IFS Geology 2006 PAPER I

SECTION A
1. Write notes, within 150 words each, on any four of the following:
(a) Types of plate boundaries
(10)
(b) Impact of litho logy on the geomorphology
(10)
(c) Significance of GIS
(10)
(d) Significance of unconformities
(10)
(e) Mechanism of development of concentric folds
(10)
2. How do primary island arcs differ from the secondary island arcs? Also discuss their global distribution.
(40)
3. Answer the following:
(a) Discuss the advantages and limitations of aerial photographs.
(20)
(b) How does geomorphology help in environmental studies?
(20)
4. Describe different types of strain markers that are used for the determination of 3-D strain in deformed rocks.
(40)
SECTION B
5. Write notes, within 150 words each, on any four of the following
(a) Evolutionary trends in trilobites
(10)
(b) Blaini boulder bed
(10)
(c) Salt-water intrusion
(10)
(d) Geological factors for dam site selection
(10)
(e) Inter-trappean beds
6. Discuss the environment and modes of preservation of fossils.
(40)
7. Discuss in brief:
(a) Significance of flora in the classification of Gondwana Group
(20)
(b) Cretaceous-Tertiary boundary and its geological significance
(20)
8. Answer the following:
(a) Give Darcy's formula and explain how the coefficient of permeability is determined.
(20)

(b) Discuss the mechanical properties of the foundation rocks that are determined prior to construction in an engineering project.
(20)

PAPER - II

SECTION A

1. In about 150 words each, answer any four of the following:
(a) Describe the clastic sedimentary structures.
(10)
(b) Distinguish between twinning and parting in minerals.
(10)
(c) Distinguish petrographically between a granite and a syenite.
(10)
(d) Write on the factors controlling metamorphism and the products of metamorphism.
(10)
(e) Classify the ultramafic rocks on the basis of mineralogy and other features.
(10)
2. Write notes on:
(a) Crystal defects.
(10)
(b) Optical extinction and dispersion.
(10)
(c) Structural classification of silicates.
(10)
(d) Name and composition of two minerals from the groups of carbonate, phosphate, oxide, sulphide and halide.
(10)
3. (a) Write on the evolution of igneous rocks from fractionation of a basaltic magma. (20)
(b) Write on regional dynamo thermal metamorphism, stating the mineralogical and textural characters.
(20)
4. Describe the Gondwana basins of India along with a note on their depositional environment and economic importance.
(40)

SECTION B

5. Attempt any four answering in about 150 words each:
(a) Heavy mineral beach deposits of India.
(10)
(b) Methods of mineral exploration.
(10)
(c) Industrial and radio-active waste disposal.
(10)
(d) Elementary thermodynamics.
(10)
(e) Conservation and utilization of mineral resources.
(10)
6. Write on the following:
(a) Origin of the banded iron formation.
(20)
(b) Base metal sulphide deposits in India.

(20)
7. Write on the methods of exploration and mining of metallic ore deposits.
(40)
8. (a) Write on the cosmic abundances .of elements, and the composition of the Earth in relation to the chemistry of extra-terrestrial materials.
(20)
(b) Write on natural disasters and their mitigation.
(20)