

748**April 2023*****Time – Three hours
(Maximum Marks: 100)***

- N.B.**
1. Answer all questions under Part-A. Each question carries 3 marks.
 2. Answer all the questions either (A) or (B) in Part-B. Each question carries 14 marks.

PART – A

1. Define baseline and check line.
2. Define Meridian. State the types of meridians.
3. What is meant by level surface and axis of telescope?
4. Define parallax.
5. What are the functions of telescope and plumb bob?
6. Define: Tribrach and standards.
7. State any three advantages of using anallactic lens.
8. Define Valley lines and over hanging cliff.
9. What is GPS? Name any two GPS satellite.
10. List out the various information pages used in GPS receivers.

PART – B

11. (a) Explain about construction of prismatic compass with neat diagram.

(Or)

- (b) A survey line PQ intersects a tall building. To continue the line PQ, a line QR of length 120m was set out at right angle to PQ. From R, two lines RS and RT making angle of 45° and 60° with RQ were ranged. Find the length of RS in order that the stations S and T may be in PQ produced and the length of QS past the building.

[Turn over...

12. (a) (i) Describe principles of levelling.(7)
(ii) State the procedure adopted in simple levelling.(7)
(Or)
- (b) The following consecutive readings were taken with a levelling instrument at intervals of 20m. 2.375, 1.730, 0.615, 3.450, 2.835, 2.070, 1.835, 0.985, 0.435, 1.630, 2.255 and 3.630m. The instrument was shifted after the fourth and eighth readings. The first reading was taken on a BM of RL 110.200m. Find the RLs of all the points.
13. (a) (i) Explain about measurement of horizontal angle by repetition method?(7)
(ii) Explain in detail about measurements of vertical angle.(7)
(Or)
- (b) Explain in detail about field checks in closed traverse.
14. (a) Derive the equations to find the horizontal distance and elevation by the fixed hair stadia tacheometric with a line of sight inclined with staff held vertical.
(Or)
- (b) Determine the distance between the instrument station P and the staff station Q from the following data:
Height of instrument =1.500m
Vertical angle =+4°30'
Staff reading =0.645,1.000,1.355
Also determine the R.L of Q, if RL of P is 200.400. Take C = 100, K=0.
15. (a) (i) State the applications of total station.(7)
(ii) Write short notes on any three accessories used in total station.(7)
(Or)
- (b) Describe observation, data processing and application in civil engineering by using GPS.