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

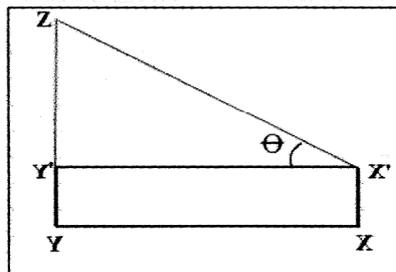7. What are the diagrams used to represent the following?

 (a) Land use types in a district

 (b) Soil Texture

 (c) Literacy rate of districts in a State

 (d) Male and Female populations of districts in a State. ½×4

Category - B

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

8. Differentiate between true dip and apparent dip. How do you identify an unconformity on a geological map? 5

9. Discuss the importance of landuse and land cover mapping. 5

10. Briefly discuss the advantages of socio-economic maps using appropriate examples. 5

11. What is the utility of brake pin in a prismatic compass? What are the sources of error in a prismatic compass? 1+4

12. Write a short note on temporary adjustments undertaken in a Transit Theodolite. 5

13. (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 26º30′. Determine the height of the tree (YZ)

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

14. 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	39º	221º
QR	71º	249º
RS	208º	32º
SP	281º30′	98º30′

   (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

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