6021

BOARD DIPLOMA EXAMINATION

JUNE- 2019

DIPLOMA IN CIVIL ENGINEERING

SURVEYING -I

FIRST YEAR EXAMINATION

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

PART - A (3m x 10 = 30m)

Note 1:Answer all questions and each question carries 3 marks

2:Answers should be brief and straight to the point and shall not exceed 5 simple sentences

1. What do you understand by working from "whole to part and not from part to whole"?
2. Draw the conventional symbols for the following
   a) Double Railway line b) Metal road c) Level crossing
3. Write various code signals used in ranging in chain surveying
4. Convert the following reduced bearing into whole circle bearing.
   a) N 60^0 $30'$ W b) S 80^0 $0'$ E c) N 20^0 $45'$ W
5. State the principle of compass survey and explain briefly
6. Define the terms a) Contour b) Contour interval
7. Define the Bench mark and state the different types of Bench marks
8. List the relationships between the fundamental lines of a Dumpy level
9. If a levelling staff is placed at a distance of 800m from the instrument, find
   a) Correction for curvature(C_c) b) Correction for refraction (C_r)
10. What are the needs for minor instruments in surveying?

PART - B (10m x 5 = 50m)

Note 1:Answer any five questions and each carries 10 marks

2:The answers should be comprehensive and the criteria for valuation is the content but not the length of the answer

11. Explain with a neat sketch of a line ranger, how it is used in alignment of a line.
12. Explain the method of recording the field observations in the field book of chain survey?

13. a) Explain briefly about magnetic declination in compass survey.

b) On an old map a line was drawn to a magnetic bearing of $320^0\ 30'$, when the declination was $3^030'$ W. Find the present bearing of the line, if declination is $4^015'$ E.

14. The following table gives Fore Bearings & Back Bearings of sides of a closed compass traverse. Where do you suspect the local attraction & find the correct bearings?

Line	Fore Bearing	Back Bearing
AB	$55^000'$	$234^000'$
BC	$112^030'$	$294^000'$
CD	$205^000'$	$25^000'$
DE	$257^000'$	$75^030'$
EA	$295^0\ 30'$	$116^030'$

15. a) What is a working profile? Sketch a typical one.

b) Describe the field work to be done for profile levelling.

16. a) A luminous object on the top of a hill is visible just above the horizon at a certain station at sea level. The distance of the top of the hill from the station is 36km. Find the height of the hill. Assume diameter of the earth to be 12,740km.

b) Explain the need for calculating the curvature and refraction errors. Give the formula for both.

17. The Following is the page of an old level field book entered with the pencil. Some of the entries got erased, and have been marked with crosses. Find the missing entries.

Station	B. S	I.S	F. S	Rise	Fall	R. L	Remarks
1	2.150					450.000	BM-1
2	1.645		X	0.500			
3		2.345			X		
4	X		1.965	X			
5	2.050		1.825		0.400		
6		X		X		451.730	
7	-1.690		X	0.120			BM-2 staff held against ceiling
8	X		2.100		X		
9			X	X		499.100	BM-3
	8.445						

18A. Explain the general classification of land surveying

B. Explain the Principle of Pentagraph and its uses?

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