[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 1360 **I**

Unique Paper Code : 2192011101

Name of the Paper : Earth System Science (DSC-1)

Name of the Course : **B.Sc. (H) Geology**

Semester : I

Duration : 3 Hours Maximum Marks : 90

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Answer any **five** questions.
3. **All** questions carry equal marks.

1. Answer the following in very brief :

   (i) What depositional environment is indicated by Stromatolites?

   (ii) What is thermocline?

   (iii) Who gave the principle of order of lateral continuity of strata?

P.T.O.

(iv) Which planet closely resembles the Earth in terms of surface features?

(v) What type of life first came on the Earth?

(vi) What is the approximate age of our Universe?

(vii) What is the Andesite Line?

(viii) Which layer of the Earth helps the plates to move?

(ix) Which seismic wave has maximum velocity?

(x) Which rocks are common between the moon and the Earth?

(xi) What is the average density of the core?

(xii) Write the name of the most saline ocean the world.

(xiii) Where does new crust forms?

(xiv) Where do we have the maximum effect of Coriolis force on the Earth?

(xv) What is the current concentration of Carbon dioxide in the earth's atmosphere?

(xvi) Where do you find accretionary prism-like structures on the Earth?

(xvii) Write the name of active volcanoes in India.

(xviii) Write the name of the rock, which is volcanic equivalent of Granite.

2. Discuss the principle on which the Geological Time Scale is constructed. Discuss major biotic and tectonic events in the history of Earth.

3. Discuss the characteristics features of the Solar System. Also, discuss the Big Bang theory related to the origin of the Universe.

4. Differentiate between the following with neat sketches :

   (i) Inner & Outer Core

   (ii) Seamounts and Guyots

   (iii) Terrestrial & Jovian Planets

5. Write short notes on **any three** of the following :

   (a) Causes of Ocean water mixing

   (b) Principle of Superposition and Principle of Uniformitarianism

(c) Magnetic polarity and causes for its reversal

(d) Mantle convection and its impact on plate motion

6. Write in detail about the following :

(i) Describe various forms of igneous rocks

(ii) Causes of volcanic eruption

(iii) Methods of radiometric dating

7. Comment upon any **two** of the following :

(i) Theory of continental drift proposed by Alfred Wegener

(ii) Mechanical and Chemical layering of Earth

(iii) Coriolis Effect and its role in shaping wind and ocean current patterns

8. Define Earthquake? How do P-waves and S-waves help determine the epicentre of an earthquake? Discuss the relationship between the distribution of earthquake belts and tectonic plate boundaries.