

7. Write short notes on **any three** of the followings :

- (i) Role of fossils and stratigraphic evidence in reconstructing Earth's history.
- (ii) Isostasy.
- (iii) Principles of relative dating.
- (iv) The role of geologic records as a window to Earth's past.

8. Discuss the following in brief :

- (a) Describe the physiographic divisions of India and explain their geological significance.
- (b) Explain how the correlation of rock units across regions is achieved by applying lithological similarities, fossil assemblages and geochronological evidence?

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 5750

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Unique Paper Code : 2192011101

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

Name of the Course : **B.Sc. (H) Geology, I Year,**
NEP-UGCF

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. **All** questions carry equal marks.

1. Answer the following in very brief:

- (i) Write the name of the boundary that occurs between the Core and the Mantle.
- (ii) What is the age of the Blaini Boulder beds?
- (iii) How long (in km) is a degree of latitude measures at equator?

- (iv) What is the present-day concentration of CO_2 in the atmosphere?
 - (v) What is the age of the Pc/C boundary?
 - (vi) Why do icebergs float?
 - (vii) What is the difference between Nautical miles and miles?
 - (viii) What are thermoclines?
 - (ix) What are Horse Latitudes?
 - (x) What is the age of the oldest rock on Earth, and how was this age estimated?
2. Discuss the characteristic features of the Solar System. Also, discuss the Big Bang theory of the origin of the Universe. What does the study of meteorites reveal about the early history of the Solar System?
3. Discuss the Plate Tectonics Theory with the help of suitable diagrams. Give examples of the various types of plate boundaries. Explain how convection current in the mantle acts as a driving mechanism for plate motion.

4. Answer the followings with suitable diagrams :
- (a) Why does the Earth have an atmosphere, whereas the Moon does not?
 - (b) Why does temperature in the troposphere decrease with altitude?
 - (c) Why do the tropical regions of the Earth receive more solar insolation per unit area than the poles?
 - (d) Why is the ozone content of the atmosphere concentrated in a layer rather than being distributed uniformly at all levels?
 - (e) Describe the atmospheric layers.
 - (f) Discuss strato-volcanoes.
5. What do you understand by the thermohaline circulation, and also discuss the mechanism to initiate the thermohaline circulation in the ocean with a neat diagram?
6. Discuss the various types of seismic waves. With the help of a neat diagram, illustrate the layering and composition of the interior of the Earth. Also, indicate all the major internal boundaries, contacts, and discontinuities inside the Earth.