U.G. 6th Semester Examination - 2021

GEOLOGY

Course Code : BGELDSHT6

Course Title : Introduction to Geophysics

Full Marks : 40   Time : 2 Hours

The figures in the right-hand margin indicate marks.

Candidates are required to give their answers in their own words as far as practicable.

1. Answer any **ten** questions: 1×10=10

   a) Define Body wave.

   b) What is Isoseismal lines?

   c) Which of the Electromagnetic method uses signals from natural source?

   d) Which of the logging tool uses Compton Scattering principle?

   e) Define Strokes Law.

   f) Define Youngs Modulus.

   g) What is isotope?

   h) What is Free air Anomaly?

   i) Define Invaded zone.

   j) Define Moho.

   k) What scales are used for magnitude and for intensity?

   l) The latitude correction in gravity is maximum at _____.

   m) Where do the shallow earthquakes occur?

   n) What is meant by a Diurnal Cycle?

   o) What are Magnetic Storms?

2. Answer any **five** question: 2×5=10

   a) Write down an equation that expresses Snell's law.

   b) Name two different geological features or structures or rock types that you might be able to map by carrying out a magnetic survey.

      (Basement structure; igneous intrusives; salt; metallic ore bodies; rocks rich in magnetite; etc)

   c) What do you mean by CMP?

   d) Define Declination and Inclination.

   e) What is Curie Temperature?

   f) What is Seismic Imaging?

g) Distinguish between Seismograph and Seismogram.

h) What is gamma logging?

3. Answer any **two** questions: 5×2=10

a) Describe Earth's current magnetic field.

b) Explain principle and application of electrical survey.

c) Describe different types of logging.

4. Answer any **one** of the following: 10×1=10

a) What are the advantages/disadvantages of using: refraction seismology, heat flow, magnetic surveying, resistivity surveying, and gravity to determine: (i) depth to bedrock, (ii) depth to the water table, (iii) bedrock lithology, (iv) crustal thickness?

b) Discuss the methods of geophysical logging used in Oil exploration.

c) What is a seismic gap and how does it relate to earthquake prediction?

_____