Total No. of printed pages = 4

3 (Sem 6) GEL M1

2015

GEOLOGY

(Major)

Theory Paper : M-6.1

(Ore genesis and Prospecting)

Full Marks – 60

Time – Three hours

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

GROUP – A

1. Answer the following questions as directed : $1 \times 4 = 4$

   (a) What is tenor of ore ?

   (b) Name two ore minerals of zinc.

   (c) Podiform chromite deposits are associted with _____ . (Fill up the blank)

   (d) Wall rock alterations are associated with orthomagmatic ore deposits. (True/False)

2. Answer the following questions in brief : 2×3=6

(a) Define orthomagmatic ore deposits.

(b) Write chemical compositions of sphalerite, chalcocite, hematite and gibbsite.

(c) Define complex pegmatite.

3. Answer any *two* questions from the following : 5×2=10

(a) Why the Banded Iron Formations are almost always found in the precambrian rock horizons and not in Phanerozoic rock horizons ?

(b) Write about chemical composition of hydrothermal fluids.

(c) Define metallogenic epoch. Mention some important mineral deposits of the early Proterozoic metallogenic epoch.

4. Write an account on structural and chemical controls of ore localization with suitable illustrations. 10

Or

Write an account on geology, mode of occurence and genesis of volcanogenic massive sulphide ore deposits. 10

5. Define the Banded Iron Formation. Write elaborately about the facies and mineralogy of the Banded Iron Formation. 3+7=10

Or

Write on the following : 5×2=10

(a) Paragenesis and zoning of ore deposits

(b) Metamorphic type ore deposits.

Group – B

6. Answer the following questions as directed : 1×3=3

(a) The instrument used for detection of ground movement in seismic survey is called _____. (Fill up the blank)

(b) Name the S.I unit of the strength of the earth's gravitational field.

(c) Geiger Counter is an instrument that can be used for prospecting of _____ _____. (Fill up the blank)

7. What is geochemical background in geochemical prospecting ? 2

8. Answer any *one* question from the following : 5

(a) Write about 'free air correction' in gravimetric survey.

(b) Write briefly about the path finding elements in geochemical prospecting.

9. Write briefly about working principles of different methods of electrical prospecting. Describe the different types of electrode arrays used in electrical resistivity survey with special reference to their applications. 4+6=10

Or

Write briefly about the following : 5+5=10

(a) Geological prospecting

(b) Refraction seismic survey.