8. (a) Discuss the chemical weathering of feldspar in near surface geochemical environment.

(b) What is Goldichs stability series?

(c) Discuss the formation of stalactite and stalagmite. (5×3)

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 2912 **H**

Unique Paper Code : 32191201

Name of the Paper : Elements of Geochemistry

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

Semester : II

Duration : 3 Hours Maximum Marks : 75

Instructions for Candidates

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

1. (a) Discuss the abundance of elements in the solar system.

(b) Write a short note on galactic nucleosynthesis. (10+5)

2. Write the characteristics of the following element groups with examples of **two** elements for each group.

(a) Chalcophile

(b) LILE (Large Ion Lithophile Elements)

(c) Noble gas

(d) Actinoids

(e) PGE (Platinum Group Elements) (3×5)

3. Write short notes on the followings :

(a) Classification of meteorites

(b) Elemental abundance of earth's crust

(c) Nebular hypothesis (3×5)

4. (a) What is partitioning coefficient and bulk partitioning coefficient?

(b) Discuss how elements behave differently depending on their partitioning coefficient. (5+10)

5. Mention the decay equation, usage and limitations of the following geochronological methods.

(a) Sm-Nd dating

(b) Radiocarbon dating (7.5×2)

6. Write short notes on the followings :

(a) CHUR (Chondritic Uniform Reservoir)

(b) Chondrite normalized REE diagram

(c) Phase transitions within earth's mantle (3×5)

7. (a) What is equilibrium fractionation of stable isotopes?

(b) Define $\delta^{18}O$ value and factors affecting the $\delta^{18}O$ values.

(c) During freezing process, how does the $\delta^{18}O$ value of oxygen isotopes vary in water and ice- Explain. (5×3)

P.T.O.