This question paper contains 3 printed pages.]

Your Roll No. .....

1324 **A**

B.Sc. (Hons.)/III

GEOLOGY—Paper IX

(Ore Geology)

(Admissions of 2004 and after)

Time : 3 *Hours* *Maximum Marks* : 45

(Write your Roll No. on the top immediately on receipt of this question paper.)

Attempt ***five*** *questions in all.*

Q. No. **1** *is compulsory.*

All *questions carry equal marks.*

1. (i) Which is the largest Copper mine in the country now?

   (ii) Singhbhum shear zone is known for three types of mineral deposits. Name them.

   (iii) What is the main economic interest in Mn-nodules?

   (iv) What is Rampura-Agucha deposit known for? Where is it located?

   (v) Can the major iron ore resource in India be classified as superior or Algoma type. Comment in three lines.

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(vi) What is the mineralogical association in gondites?

(vii) Where is upcoming mine of UCIL outside Singhbhum shear zone?

(viii) What are the source rocks of East Coast bauxite deposits?

(xi) What is desulfovibrio desulfuricans? What is its role in syngenetic ore deposition?

2. What factors control localisation of ore deposits in a regional and in local scales? Elaborate your answer with Indian examples wherever possible.

3. Mention the composition, uses and geological environment of any ***three*** of the following minerals :

(i) Columbite-tantalite (ii) Cassiterite

(iii) Wolframite (iv) Uraninite

4. Distinguish critically the process involved in any ***three*** of the following pairs :

(a) Alteration haloes and zoning

(b) Lateritoid ores and gossan

(c) Roll-type uranium and supergem copper sulfides

(d) Liquation and filter pressing

5. What ore concentration are found in Bushveld and Sudbury? Discuss the distribution, nature and origin of any one of these world-class occurrences.

6. Give a short geological account of any ***two*** of the following :

   (a) Manganese ores of central India

   (b) Kolar gold field

   (c) Zawar ore district

7. How do you compare and contrast between intracrustal and hydrothermal ore deposits? Explain your answer with sketches and with the aid of global examples.

8. What are different environments in which mechanical concentration of placers take place? What factors are critical in each of these environments. Explain with sketches, wherever feasible.