal angle between the magnetic meridian and the survey line is called _____.

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- Q.16 The line of collimation and axis of telescope should _____.
- Q.17 A plumbing fork is used to _____ the plane table.
- Q.18 The bench mark established by survey department of India is known as _____.
- Q.19 Inaccessible points may be located by _____ method in plane table surveying.
- Q.20 W.C.B. are measured with _____ compass.

SECTION-C

- Note:** Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)
- Q.21 Explain briefly the principles of surveying.
- Q.22 Give classification of surveying based on nature of field.
- Q.23 Name the various instruments used in chain surveying.
- Q.24 Describe the various methods of chaining on a slope.
- Q.25 Explain how chain is tested and adjusted in the field.
- Q.26 What is magnetic declination? What are the different types of variation in declination? Explain.
- Q.27 What are the advantages and disadvantages of compass surveying? Write in detail.
- Q.28 Explain the temporary adjustment of Dumpy level.
- Q.29 Explain reciprocal levelling. Under what circumstances it is used? Explain.
- Q.30 Explain the procedure of plane table traversing.
- Q.31 Give advantages and disadvantages of plane table surveying.

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- Q.32 State two point problem. How it is solved? Explain.
- Q.33 Write a short note on "orientation of plane table by trough compass".
- Q.34 What type of precautions to be taken into consideration to control the errors in plane table surveying? Explain.
- Q.35 Define levelling staff and how they are classified?

SECTION-D

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

- Q.36 The following bearing were observed while traversing with compass:

Line	FB	BB
AB	45°45'	226°10'
BC	96°55'	277°5'
CD	29°45'	209°10'
DE	324°48'	144°48'

Mention which stations were effected by local attraction and determine the corrected bearings.

- Q.37 The following consecutive reading were taken with a level. The level was shifted after 4th, 7th & 10th readings. The first reading was taken at a BM. of RL 160m. Draw out a page of levelling book, enter the readings & calculate the RL of all the points by height if instrument method.

1.520, 0.965, 1.4775, 1.545, 0.435, 2.545, 1.715, 1.630, 1.915, 0.860, 1.790, 1.365 and 1.135.

- Q.38 Explain the "intersection method of plane table surveying" in detail.

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