C-16-C-106

5017

BOARD DIPLOMA SUPPLEMENTARY (INSTANT) EXAMINATION, (C-16)

JUNE - 2019

DCE - FIRST YEAR EXAMINATION

SURVEYING - I

Time : **3** Hours] [Total Marks : **80**

PART - A 2×15=30

Instructions : *(1) Answer any **15** questions.*
*(2) Each question carries **2** marks.*
(3) Answer should be brief and straight to the point and shall not exceed five simple sentences.

1 State the fundamental principles of surveying. **2×1=2**

2 How surveying is classified according to the purpose of surveying? **4×1/2=2**

3 State the division of surveying. **2×1=2**

4 Write any four purposes of surveying. **4×1/2=2**

5 Write any four instruments used for chain surveying. **4×1/2=2**

6 Draw the conventional signs adopted in chain surveying for the following **4×1/2=2**

(a) Chain line

(b) Wire fencing

(c) Road culvert

(d) Level crossing

7	State the principle of chain surveying	**1+1=2**
8	Define offset and state its types.	**2**
9	The length of a line measured with a 20m chain was found to be 634.40m. It was afterwards found that the chain was 5cm too long. Find the true length of line.	**2**
10	Define ranging and state its types.	**1+1/2=2**
11	Write any four purposes of compass surveying?	**4×1/2=2**
12	Define the terms (a) Bearing (b) Meridian	**1+1=2**
13	Convert the following WCB to QB (a) 45°15' (b) 284°30'	**1+1=2**
14	Define traversing and state its types.	**1+1=2**
15	Define leveling and write any two objects.	**1+1=2**
16	Define the following terms (a) Back sight (b) Datum surface	**1+1=2**
17	Mention any four types of levelling instruments.	**4×1/2=2**
18	State any four different methods of levelling.	**4×1/2=2**
19	If a levelling staff is placed at a distance of 800m from the instrument. Find (a) Correction for curvature (b) Correction for refraction.	**1+1=2**
20	State the fundamental lines of a level.	**2**

PART - B 10×5=50

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

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

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

21 Explain any five classifications of surveys based on instruments used. **5×2=10**

22 Explain how reciprocal ranging is conducted in field. **10**

23 The following offsets were taken from a survey line to a curved boundary line. **5+5=10**

Distance(m)	0	5	10	15	20	30	40	60	80
Offset(m)	2.50	3.80	4.60	5.20	6.10	4.70	5.80	3.90	2.20

Find the area between the survey line, the curved boundary line by

(a) Trapezoidal rule

(b) Simpson's rule

24 (a) Define magnetic declination **2**

(b) Find the true bearings of lines with the following observed magnetic bearings and declination **4+4=8**

(1) Bearing of line AB=N 43°20' E, Declination = 2°15' W

(2) Bearing of line CD=S 15°25' E, Declination=1°10' E

25 The following interior angles were measured in a compass closed traverse. The bearing of the line AB was measured 150°15', with prismatic compass. Calculate the bearings of all other lines if $\angle A = 209°45'$, $\angle B = 50°15'$, $\angle C = 95°15'$, $\angle D = 102°15'$, $\angle E = 82°30'$, **10**

26 Explain temporary adjustments for a dumpy level. **10**

27 (a) Compare height of instrument method and rise and fall method **10**

(b) The following consecutive readings were taken with a dumpy level : **5**

1.895, 1.500, 1.865, 2.570, 2.990, 2.020, 2.410, 2.520, 2.960.

The level was shifted after fourth and sixth readings. **5**

The RL of first point was 30.500m. Rule out a page of level book and fill all columns, use height of instrument method and apply usual checks.

28 Explain the errors in levelling. **10**
