



C14-C-304

4228

**BOARD DIPLOMA EXAMINATION, (C-14)**  
**MARCH/APRIL—2017**  
**DCE—THIRD SEMESTER EXAMINATION**

SURVEYING—II

Time : 3 hours ]

[ Total Marks : 80

---

**PART—A**

3×10=30

- Instructions** : (1) Answer **all** questions.  
(2) Each question carries **three** marks.  
(3) Answer should be brief and straight to the point and shall not exceed *five* simple sentences.

1. Define the following : 1+1+1=3

(a) Levelling

(b) Foresight

(c) Backsight

2. Define benchmark. List the types of benchmark. 3

3. Define the following terms : 1+1+1=3

(a) Change point

(b) Line of collimation

(c) Reduced level

- \* 4. List any three types of levelling staffs. 3
5. If a levelling staff is placed at a distance of 800 m from the instrument, find—  
 (a) correction for curvature;  
 (b) correction for refraction.  $1\frac{1}{2}+1\frac{1}{2}=3$
6. Define contour and contour gradient. 3
7. What is meant by face left and face right of theodolite? 3
8. List the fundamental lines of transit theodolite. 3
9. Define the following terms :  $1\frac{1}{2}+1\frac{1}{2}=3$   
 (a) Changing face  
 (b) Telescope inverted
10. State any four important parts in a transit theodolite and mention their functions. 3

**PART—B**

10×5=50

**Instructions :** (1) Answer *any five* questions.

(2) Each question carries **ten** marks.

(3) Answers should be comprehensive and the criterion for valuation is the content but not the length of the answer.

- \* 11. The following readings were observed successfully on a continuous sloping ground :

0·605, 1·105, 1·895, 2·300, 0·950, 1·340,  
 1·975, 0·760, 1·785, 0·905 and 1·235

The RL of first point was 120·650 m. Find the RL of other stations by using rise and fall method and apply arithmetical checks.

10

- \* **12.** (a) What are the sources of errors in levelling? 5  
 (b) Compare the collimation method with rise and fall method. 5

- 13.** The following details refer to reciprocal levels taken with a dumpy level :

Instrument at	Staff readings on		Remarks
	A	B	
A	1.505	2.875	Distance between A and B = 1150 m
B	0.750	1.895	RL of B = 100.000 m

Find (a) the RL of A, (b) the combined error for curvature and refraction and (c) the collimation error in the instrument. 10

- 14.** A page of an old level book was required to be consisted but found to be damaged. Find out the missing readings marked with a cross and complete the level book page : 10

Station	BS	IS	FS	HI	RL	Remarks
1	3.400			×	×	BM
2		×			192.00	
3	3.900		2.550	×	×	Change point
4		3.400			191.300	
5		×			197.000	Staff inverted
6			×		192.300	Last point

- 15.** What is meant by interpolation of contours? What are the various methods of interpolating contours? Explain briefly. 10

- 16.** Explain the procedure of measurement of horizontal angle by reiteration method. 10

- \* **17.** The following are the corrected latitudes and departures of a closed traverse ABCD. By assuming the independent coordinates of a point A (+100, +100) for North and East respectively, calculate—

(a) independent coordinates of other stations;

\*

(b) find the area of the traverse.

10

<i>Line</i>	<i>Latitude</i>		<i>Departure</i>	
	<i>N</i>	<i>S</i>	<i>E</i>	<i>W</i>
<i>AB</i>	108	—	04	—
<i>BC</i>	15	—	249	—
<i>CD</i>	—	123	04	—
<i>DA</i>	00	—	—	257

**18.** The table below gives the lengths and bearings of the lines of a traverse *ABCDE*, the length and bearings of *EA* having omitted. Calculate the length and bearing of *EA* :

10

<i>Line</i>	<i>Length in M</i>	<i>Bearing</i>
<i>AB</i>	204·00	87°30
<i>BC</i>	226·00	20°20
<i>CD</i>	187·00	280°00
<i>DE</i>	192·00	210°30
<i>EA</i>	?	?

\*\*\*

\*