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(February)

GEOLOGY

(Honours)

(**Economic Geology**)

(GELH-503)

Marks : 56

Time : 3 hours

*The figures in the margin indicate full marks
for the questions*

Answer **four** questions, selecting **one** from each Unit

UNIT—I

(**General Economic Geology**)

1. (a) Define the terms 'ore' and 'gangue' minerals. Give examples. 2+2=4
- (b) Describe the endogenetic process for the formation of economic minerals. 10

2. Write short notes on any *four* of the following : 3½×4=14
- (a) Placer deposits
- (b) Metamorphic deposits
- (c) Lindgren classification of mineral deposits
- (d) Oxidation and supergene enrichment
- (e) Evaporation and bacteriogenic deposits

UNIT—II

(**Indian Economic Mineral Deposits**)

3. (a) Mention at least three ore minerals of aluminium with their chemical compositions. 2
- (b) Discuss the origin and mode of occurrence of aluminium. 6
- (c) Briefly describe the origin and distribution of gold in India with special reference to Kolar Gold Fields. 3+3=6

(3)

4. Write short notes on any *four* of the following : $3\frac{1}{2}\times 4=14$
- (a) Mode of occurrence and origin of iron
 - (b) Uses of chromite
 - (c) Khetri Copper Belt
 - (d) Ore minerals of lead with their respective chemical compositions
 - (e) Diamond deposits of India

UNIT—III

(Petroleum and Radioactive Minerals)

5. (a) Give a brief account on the origin of petroleum. 6
- (b) Discuss the formation of petroleum and mention the different forms of petroleum. 6
- (c) Name two important productive oil fields in NE India mentioning the oil-bearing horizons. 2
6. Name two ore minerals of thorium with their chemical compositions. What is the principal mineral from which thorium is obtained in India? Write notes on the mode of occurrence, origin, uses and distribution of thorium deposits in India. $2+2+3+3+2+2=14$

(4)

UNIT—IV

(Coal)

7. (a) Discuss the rank of coal with major stages of development from peat to meta-anthracite with suitable diagrams. $8+2=10$
- (b) Briefly discuss the major coalfields in India. 4
8. Write short notes on any *four* of the following : $3\frac{1}{2}\times 4=14$
- (a) Fixed carbon content
 - (b) Calorific value
 - (c) Chemical properties of coal
 - (d) Vitrain
 - (e) Sapropelic coal
