

Total number of printed pages-8

3 (Sem-4/CBCS) GLG SE 1/3

2022

GEOLOGY

(Skill Enhancement Course)

Answer the Questions from any one Option.

OPTION - A

(*Environmental Geology*)

Paper : GLG-SE-4014

OPTION - B

**(*Stratigraphy and Palaeontological
Field Work*)**

Paper : GLG-SE-4034

Full Marks : 50

Time : Two hours

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

Contd.

OPTION - A

Paper : GLG-SE-4014

(Environmental Geology)

1. Answer the following questions : **(any four)**
1×4=4

- (a) Name the vertical layers of the atmosphere.
- (b) What is the equatorial radius of the earth ?
- (c) What is the percentage of fresh water in the hydrosphere ?
- (d) Name three coastal landforms.
- (e) Which gas contributes the most to the 'greenhouse effect' of the earth ?
- (f) Write the name of the instrument used to measure the magnitude of earthquake.
- (g) What are the components of the biosphere ?
- (h) What is Conrad discontinuity ?

2. Answer the following questions : **(any three)**
2×3=6

- (a) Write briefly on harmful effects of black carbon on the earth's environment.

- (b) State two distinguishing characteristics of riverine environment.
- (c) Differentiate solar insolation from solar radiation.
- (d) What is the difference between the concepts of climate change and global warming ?
- (e) What are cold deserts and where are they located ?
- (f) How does the thickness of the earth's crust vary in different regions ?

3. Write short notes on the following : **(any two)**
5×2=10

- (a) Avalanches
- (b) Tropical environment
- (c) Droughts
- (d) Land use planning
- (e) The Paris Climate Agreement, 2015
- (f) Earthquakes in Assam

4. Answer the following questions : **(any three)**

- (a) What is landslide and how is it classified ? Discuss the causes of landslides.
4+6=10

OPTION - B

Paper : GLG-SE-4034

**(Stratigraphy and Palaeontological
Field Work)**

1. Choose the correct answer from the following questions : **(any four)** 1×4=4
- (a) Origin of vertebrate animal took place in
- (i) Ordovician
 - (ii) Devonian
 - (iii) Precambrian
 - (iv) Permian
- (b) The footprint, trail or burrow that were preserved in sedimentary rocks are known as
- (i) mold fossil
 - (ii) trace fossil
 - (iii) cast fossil
 - (iv) macro fossil
- (c) The branch of stratigraphy that deals with the successive ages of rock bodies are known as
- (i) lithostratigraphy
 - (ii) stratigraphy
 - (iii) sequence stratigraphy
 - (iv) chronostratigraphy

- (b) What is the concept of 'climate change'? Discuss the evidences and causes of climate change. 4+6=10
- (c) What is flood and what are its different types? Discuss the environmental effects of riverine flooding in the Brahmaputra valley, Assam. 4+6=10
- (d) How does a large earthquake impact the surrounding environment? Write on seismic zones in India with a suitable illustration. 4+6=10
- (e) What is land reclamation? Discuss various methods of land reclamation. 3+7=10
- (f) What is a glacier and what are its different types? Write an account on retreat of glaciers in the Himalayan region. 6+4=10
- (g) What are the chief non-conventional energy sources? Write about present status of non-conventional energy sources in India. 4+6=10
- (h) Write an account on management of water resources with special reference to mountainous terrains.

- (d) The term 'strate' was first coined by
- (i) James Hutton
 - (ii) William Smith
 - (iii) Johann Gottlob Lehmann
 - (iv) John S. Lewis
- (e) The indicators of 'younging upward' of strata are known as
- (i) geopotals
 - (ii) geode
 - (iii) geospatial
 - (iv) geoidal
- (f) 'The Law of Faunal Succession' was proposed by
- (i) William Smith
 - (ii) Charles Lyell
 - (iii) James Hutton
 - (iv) None of the above
- (g) The fundamental unit of biostratigraphic classification is
- (i) biozone
 - (ii) acme zone
 - (iii) range zone
 - (iv) assemblage zone
- (h) The smallest formal mappable unit of lithostratigraphic classification is known as
- (i) formation
 - (ii) bed
 - (iii) lamellae
 - (iv) zone

2. Answer the following questions very briefly :
(**any three**) 2×3=6

- (a) What is 'member' ? Give example.
- (b) What is uniformitarianism ?
- (c) Name *two* lower Gondwana flora.
- (d) What is fossil ?
- (e) Mention *two* index fossils from N-E India.
- (f) Name *two* different kinds of microfossils.

3. Write short notes on : (**any two**) 5×2=10

- (a) Records of stratigraphy
- (b) Assemblage zone and range zone
- (c) Litholog and its significance
- (d) Modes of preservation of fossil
- (e) Principles of stratigraphy
- (f) Sedimentary structures

4. Answer the following questions : (**any three**)
10×3=30

- (a) What is organic evolution ? Discuss about the organic evolution and its importance in stratigraphic analysis.

2+8=10

- (b) Discuss about different conditions that help for preservation of fossils. Discuss about the uses of fossil in geological studies. $5+5=10$
- (c) Define lithostratigraphy. Discuss about different kinds of lithostratigraphic units with suitable Indian examples. $2+8=10$
- (d) Write notes on : $5+5=10$
- (i) Faunal succession
 - (ii) Stratigraphic correlation
- (e) Define chronostratigraphy. Discuss in detail about the concept and aim of chronostratigraphic studies. $2+8=10$
- (f) What do you understand by 'standard geological symbols' ? How are these applicable in stratigraphic studies ? Discuss in detail. $3+7=10$
- (g) What is sedimentary facies ? Discuss the spatio-temporal relationships of facies in the context of Walther's law.
- (h) Discuss the following in brief : $5+5=10$
- (i) Fossils sampling
 - (ii) Description of fossils
-