

**18P362**

(Pages: 2)

Name.....

Reg. No.....

**THIRD SEMESTER M.Sc. DEGREE EXAMINATION, NOVEMBER 2019**

(Regular/Supplementary/Improvement)

(CUCSS-PG)

**CC15P GEL3 C10 - IGNEOUS AND METAMORPHIC PETROLOGY**

(Applied Geology)

(2015 Admission onwards)

Time: Three Hours

Maximum: 36 Weightage

I. Answer *all* questions in two or three sentence each.

1. Minor elements in rocks.
2. Primary magma.
3. Phase rule.
4. Differentiation index.
5. Doliomorphism.
6. Variation diagram.
7. Kimberlite.
8. Marble.
9. Schist.
10. Metamorphic zones.
11. Retrograde metamorphism.
12. Metasomatism.
13. Metamorphic grades.
14. Porphyroblastic and poikiolblastic textures.

**(14 x 1 = 14 Weightage)**

II. Answer any *seven* questions not exceeding two pages each:

15. Describe Bowen's reaction series.
16. What are REEs? Highlight their significance in the study of igneous rocks.
17. Compare and contrast equilibrium and inequilibrium crystallizations in albite-anorthite system.
18. Describe IUGS QAP classification for plutonic and volcanic rocks.
19. Explain the process responsible for magmatic differentiation.
20. Explain Metamorphic facies.
21. Describe any four Solid-solid reactions in metamorphism.
22. Metamorphic reactions in carbonate rocks.

23. Explain the mineralogy and origin of eclogite.

24. What are paired metamorphic belts? How are they related to plate tectonics.

**(7 x 2 = 14 Weightage)**

III. Write an essay on any *two* questions. Each question carries 4 weightage.

25. Significance of isotope studies in igneous petrogenesis

OR

26. Describe the crystallization and melting sequence in Diopside-Albite-Anorthite system. Add a note on their petrologic significance.

27. Describe the different graphical representation of mineral paragenesis.

OR

28. What are granulites? Highlight their significance and origin.

**(2 x 4 = 8 Weightage)**

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