

2019

GEOLOGY

(Major)

Paper : 6.2

**(Indian Mineral Deposits and
Mineral Economics)**

Full Marks : 60

Time : 3 hours

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

1. Answer the following questions : 1×7=7
- (a) Name two minerals used as raw materials in cement industry.
 - (b) Name one ore mineral each of zinc and lead.
 - (c) Name two radioactive minerals which can be exploited for rare-earth elements.
 - (d) Give the name and chemical composition of any one ore mineral of copper.
 - (e) Cite one place of occurrence of gold in India.

(2)

- (f) What do you understand by cut-off grade?
- (g) What do you understand by tonnage of an ore deposit?
2. Give short answers to the following (any four) : $2 \times 4 = 8$
- (a) What do you mean by proved reserve and probable reserve?
- (b) What is refractory material? What are the uses of a refractory material?
- (c) Write at least two characteristic properties of asbestos that make it suitable for industrial use.
- (d) What are different host rocks of diamonds?
- (e) What kind of geological environment results in formation of limestone deposits?
3. Answer any three of the following questions : $5 \times 3 = 15$
- (a) Give at least three differences between ironstone deposits and banded iron formations. Cite one example of each. $4 + 1 = 5$
- (b) What are the criteria to set a mineral as strategic or critical mineral? 5

(3)

- (c) Name two ore minerals of uranium. Give their chemical compositions. Mention the names of two places in India where Proterozoic uranium deposits are found. $1 + 2 + 2 = 5$
- (d) Write briefly on the origin of manganese nodules. 5
4. Answer any three questions from the following : $10 \times 3 = 30$
- (a) Describe the mineralogy, genesis and Indian occurrences of bauxite deposits. 10
- (b) How do chromite deposits form? What are different types of chromite deposits? Briefly describe chromite deposits of Sukinda. $2 + 3 + 5 = 10$
- (c) Give an account of different ore mineralizations in Singhbhum shear zone. 10
- (d) What do you understand by supergene enrichment deposits and gossan? Illustrate with a neat sketch of supergene enrichment profile. What are the common ore minerals found in supergene enriched zones? $4 + 4 + 2 = 10$
- (e) Write about the key functionalities of National Mineral Policy. Give Indian occurrences of three strategically important elements. $8 + 2 = 10$

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