**Technical Guidelines in the field**

1. **Geological Expedition and Toposheet wise Geological Mapping**
2. To know the lithostratigraphy or geological setting of the area, preliminary reconnaissance should be made by walking a well-exposed section. Walk across the strike to get different rock types to establish the stratigraphy.
3. Keeping in mind the main objective of expedition being exploring the economic minerals and rock types, every litho unit have to be assessed and recognized.
4. Organize your time and activity in a systematic manner. Develop a plan of work.
5. Divide the area into blocks and map these systematically one to the next.
6. Do not start work in widely separated areas. Rather begin from a well exposed section and move outward from this.
7. If you get stuck in an area and can’t sort it out then map the surrounding areas and go back to the difficult area later when you are more experienced.
8. Keep the minimum traverse spacing of 500 m and 250 m for 1:50000 and 1:25000 scaled base maps respectively.
9. While tracing the contact of any rock types follow the strike of the rock and see the nature of topography. Construct structure contours to follow the outcrop contact. Use **“V” rules** to interpret the unexposed litho-contacts.
10. If you feel that the rock is not exposed at a place as per your expectation or some other rock type is exposed instead then you have to make your hypothesis with rational justification….for eg in above case you could say there may be fault line that has offset the sequence of the strata, however you cannot directly conclude as you have to look for other evidences.
11. Always visualize things in three-D while mapping.
12. Always plot attitudes while in the field to get correct location and trend of the rock types.
13. Take enough time to examine the rock while in field and if you suspect any occurrences of mineral where you are unable to make judgment bring the sample to the Head office for group discussion.
14. Decide where you will place your Cross-section (s) before you finish your field work. Choose a line (s) normal to the strike of the main structure (s).This should reveal geology that is representative of the structure and should be well exposed.
15. Walk the line of section and record as much structural data as possible along the line.
16. It is very vital to maintain the proper direction and amount of dip while drawing the geologic contacts on the topographic profile.
17. **Geological Mapping for Construction Materials**
18. See the nature of rock dip i.e. whether dipping against or parallel to slope of topography.
19. Examine carefully the thickness of the bed and measure it.
20. See the degree of fracture
21. Record the attitude of all joint sets and measure the joint spacing as well.
22. Always see the unwanted intercalations as these may affect your reserve calculation.
23. Carry out trenching to expose the contacts if there is not much outcrops.
24. Collect appropriate number of samples for competitive tests to examine whether the rock type is of any economic significance to avoid misjudging it for mere low value mineral. E.g. High grade marble or quartzite is more economic to be used for industry rather than construction materials.
25. Follow the steps i-vi and viii-xv of the geological mapping mentioned above.
26. **Mineral Investigations/Exploration**

The mineral exploration will involve two main stages: I) Preliminary exploration and II) Detailed exploration

1. **Engineering geology**
2. Closely observe the joint system.
3. See the rock type.
4. Observe the nature of rock dip: whether dipping upslope or along the slope plays vital role in slope failure or mass movement.
5. For slope stability probability classification it is important to see the number of joint sets, spacing between the joints and the materials that have filled the fracture gap.