

IFS Geology 2007 PAPER I

SECTION A

1. Write critical notes, within 150 words each, on any four of the following :

(a) Solar System.

(10)

(b) Landforms.

(10)

(c) Aerial photographs and their interpretation.

(10)

(d) Unconformities.

(10)

(e) Weathering and Mass-Wasting.

(10)

2. What are volcanoes? Discuss volcanic eruptions with special reference to India.

(40)

3. (a) Discuss in detail the basic concepts in geomorphology. Illustrate your answer with suitable Indian examples.

(20)

(b) Geographical Information System and its applications.

(20)

4. Discuss in detail the principles of geologic mapping and map reading.

(40)

SECTION B

5. Write critical notes, within 150 words each, on any four of the. Following :

(a) Microfossils.

(10)

(b) Evolution of the Himalaya.

(10)

(c) Lithostratigraphic classification of strata.

(10)

(d) Rainwater harvesting.

(10)

(e) Rocks as construction material.

(10)

6. Discuss in detail the evolutionary trends of Trilobita. Illustrate your answer with neat sketches.

(40)

7. (a) Discuss the stratigraphic distribution and lithology of the Siwalik Group.

(20)

(b) Discuss in brief igneous activity in India during the geologic past.

(20)

8. (a) Discuss the various water-bearing characteristics of rocks. Give suitable examples.

(20)

(b) Discuss the various geological investigations you shall undertake before and during construction of a bridge.

(20)

PAPER - II

SECTION A

1. In about 150 words each, write on any four of the following :

(10 × 4 = 40)

- (a) Use of projection diagrams to represent crystal symmetry.
- (b) Twinning in minerals.
- (c) Magmatic differentiation.
- (d) Heavy minerals and their significance.
- (e) ACF and AKF diagrams.

2. Define Inosilicates. Giving their general characters, describe the minerals of pyroxene group.

(40)

3. (a) Describe the crystallization of two- component system of Anorthite-Albite with solid solutions.

(20)

(b) What is understood by metamorphism in geology ? List different types of metamorphism.

Discuss any one type with suitable examples.

(20)

4. Enumerate and explain the formation of different types of sedimentary structures. Write an account on their significance.

(40)

SECTION B

5. Attempt any four answering in about 150 words each :

(10 × 4 = 40)

- (a) Pneumatolysis in ore geology.
- (b) Environmental impact of use of fertilizers.
- (c) Environmental impact assessment (EIA) in mining.
- (d) Graphical methods of estimation of ore reserves.
- (e) Thermodynamic principles.

6. (a) Give an account of the nature and occurrence of Pb-Zn deposits of either of the following in Rajasthan :

(20)

- (i) Zavar mines
- (ii) Rampura-Agucha.

(b) Explain secondary (supergene) enrichment. Describe the physical and chemical factors that control above process.

(20)

7. Enlist various methods of prospecting of ore. Discuss in detail the sub-surface methods of exploration for copper and groundwater bodies.

(40)

8. (a) What are Meteorites ? Give their classification. Explain in detail their characters.

(20)

(b) Describe the environmental impact due to an open-cast mine in the coalfields of India. What remedial measures are being adopted there?

(20)