WEST BENGAL STATE UNIVERSITY

B.A./B.Sc. Honours 1st Semester Examination, 2021-22

GEOACOR02T-GEOGRAPHY (CC2)

CARTOGRAPHIC TECHNIQUES

Time Allotted: 2 Hours | Full Marks: 40

The figures in the margin indicate full marks.
Candidates should answer in their own words and adhere to the word limit as practicable.
All symbols are of usual significance.

CATEGORY-A

Answer any *one* question from the following 10×1 = 10

1. Classify map projection based on plane of projection and location of tangent plane. Discuss the relative importance of tangential scale and radial scale of a point on any projection. 4+6

2. Compare the Reference schemes of Old and Open Series topographical maps. Mention the characteristics of polar co-ordinate system. 6+4

CATEGORY-B

Answer any *four* questions from the following 5×4 = 20

3. Find the Polar co-ordinates of a point whose Cartesian co-ordinates are (–1, –1).

4. If the measured distance from *x* to *y* on a Map 'A' with a scale of 1:10,000 is 10 cm, then what would be the scale of Map 'B', if the distance between *x* and *y* on that map is 2 cm?

5. Why is UTM co-ordinate system not used beyond 84°N and 80°S Parallels?

6. Prove that the height of any parallel from the equator on Cylindrical Equal Area Projection is $R \sin \phi$.

7. Explain why deformation occurs in map projection.

8. What does UTM grid 58 J refer to? Find out the Easting and Northing of A in UTM grid while it lies 6055 m west of central meridian and 33665 m south of equator.

9. Why is Mercator's Projection regarded as Cylindrical Orthomorphic Projection? Why is this projection useful for navigation? 3+2

CATEGORY-C

Answer any *five* questions from the following 2×5 = 10

10. State the relation between primary, secondary and tertiary divisions of a diagonal scale.

11. What is the significance of Transect Chart?

12. Differentiate between Polar Coordinate and Rectangular Coordinate.

13. Write a short note on Cadastral Map.

14. Mention the advantages of linear scale.

15. Mention the projection of datum of OSMs.

16. A Bonne's Projection is drawn on a scale 1:50,000,000. Calculate the radius of the standard parallel which is 40°S in this Projection.

17. Mention the RF of the following SOI Topographical Maps: 1+1
    (a) 76D
    (b) 74D/9.

18. Find out the rectangular co-ordinates of *M*, while its polar co-ordinates are $\{36\,\text{m}, (\pi - \pi/3)\}$.

N.B. : *Students have to complete submission of their Answer Scripts through E-mail / Whatsapp to their own respective colleges on the same day / date of examination within 1 hour after end of exam. University / College authorities will not be held responsible for wrong submission (at in proper address). Students are strongly advised not to submit multiple copies of the same answer script.*

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