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**CS-107/06**  
**GEOLOGY**  
**Paper-II**

**Time : 3 Hours ]**

**[ Full Marks : 300**

- Note :** (1) Candidates should attempt Question No. 1 from Section-A and Question No. 5 from Section-B which are compulsory, and any **three** of the remaining questions, selecting at least one from each Section.
- (2) All questions carry equal marks.

**SECTION-A**

1. Answer any **three** of the following in about 200 words each : **20 × 3 = 60**
- (a) What is a spherical projection ? How is it related to stereographic projection ? Give the merits of stereographic projections.
- (b) Discuss in brief the processes associated with the diversification of primary magma.
- (c) What are heavy minerals ? Discuss their significance in the study of provenance.
- (d) Describe ACF diagram and its utility.
2. Give an account of Olivine Group of minerals with reference to their general formula, crystal structure and diagnostic physical and optical properties. **60**
3. Write explanatory notes on the following :
- (a) Petrological characteristics and petrogenesis of carbonatites giving an Indian example. **30**
- (b) Describe the texture of sedimentary rocks and their geological significance. **30**
4. Give depositional model and tectonic evolution of Gondwana basin. **60**

**SECTION-B**

5. Write notes on any **three** of the following : **60**
- (a) Metallogenic epochs and provinces.
- (b) Geology of Bauxite deposits of Panchpatmali.
- (c) Environmental impact of open cast mining.
- (d) Techniques of sampling.
6. Describe the geology, occurrence and distribution of coal deposits in India. **60**

7. Write notes on the following in brief :
- (a) Give an account of the classification of the mineral deposits and give Indian examples. **30**
  - (b) Describe the different methods of ore reserve estimation. **30**
8. Answer any two of the following : **30 × 2 = 60**
- (a) Natural hazards and their mitigation.
  - (b) Conservation of mineral resources.
  - (c) Discuss whether the Legislative measures in India are adequate for Environmental protection.
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