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3 (Sem-4/CBCS) GLG HC 2

2024

GEOLOGY

(Honours Core)

Paper : GLG-HC-4026

**(Stratigraphic Principles and
Indian Stratigraphy)**

Full Marks : 60

Time : Three hours

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

1. Answer the following : $1 \times 7 = 7$

(a) The fundamental unit in biostratigraphy
is _____.

(i) Stage

(ii) Zone

(iii) Range

(iv) None of the above

Contd.

(b) The term 'TRM' stands for _____ in magnetostratigraphy.

- (i) Terrestrial Remanent Magnetism
- (ii) Total Remanent Magnetism
- (iii) Thermal Remanent Magnetism
- (iv) Transitional Remanent Magnetism

(c) The GSSP (Global Boundary Stratotype Section and Point) found in North-East India is known as _____.

(d) Which mobile belt separates the North Indian Block from the South Indian Block ?

- (i) Pandiyan Mobile Belt
- (ii) Albany Fraser Mobile Belt
- (iii) Satpura Mobile Belt
- (iv) Indo-Myanmar Mobile Belt

(e) Strata represented by the Lolab Formation in Kashmir belongs to the _____ period.

- (i) Precambrian
- (ii) Cambrian
- (iii) Devonian
- (iv) Jurassic

(f) The origin of Rajmahal Trap and Sylhet Trap is associated with

- (i) Kerguelen hotspot
- (ii) Reunion hotspot
- (iii) Yellowstone hotspot
- (iv) Hainan hotspot

(g) The Precambrian-Cambrian boundary in the Himalayan Region of India is represented by the Blaini-Krol-Tal sequence. (True/False)

2. Answer **all** questions : $2 \times 4 = 8$

- (a) Cite the hierarchy of lithostratigraphic units as per the Code of Stratigraphic Nomenclature of India. Which one of them is considered as the basic formal unit of the classification ?
- (b) Define cratons and Mobile Belts. Name a mobile belt of Peninsular India.
- (c) What rocks characterise the Haimanta Group in the Zaskar Section of India ?
- (d) Name *two* developments characterising the Precambrian-Cambrian boundary.

3. Answer **any three** questions : $5 \times 3 = 15$

- (a) What are the laws that form the basis of sequence stratigraphy? Cite the salient features of each of them.
- (b) Write a brief note on the concept of sedimentary facies. What is a cyclothen ?

(c) Mark the locations of Proterozoic basins of the Indian Peninsula in an outline map of India. Add a note on the nature of sediments deposited in the basins.

(d) What are the characteristics of Mesozoic sedimentation in India? Where do you find the occurrence of the Sonamarg Group ?

(e) Write about the significance of intertrappean beds of Deccan trap.

4. Answer **any three** questions : $10 \times 3 = 30$

(a) Give a short description on various tectonic elements comprising the Assam-Arakan Basin. Describe the salient features of the stratigraphy of Tertiary sediments found in the Naga-Schuppen belt.

(b) Describe the geological setup of the Cuddapah Basin. What rocks form the basement of the basin? Has the basin experienced any igneous activity?

(c) Write an account on the fundamental concept of magnetostratigraphy. How do records of magnetic reversals get imprinted on rocks?

(d) Describe the physiographic features of the Peninsular region of India. Name the view which have a westerly flow in the Indian Peninsula.

(e) What are the characteristic features of strata deposited in the Kutch Basin? Elaborate on the structural features and evolution of the Kutch basin. What is the significance of Psiloceras Planorbis Zone?

(f) (i) Cite the basis of placement of the Permo-Triassic boundary in India. Where is the proposed location of the Permo-Triassic Global Boundary Stratotype Point (GBSP) in India?

(ii) Describe the extent of the Shillong Basin. State the lithostratigraphy occurring within the basin.
