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Ex/SC/GEOL/UG/CORE/TH/12/2024(S)

**B. SC. GEOLOGICAL SCIENCES EXAMINATION, 2024**

( 3rd Year, 1st Semester, Special Supplementary )

**ECONOMIC GEOLOGY**

**PAPER – CORE/TH/12**

Time : Two hours

Full Marks : 40

(Use a separate Answer script for each Part)

**PART – I (20 Marks)**

Answer any *two* questions.  $2 \times 10 = 20$

1. Write in detail about the origin of stratiform chromitite layers in the ‘Bushveld type’ and ‘Ophiolite hosted’ chromite deposits.
2. What is a nodular texture in podiform chromitite? Explain the origin of podiform chromitite.
3. What is sulfide liquid immiscibility? Write in detail about the origin of the magmatic Ni-Cu-(PGE) sulfide deposits.
4. Write about the Nuasahi Ultramafic-Mafic Igneous Complex and its different ore deposits.

**PART – II (20 Marks)**

Answer any *four* questions from the following:  $4 \times 5 = 20$

1. Define the terms ore, ore mineral and gangue mineral. Name at least one common ore mineral each of Cu, Pb, Zn and Fe.  $3+2=5$

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2. Why are porphyry deposits called “porphyry” deposits? What are greisens and skarn deposits?  $2+3=5$
3. What are residual enrichment and supergene enrichment? Give examples of metal deposits formed by this processes.  $3+2=5$
4. What do you understand by “hydrothermal ore deposits”? Briefly discuss about the different sources of fluid that form hydrothermal deposits.  $2+3=5$
5. “Cr and PGE mineralizations are associated with ultramafic igneous rocks, whereas Sn and W mineralizations are associated with felsic igneous rocks” – Why? Explain why Cr is known as “early riser” whereas Sn is known as “late bloomer”.  $3+2=5$
6. Write short notes on
  - 1) Volcanogenic massive sulfide (VMS) deposits and
  - 2) Gossans.  $2\frac{1}{2} \quad 2\frac{1}{2} \quad 5$