

2021

GEOGRAPHY — HONOURS

Paper : CC-4

(Thematic Mapping and Surveying)

Full Marks : 50

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

Category - A

Answer **any five** questions. (each within **50** words)

1. (a) Round the following figures to 4 places of decimals :
 - (i) 3.42799
 - (ii) 90.06554
- (b) Express the following figures without using powers of 10 :
 - (i) 7.123456×10^7
 - (ii) 2.789×10^{-2} . ½×4
2. (a) What is natural logarithm?
- (b) Which of the following are false?
 - (i) $\log_5 1 = 1$;
 - (ii) $\log_{11} 11 = 1$;
 - (iii) $\log_7 (2 \times 3) = \log_7 2 + \log_7 3$. 1+1
3. (a) Which line helps to ascertain the progress of Monsoon on a weather map of Monsoon Season?
- (b) Which symbol is used to represent a cloud amount of 7/8 Oktas? 1+1
4. How will you identify that a given geological map represents
 - (a) Horizontal Structure
 - (b) Folded Structure? 1+1
5. Differentiate between whole circle bearing and reduced bearing. 2
6. Define Collimation Level and Bench Mark. 1+1

Please Turn Over

7. What are the diagrams used to represent the following?

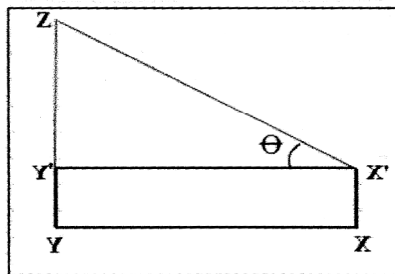
- Land use types in a district
- Soil Texture
- Literacy rate of districts in a State
- Male and Female populations of districts in a State.

½×4

Category - B

Answer **any four** questions. (each within **150** words)

- Differentiate between true dip and apparent dip. How do you identify an unconformity on a geological map? 5
- Discuss the importance of landuse and land cover mapping. 5
- Briefly discuss the advantages of socio-economic maps using appropriate examples. 5
- What is the utility of brake pin in a prismatic compass? What are the sources of error in a prismatic compass? 1+4
- Write a short note on temporary adjustments undertaken in a Transit Theodolite. 5
- (a) The distance between the base of the observation point X and base of a tree (Y) across the river is 30 metres. The height from X to height of instrument (X') is 1.5 metres. The angle (θ) from X' to top of the tree at Z is determined using an Abney Level to be $26^{\circ}30'$. Determine the height of the tree (YZ)



- What is the maximum degrees marked on the graduated arc in the Abney Level? 4+1

- Mention four advantages of Laser Distance Measure (LDM) over a traditional tape. What is the margin of error in a 30 metres LDM? 4+1

Category - C

Answer *any two* questions. (each within **500** words)

15. Discuss the different methods for diagrammatic representation of data. Give suitable examples. 10
16. Differentiate between surveying and levelling. Discuss the different parts of a Dumpy Level and mention the utility of each part. 2+8
17. What are the features of weather that will help you to identify that the weather map is representative of the pre-monsoon season? Use diagrams to illustrate your answer. 10
18. The following are the bearing of lines of a Closed Traverse. The survey was undertaken in a clockwise direction.

Line	Fore Bearing	Back Bearing
PQ	39°	221°
QR	71°	249°
RS	208°	32°
SP	281°30'	98°30'

- (a) Correct the bearings for local attraction.
- (b) Calculate the included angles of the traverse, and
- (c) Undertake checking to verify if sum of interior angles is correct.

4+4+2
