Roll No. ☐☐☐☐☐☐☐☐☐☐☐   **Total No. of Pages : 03**

Total No. of Questions : 18

B.Tech. (CE) (2012 to 2017)   (Sem.–3)
SURVEYING
Subject Code : BTCE-304
M.Code : 56075

Time : 3 Hrs.   **Max. Marks : 60**

INSTRUCTIONS TO CANDIDATES :
1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.**

SECTION-A

Answer briefly :

1. What is Reconnaissance?

2. What do you understand by limiting length of an offset in chain survey?

3. Explain with neat sketches open traverse.

4. Define the following: True bearing and Magnetic bearing.

5. What is meant by plane tabling?

6. Explain the need for the following field precautions in leveling :

   I.   Bring the bubble to mid-run just before taking a reading.

   II. Keep, as far as possible, back sight and fore sight distances equal.

7. Define, with the help of neat sketches the following:- Height of instrument and Fore Sight.

8. List the two uses of a contoured topographic map.

9. What contour intervals would you suggest for the following :

   Engineering project and A city survey

10. Define the tangent length with respect to curves.

SECTION-B

11. The length of the offset is 20 m and the scale of the plant is 5 m to 1 cm. If the offset is laid out 4° from its true direction in the field, find the resulting displacement of the plotted point on the paper (i) in a direction parallel to the chain line (ii) in a direction perpendicular to the chain line.

12. What are sources of error in plane table survey? Discuss briefly.

13. A chain line ABC crosses a river, B and C being on the near and distant banks respectively. A line BD of length 100 m is set out at right angles to chain line at B. If the bearings of BD and DC are 287° – 15' and 62' – 15' respectively. Find the width of the river.

14. What are the difficulties in setting out simple curves? Describe briefly the methods employed in overecoming them. :

15. The following bearings are given : calculate in each case, the angle BAC.

	AB	AC
a)	N 25° – 30' E	N 85° –15' E
b)	N 20° – 15' E	N 52° – 30' R
c)	S 70° – 0' E	S 10°– 0' W
d)	N 40° – 30' W	N 46° – 0' E
e)	N 50° – 30' E	S 20° – 30' W

SECTION-C

16. The following notes refer to a part of a traverse survey :

Line	Length in metres	Bearing
AB	686	352° 24'
BC	1824	24° 36'
CD	1053	147° 30'

Calculate the distance between a point E on AB, 28 m from A, and a point F on CD 650 m from C.

17. What are sources of error in Chain survey? Explain in detail.

18. Calculate the offsets at 20 m intervals along the tangents to locate a curve having a radius of 400 m, the deflection angle being 60°.

   a) Define an expression for the following elements of a simple curve :

   b) Length of curve

   c) Apex distance

   d) Mid ordinate

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.