

765**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 are the main divisions of surveying?
2. What is local attraction?
3. Discuss various types of theodolites.
4. Define latitude and departure.
5. What is the purpose of providing anallatic lens in a tacheometer.
6. What is meant by level section?
7. Classify the types of receivers based on application.
8. List out the components of GIS.

PART – B

9. Explain the terms: (i)Base line (ii)Check line (iii)Tie line.
10. Name the fundamental lines of a theodolite and mention the relationship between them.
11. State the functions of the following: (i)Lower clamping screw, (ii)Upper clamping screw, (iii)Vertical circle clamping screw.
12. Explain the fundamental principle of stadia tacheometry.
13. Write any two applications of total station.
14. What are the uses of contour map?
15. Explain the application of GIS in waste land management.
16. Convert the WCB into RB (i)28° 35' (ii)195° 20' (iii)320° 40'

[Turn over.....]

PART - C

17. (a) Calculate the included angles from the following bearings of survey lines observed with a compass.

Line	FB	BB
AB	50° 00'	230° 00'
BC	112° 30'	292° 30'
CD	37° 30'	217° 30'
DE	197° 00'	17° 00'
EA	290° 30'	110° 30'

(Or)

- (b) The following consecutive readings were taken with a level with 4m staff on a continuously sloping ground at 30m interval. 0.780, 1.535, 1.955, 2.430, 3.480, 1.155, 1.960, 2.365, 3.640, 0.935, 1.405, 1.630 and 2.545. The RL of the first point is 225.000. Rule out a page of a level field book and enter the above readings. Calculate the reduced levels of all points by rise and fall method. Find also the gradient of the line joining first and last points.

18. (a) The following table gives the latitudes and departures of the sides of a closed traverse ABCD. Find the area of the traverse.

Side	Latitude (m)		Departure (m)	
	N	S	E	W
AB	214.80	-	124.00	-
BC	-	245.10	205.70	-
CD	-	155.90	-	90.00
DA	186.20	-	-	239.70

(Or)

- (b) Determine the RL of top of a transmission tower from the following observation. The station A, B and top of tower are in the same vertical plane. Use single plane method.

Instrument station	Reading in BM	Vertical angle to top of tower	Remarks
A	2.815	18° 30'	RL of BM=180.000m
B	1.865	12° 40'	Distance AB=80m

19. (a) Explain the procedure for measuring magnetic bearing of a line using total station.

(Or)

- (b) Find the mean value of multiplying constant of a tacheometer with the following observation. Take the value of additive constant as 0.360.

Observation	Horizontal distance (m)	Vertical angle	Staff readings
1	60	+1° 00'	0.860, 1.430
2	120	+1° 12'	1.200, 2.660
3	180	+1° 36'	1.200, 2.930

20. (a) A railway embankment is 10m wide with side slopes 1.5:1. Assuming the ground to the level in a direction transverse to the centre line. Calculate the volume contained in a length of 120m, the centre height at 20m intervals being in metres. 2.2, 3.7, 3.8, 4.0, 3.8, 2.8, 2.5.

(Or)

- (b) Explain the characteristics of contour.

21. (a) Describe the procedure of selection and marking of routings using GPS receiver.

(Or)

- (b) 1) Explain the different types of maps.
2) Write short notes on LIS.
