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Ph.D. Course Work Syllabus

GEOLOGY

Session 2020-21

Syllabus for Ph. D. Course Work in

Geology Examination 2020-21

The Ph. D. Course in Geology shall be of six months. This course shall have Two Papers. Paper- I is theory paper and Paper -II is project course work Each paper is of 100 marks. Theory paper will be of three hours duration. In Paper –II, 40 % marks will be assigned to seminar which will be evaluated by Departmental Research Committee and 60 % marks will be assigned to project work which will be evaluated by external and internal examiners jointly.

Scheme of Examination

| Paper | Title of the Paper | Marks allotted |
|--------------|---|-----------------------|
| Paper-I | Research Methodology, Quantitative Methods and Computer applications | 100 Marks |
| Paper-II | Review of Literature concerning the topic of research and Seminar/Project Report. | 100 Marks |
| | (a) Seminar | 40 marks |
| | (b) Project work and Viva-voce | 60 Marks |

Paper – I: Research Methodology, Quantitative Methods and Computer applications

Research methodology—An overview. Scientific hypothesis. Theory and philosophy of Research Methodology in context to Earth Sciences. Facts and Laws Formulating Hypothesis. Selection and formulation of research problem. Meaning and need of Research design.

Theory of Sampling / field methods, Parametric Analysis and Quantitative and qualitative methods in Geosciences. Methods of data collection. Primary and Secondary data. Observations and tests.

Precision and accuracy in geological data generation. Statistical techniques for processing and analysis of data: Probability, Normal distribution, Binomial and Poisson distribution. Sampling estimates – central tendency parameters. Null hypothesis – student t test and chi square test.

Computer applications in numerical data processing. Microscopic techniques. Staining techniques for distinguishing Calcite-Dolomite, K- Feldspar

Plagioclase-Cordierite. Techniques in photomicrography. . NORM calculation and interpretation of ACF, AKF diagrams. Hydrogeology, Theory and Methods.

Paper - II

Review of Literature concerning the topic of research and Seminar/Project Report.

Literature Review/Project/Assignment works on any current topic of demand in the stream decided by the Supervisor(s) and or DRC. Presentation of report and work.

- (a) Seminar presentation
- (b) Project work and Viva-voce

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