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**1 (Sem-1) GLG**

**2023**

**GEOLOGY**

Paper : GLG0100104

**(Earth Systems Science)**

*Full Marks : 45*

Time : Two hours

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

***All questions in Q. No. 1 are compulsory.***

1. Choose the correct option : ***(any five)***  
1×5=5

(i) The age of the earth is about

(a) 4.7 million years

(b) 4.6 billion years

(c) 46 million years

(d) 46 billion years

*Contd.*

(ii) The components of the earth's climate system are

- (a) Atmosphere and hydrosphere
- (b) Atmosphere, hydrosphere and lithosphere
- (c) Atmosphere, hydrosphere, lithosphere and biosphere
- (d) Atmosphere, hydrosphere, cryosphere, lithosphere and biosphere

(iii) Which of the following is an eolian landform?

- (a) Barchan
- (b) Moraine
- (c) Sediment bar
- (d) Barrier island

(iv) Which of the following forms the topmost soil horizon in an ideal soil profile?

- (a) A-horizon
- (b) B-horizon
- (c) C-horizon
- (d) O-horizon

(v) 'Meghalayan Age' is a subdivision of

- (a) Pleistocene
- (b) Pliocene
- (c) Holocene
- (d) Cenozoic

(vi) The 'Gulf stream' is a hot water ocean current developed in

- (a) South Atlantic ocean
- (b) North Atlantic ocean
- (c) Pacific ocean
- (d) Indian ocean

(vii) The largest reservoir of carbon in the earth system is

- (a) The rocks
- (b) The deep sea
- (c) The biosphere
- (d) The atmosphere

(viii) The slowest form of mass movement is

- (a) Flow
- (b) Fall
- (c) Creep
- (d) Slide

2. Write short notes on **any five** of the following :

2×5=10

- (a) Law of uniformitarianism
- (b) Composition of the earth's atmosphere
- (c) Pacific ring of fire

(d) Polar wandering

(e) Hadley cell

(f) ITCZ

(g) Anthropocene

(h) Law of faunal succession

(i) Sand dunes

(j) Moraine

3. Write explanatory notes on : **(any four)**

5×4=20

(a) Earth's climate system

(b) Geological time scale

(c) Physical and chemical properties of sea water

(d) Coriolis effect

- (e) Soil profile
- (f) Internal structure of the earth
- (g) Thermohaline circulation
- (h) Fluvial landforms

4. Answer **any one** of the following :

- (a) Define weathering. Explain the various processes of weathering on earth.

10

- (b) Write an illustrated account on the theory of plate tectonics. Use suitable sketches for explanation.

10

- (c) What are the different theories on origin of the earth ? Briefly explain *any one* of them.

3+7=10

- (d) How the earth's belts are generated ? Explain with suitable sketches how the pressure belts regulate the atmospheric circulation.

5+5=10

- (e) What is the difference between relative and absolute chronology ? Explain *any one* method of determining absolute ages of rocks.

2+8=10