Sl. No. of Question Paper: 5736

F

Unique paper Code: 219503
Name of the paper: Geophysics
Name of the course: B.Sc (Hons.) Geology
Semester: V
Duration: 3 Hours Maximum Marks: 75

(Attempt any ***five*** questions. Each question carries **equal marks**.)

1. Discuss ***any three*** of the following: ***(5 mark each)***
   a. Skin depth
   b. Magnetic bay
   c. Magnetogram
   d. Reference spheroid
   e. Different arrays of resistivity survey

2. Make a distinction in ***any three*** of the following: ***(5 mark each)***
   a. Seismic refraction and reflection method
   b. Airy's and Pratt theory of Isostasy
   c. Scale and resolution in geophysical surveys
   d. Magnetic Bay and Magnetic Cloud
   e. Static correction and migration in processing of seismic data

3. Write a note on ***any three*** of the following: ***(5 mark each)***
   a. Periodic variation of earth's magnetic field
   b. Stray magnetic material
   c. Magnetic Storms
   d. Lee- Partitioning Array
   e. Roving pot in self potential surveys

4. Describe various correction methods in gravity survey. Explain with diagram *Free air anomaly* in isostatically compensated landmass. ***(15 mark)***
5. Illustrate the interior of the earth as revealed by seismic studies. Discuss the factors which cause variations in the velocities of the seismic waves. ***(15 mark)***
6. What are the major types of magnetic materials? Explain the mechanism of a magnetometer where ferromagnetic material being used as core-material. ***(15 mark)***
7. Describe the usefulness and limitations of vertical electric sounding methods in ground water exploration. Explain resistivity type curves for a two layer strata with suitable sketches. ***(15 mark)***
8. Discuss in detail a suitable geophysical exploration method for ***any one*** of the followings: ***(15 mark)***
   a. Hydrocarbon reservoir
   b. Heavy metal ore deposit