

**Presidency University**  
Department of Geology

*PG Admission Test 2013*

*Answer all questions (questions carry equal marks)*

Full Marks: 100

Time: 2 Hrs

1. How would you distinguish between an isotropic mineral and an anisotropic mineral cut perpendicular to optic axis in thin sections under petrological microscope?
2. Draw indicatrix diagram of biaxial mineral.
3. Why are intraclasts rare in siliciclastic rocks?
4. Which of the following structures can be used to determine the direction of stratigraphic younging of a succession? State with reasons.  
(a) Current ripple; (b) Planar tabular cross-bed; (c) Parting lineation; (d) flute cast.
5. Briefly describe the processes of fossilization of a bivalve.
6. What are the main morphological differences between a regular and an irregular echinoid?
7. What is the difference between 'resource' and 'reserve'? Name different kinds of gold deposits and give example of any one kind of gold deposit in India.
8. Name three major iron ore mining belts in India. What is the most common host rock of iron ore deposits in India?
9. A metamorphic complex, intruded by a dolerite dyke, comprises index minerals like biotite 1, biotite 2 and garnet of 350 m.y., 250 m.y. and 300 m.y. age respectively, and is overlain by a sedimentary rock layer with dinosaur egg fossil. State the succession of geological events and the approximate age of dolerite.
10. What is Gondwanaland? How the *Ptylophyllum* flora have been used in the classification of Gondwana rocks.
11. How do you account for reverse and oscillatory zoning in plagioclase?
12. Basalt is much more abundant than rhyolite in nature- does it suggest the generation of basaltic melt in much higher volume in nature compared to rhyolite melt?
13. In which tectonic setting do you find eclogite facies rocks? What is the reason for complete absence of plagioclase feldspar in eclogite?
14. "Biotite is plotted out of the AFM plane for low-grade metamorphic assemblages, but it plots inside for high-grade assemblages" - why?
15. Define "dip isogon". How would you construct a dip isogon between two layers of a fold.
16. Discuss with suitable illustration, under what condition a fault plane cutting across both the limbs of a fold will show no displacement along it.
17. State the characteristic differences between Mid Oceanic Rift-ridge and Oceanic Trench systems.
18. Arrange following geological events in chronological order (oldest to youngest). Pangaea> Atlantic ocean> Laurasia> Tethys ocean> Singhbhum shear zone> Himalaya> Deccan trap.
19. Name the large platformal Proterozoic basin in the Bundelkhand craton. Comment on the time of initiation of this basin.
20. What are the characteristic rock associations of Archaean terranes? Give one Indian example of such Archaean terrane.