

GS Foundation Program 2026

Learning Outcome Test (LOT) #05 / Test Code: 9424051

Subject: Physical Geography

Name:	
ForumIAS Roll No:	
Cohort:	
Date:	

Instructions: Write your Name, Roll No., Cohort No., Date, on the front page of this answer booklet. The LOT shall be graded only when it is submitted within 24 hours. Printed copy of LOT and answer key shall only be given to students present in that class.

TOTAL MARKS: 32

Fill in the Blanks:

(1*5 = 5 Marks)

- Oceanic crust is primarily composed of _____ (Si+Mg/Si+Al) and is denser than continental crust.
- The outer core is considered to be existing in a _____ (solid/liquid) state.
- The age of the oceanic crust is comparatively _____ (younger/older) than the continental crust.
- The _____ Discontinuity separates the upper crust from the lower crust.
- The _____ (mantle/core) contains about 83% of the total volume and 68% of the total mass of the Earth.

True and False:

(1*5 = 5 Marks)

- The density of the core is more than twice the density of the mantle. (True/False)
- The heat from the inner core is primarily transferred to the mantle through convection. (True/False)
- The lithosphere is composed of the crust and the entire mantle. (True/False)
- The magnetic field of the Earth is generated solely by the solid inner core. (True/False)
- The Earth's crust is the densest layer of the planet. (True/False)

MCQs:**(2*4 = 8 Marks)**

Q.1) Which of the following statements is a correct inference from the study of seismic waves?

- ☐ a) P-waves travel faster than S-waves, and S-waves cannot pass through the liquid outer core.
- ☐ b) The velocity of seismic waves is constant throughout the Earth's interior, which allows for precise mapping of layers.
- ☐ c) The shadow zone for S-waves is smaller than the shadow zone for P-waves.
- ☐ d) The Moho discontinuity is where S-waves cease to exist.

Q.2) The asthenosphere exists in a semi-molten state primarily due to:

1. Abundance of radioactive minerals.
2. Extremely high pressure preventing complete melting.
3. Its location directly beneath the oceanic crust.

Chose the correct option:

- ☐ a) 1 and 2 only
- ☐ b) 3 only
- ☐ c) 2 and 3 only
- ☐ d) 1, 2 and 3

Q.3) The Earth's magnetic field is a result of a geodynamo mechanism. Which of the following best describes this process?

- ☐ a) The solid inner core's rotation generates a magnetic field.
- ☐ b) The interaction of cosmic radiation with the Earth's crust creates a magnetic field.
- ☐ c) Convection currents of liquid iron and nickel in the outer core, driven by the Earth's rotation, generate an electrical current.
- ☐ d) The magnetization of rocks in the Earth's mantle creates a permanent magnetic field.

Q.4) With reference to the layers of the Earth, arrange the following layers in the correct sequence from the surface to the center:

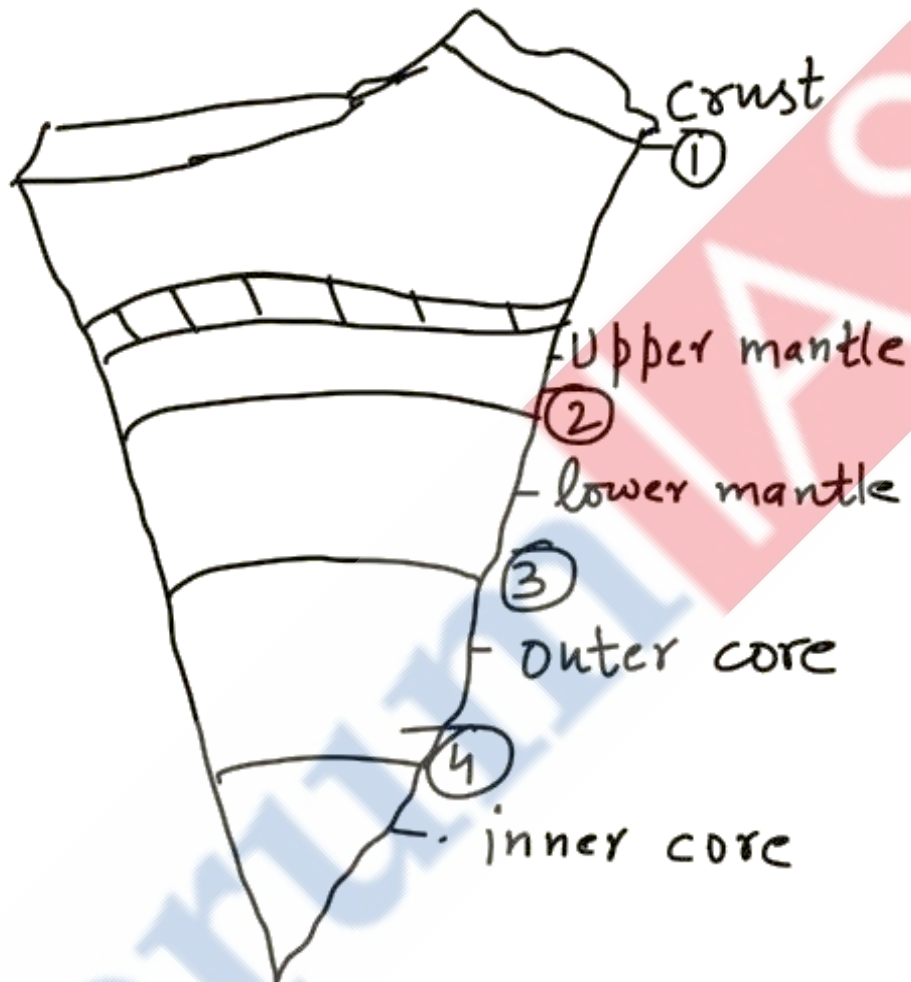
1. Asthenosphere
2. Mesosphere
3. Lithosphere
4. Barysphere

Select the correct order using the code given below:

- ☐ a) 3-1-2-4
- ☐ b) 3-1-4-2
- ☐ c) 1-3-2-4
- ☐ d) 4-2-1-3

Q.1) Write down the names of the discontinuities marked in the diagram as A, B, C and D (4 Marks)

Interior of Earth



Subjective: [please avoid writing introduction and conclusion for any of the following questions. In Each question we expect you to write 5 points]

Q.1) “With the help of a neat diagram, explain the various layers of the Earth’s interior.”

(10 Marks)

