

2018

GEOLOGY - PAPER-II

Time Allowed : 3 Hours

Full Marks : 200

If the questions attempted are in excess of the prescribed number, only the questions attempted first up to the prescribed number shall be valued and the remaining ones ignored.

Answers may be given either in English or in Bengali but all answers must be in one and the same language.

GROUP-A

Answer any three of the following Questions :

1. a) What are crystal systems ? Illustrate with Stereogram the forms of the normal class of Tetragonal System. Draw a neat sketch of the crystal form of normal class. 20
- b) What is a twin crystal ? Illustrate twin laws and common types of twins in rock-forming minerals. 20
2. a) Briefly state different approaches for the classification of igneous rocks. Illustrate with diagram the IUGS classification of plutonic igneous rocks. 20
- b) Briefly describe the mechanisms of magmatic differentiation. 20
3. a) Illustrate with neat sketches the primary sedimentary structures that can be used for distinguishing between a normal and an overturned limb of a fold. 20
- b) How are carbonate rocks classified based on textural components ? State genetic implications for such classification. 20
4. a) Give an account of the origin of bauxite deposits. Briefly state the major types of bauxite deposits in India and their distribution. 20
- b) What are porphyry copper deposits ? Briefly state characteristics and mode of origin of such deposits. 20
5. a) What are metamorphic facies ? How are metamorphic facies classified ? 20
- b) Give an account of mineralogical and textural changes in basic igneous rocks during regional metamorphism. 20

GROUP-B

Answer any two of the following Questions :

6. Write notes on any four of the following :
 - i) Migmatites
 - ii) Pyroclastic deposits
 - iii) Carbonate Cements
 - iv) Earthquake hazards
 - v) Optical indicatrix diagrams 10x4
7. a) Illustrate with neat sketches the principles of optic sign determination from interference figures of biaxial minerals. 20
- b) Briefly discuss the petrogenesis of anorthosites. 20

8. a) Give an account of impact of mining activities on environment. Suggest possible measures for the mitigation of such hazards. 20
- b) Illustrate with neat sketches the facies model for sedimentation in meandering fluvial system. 20

