

**19P445**

(Pages: 1)

Name: .....

Reg. No: .....

**FOURTH SEMESTER M.Sc. DEGREE EXAMINATION, APRIL 2021**

(CUCSS - PG)

**CC19P GEL4 C10 - GEOCHEMISTRY AND ISOTOPE GEOLOGY**

(Geology – Core Course)

(2019 Admission - Regular)

Time: Three Hours

Maximum: 30 Weightage

*(Draw neat sketches wherever necessary)*

I. Short answer type questions. Answer any **four** questions.

1. CHUR
2. Isotope fractionation.
3. Stellar nucleosynthesis.
4. Basic equation of radioactive decay.
5. Entropy.
6. Chemical bonding.
7. Electronegativity.

**(4 × 2 = 8 Weightage)**

II. Short essay questions. Answer any **four** questions.

8. Structure and composition of Earth's mantle
9.  $^{40}\text{Ar}$ - $^{39}\text{Ar}$  isochrons
10. Oxygen cycle in Earth's surface
11. Europium anomaly
12. Fission track dating
13. Meteorites.
14. Flame Photometer.

**(4 × 3 = 12 Weightage)**

III. Long essay. Answer any **two** questions.

15. Explain Lu-Hf decay schemes and Hf model ages. Describe the models of depleted and enriched mantle with reference to Lu/Hf fractionation.
16. Discuss Gibb's phase rule and its applications in geochemistry.
17. Describe Geochemistry of weathering.
18. Explain the principles and analytical procedures of ICP-MS.

**(2 × 5 = 10 Weightage)**

\*\*\*\*\*