

Total No. of Printed Pages—4

6 SEM TDC GEO M 3

2017

(May)

GEOLOGY

(Major)

Course : 603

(Geological, Geochemical and Geophysical Exploration)

Full Marks : 48

Pass Marks : 19/14

Time : 2 hours

The figures in the margin indicate full marks
for the questions

UNIT—21.1

(Geological Exploration)

(Marks : 16)

1. (a) Answer the following : 1+1=2

- (i) What do you understand by the scale of a geological map?
- (ii) What type of mineral deposit can be expected by studying a gossan on the surface?

(b) Write on any *two* of the following : $3 \times 2 = 6$

- (i) Difference between geological criteria and geological guide
- (ii) Stages of geological exploration
- (iii) Primary environment and secondary environment

2. Write about any *two* of the following : $4 \times 2 = 8$

- (a) Magmatogenic criteria for prospecting
- (b) Colour on outcrop as a geological criteria for prospecting
- (c) Structural criteria for prospecting
- (d) Facies and lithological criteria for prospecting

UNIT—21.2

(**Geochemical Exploration**)

(Marks : 16)

3. (a) Define the following : $1+1=2$

- (i) Background value and threshold value
- (ii) Geochemical mobility

(3)

(b) Write short notes on any *two* of the following : $3 \times 2 = 6$

(i) Geochemical association of elements

(ii) Dispersion and dispersion patterns

(iii) Geochemical indices of petroleum

4. Write about accumulation and dispersion of metals. 8

Or

Explain geochemical cycle and mobility of elements. 8

UNIT—21.3

(Geophysical Exploration)

(Marks : 16)

5. (a) Fill in the blanks of the following : $1 \times 2 = 2$

(i) The geophysical method is applied to study the structure up to the basement below thick sedimentary formations ____.

(ii) Induced polarization method is suitable for ____ ore deposits.

(b) Write on any *two* of the following : (3×2=6)

- (i) Self-potential method
- (ii) Various geophysical properties of rocks utilized for mineral exploration
- (iii) Radioactive method of prospecting

6. Discuss either the resistivity or gravity method of exploration in terms of the following : 2×4=8

- (a) Principle of the method
- (b) Instruments used
- (c) Field techniques for data acquisition
- (d) Interpretation of data

(Marks : 16)