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14 (GGY-3) 3156 (COP)

2022

GEOGRAPHY

Paper : GGY-3156

(Cartography Optional Paper)

Full Marks : 80

Time : Three hours

The figures in the margin indicate full marks for the questions.

GROUP-A

Marks : 48

Answer **any three** of the following questions : 16×3=48

1. What do you mean by geodetic surveying and plane surveying ? With diagrams explain the principles and procedure of triangulation surveying. 4+12=16

2. Discuss the nature and significance of digital cartography. 16

Contd.

3. What is topographic surveying ? With necessary diagrams explain the principles and procedure of plane table surveying by using intersection method. $2+14=16$
4. Stating the basic principles, properties and uses of the Mercator's projection. Carry out necessary calculations for constructing its graticule for the whole world with scale 1:180,000,000 and interval 15° . $6+10=16$
5. What is conformal projection ? With necessary diagrams derive the required formulae to construct the graticule of the Gauss' conformal projection. State its basic properties and uses. $2+10+4=16$

GROUP-B

Marks : 32

Answer **any four** of the following questions : $8 \times 4 = 32$

6. Derive the sine formula of a spherical triangle and mention its utilities. $7+1=8$
7. What is theodolite ? With necessary illustrations discuss its utilities in surveying. $1+7=8$

8. Throw light on preparation of a large scale map with respect to the elements, symbolisation and layout.
 9. Compute the distance between
 $A(17^{\circ}30'N, 73^{\circ}40'E)$ and
 $B(31^{\circ}10'N, 91^{\circ}45'E)$ on the Alber's conical equal area projection with standard parallels $20^{\circ}N$ and $26^{\circ}N$ and scale 1:30,000,000.
 10. Discuss the basic problems of constructing map projection with respect to the earth's shape and size.
 11. Write short explanatory notes on **any two** of the following : 4×2=8
 - (a) Homolosine map projection and its basic properties and uses
 - (b) International map series
 - (c) Total station and its utilities in surveying
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