BOARD OF TECHNICAL EXAMINATIONS, PORVORIM - GOA

DIPLOMA PROGRAMME IN MINING ENGINEERING

SECOND SEMESTER

S 4304. INTRODUCTION TO GEOLOGY & MINING

Exam Scheme:
Practical Exam: 50 marks
Term Work: 50 Marks

Teaching Scheme:
Theory – 2 Hrs.
Practical – 4 Hrs

RATIONALE:

The subject is designed to provide the practical knowledge and skill in the basic aspects of geology and mining. Students need to use the models, rock samples, maps etc., to develop the skill to identify features and do certain calculations.

OBJECTIVE:

Theory classes are meant to provide minimum theoretical input to conduct the practical classes. Stress shall be on practical and field visits. A term work journal needs to be prepared by each students, which will include all practicals and field visits.

1. Internal structure of earth.
2. Geological Time Scale.
3. Understanding of plate tectonics:
4. Volcanic activities, Platonic, Hypobyssal and Volcanic rocks.
5. Sedimentation: Formation of coal and other sedimentary rocks.
6. Metamorphism: Formation of mineral deposits.
7. Hydrothermal deposits; formation of economic minerals.
8. Crystallography: crystal symentry.
9. Identification of rock forming minerals with the help of their physical properties. (10 minerals)
10. Identification of rocks as per their mineral content. (10 rocks)
11. Major Coal & Mineral deposits in India – Map preparation.
12. Structural Geology – Maps and Problems (5 maps, 6 problems)
13. Visit to Beneficiation plant including sampling (Field Visit)
14. Different forms and shapes of ore body – seam, lode, vein, outcrop, fault (field Visit).
15. Elements of opencast bench, Type of machinery, Hangwall, Footwall.

Reference Books:

1. A text book of Geology by P. K. Mukherjee.
2. A text book of Geology by V. D. Muthayya.
3. A text book of Geology by S. Roy.
4. A text book of Mineralogy by Dana E. S.
5. Mineralogy for students by M. H. Battey.
6. Principles of Petrology by Tyrrel G. W.
7. Structural Geology by Marland P. Billings (Prentice-Hall of India).
8. Manual of problems in Structural Geology by Gokhale N. W. (CBS Publishers