

BACHELOR OF SCIENCE EXAMINATION, 2019

(1st Year, 1st Semester)

GEOGRAPHY (HONOURS)

Cartographic Techniques

Paper - C 102 T

Time : Two hours

Full Marks : 30

Use a separate answer script for each group.

GROUP - A

Answer any *four* questions. 5x4=20

1. A stadium has a cricket field with a circular running track around it. The total area is 2.5 sq.km and the width of the track is 20 m. The stadium has been represented on a map with R.F. = 1: 2,000. The map has been reduced three times to produce a new map. What will be the outer circumference of the running track on the new map ? 3+2
2. Classify map projections based on the method of projection. What is the perpendicular distance of 70° S parallel from the equator on earth ? 3+2
3. Explain the principle of construction of a diagonal scale. 5

(Turn over)

(2)

4. Prove that in the simplest case of a conical projection with one standard parallel, the constant of a cone is equal to the sine value of the standard parallel chosen. 2+3
5. Define magnetic bearing. Convert the following whole circle bearings into reduced bearings :
(i) $49^{\circ} 26'$ (ii) $107^{\circ} 42'$ (iii) $202^{\circ} 35'$ (iv) $304^{\circ} 15'$
6. Explain the reference scheme of the Survey of India Open Series topographical maps.

GROUP - B

Answer any *five* questions. 5x2=10

7. What is a double projection ?
8. What is trigonometrical levelling ? Name one survey instrument used for this kind of levelling.
9. Differentiate between triangulation and traversing.
10. Calculate the length of 60° parallel on earth surface in km.

(3)

11. Name (a) an azimuthal map projection which is also orthomorphic and (b) an equal area map projection suitable for tropical regions.
12. What is the area between 30° and 45° N parallel on a globe with radius of 6400 km ?
13. What is a grid reference ? How is it read from rectangular map coordinates ?
14. Provide an example of a comparative scale showing both time and distance graphically.

— X —