April 2018

Time – Three hours
(Maximum Marks: 75)

[N.B: (1) Q.No. 8 in PART – A and Q.No. 16 in PART – B are compulsory.
Answer any FOUR questions from the remaining in each PART – A
and PART – B

(2) Answer division (a) or division (b) of each question in PART – C.

(3) Each question carries 2 marks in PART – A, 3 marks in Part – B and
10 marks in PART – C.]

PART – A

1. What is geodetic surveying?

2. What are the corrections in tape?

3. What is meant by whole circle bearing?

4. What is back sight in levelling?

5. What is check levelling?

6. What is contour interval?

7. Name any two purposes of GPS.

8. What is local attraction in compass survey?

PART – B

9. What is offset? State the types of offset.

10. What is dip and declination in compass?

11. What is GTS benchmark and permanent benchmark?

12. What is curvature and refraction correction in levelling?

13. What is interpolation of contours? State the methods of interpolation.

14. Write the types of maps in GPS.

15. Write short notes on intermediate and change point in levelling.

[Turn over.....

16. The fore bearings of the following lines are given. Find its back bearing.
    - (a) FB of AB = 310° 30'
    - (b) FB of BC = 140° 15'
    - (c) FB of CD = 250° 15'

PART – C

17. (a) (i) Describe the errors in chain surveying.
    (ii) What is ranging? Describe any one method of direct ranging.

    (Or)

    (b) (i) Write short notes on obstacles in chaining.
    (ii) Define the terms commonly used in chain surveying.

18. (a) Describe prismatic compass with a neat sketch.

    (Or)

    (b) The following are the bearings taken on a closed compass traverse.

Line	FB	BB
AB	80° 10'	259° 00'
BC	120° 20'	301° 50'
CD	170° 50'	350° 50'
DE	230° 10'	49° 30'
EA	310° 20'	130° 15'

    Compute the interior angles. Apply usual check and find out the corrected included angles.

19. (a) The particulars given below is the page of a level field book. Fill in the missing readings. Apply usual check.

Station	BS	IS	FS	HC	RL	Remarks
1	3.100			X	280.500	BM
2	X		X	283.000	281.350	CP1
3		X			279.950	
4		X			279.500	
5	X		2.350	281.385	X	CP2
6		2.135			X	
7		1.705			279.680	
8			X		279.00	

    (Or)

    (b) Describe with neat sketch of a dumpy level.

20. (a) Describe the field procedure of longitudinal section levelling.

    (Or)

    (b) Reciprocal levelling across a river gave the following results between the points A and B.

Inst. Station	Staff station	Staff Reading 'm'
P	A	1.560
P	B	2.380
Q	A	2.240
Q	B	3.100

    Determine the RL of B, if the RL of A is 105.840m.

21. (a) (i) Describe any one method of contouring.
    (ii) Draw the contour lines of a hill and a pond.

    (Or)

    (b) (i) Following are the areas within the contour lines of a proposed reservoir:

Contour 'm'	Area enclosed m²
100	250
110	750
120	1200
130	1900
140	2200
150	3000
160	3050

    Taking 100m as the bed level of reservoir and 160m as the maximum water level of reservoir. Calculate the capacity of reservoir using trapezoidal rule.
    (ii) Explain the segments of GPS.

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