

UPSC Mains 2025 Aug 31, 2025 Geology (Paper 1) Question Paper and Answer Key PDF

Q. No.	Question	Check Solution
Q1 (A)	Discuss the position of Astroid belt within the solar system and comment on the composition of meteorites.	Check Solution
Q1 (B)	What are sheath folds? Discuss the deformational conditions of their formation.	Check Solution
Q1 (C)	What is Global Positioning System (GPS)? Explain its geological applications.	Check Solution
Q1 (D)	Discuss the statement giving suitable examples. "Physical weathering adds to the effectiveness of Chemical weathering".	Check Solution
Q1 (E)	Discuss the types of Penetrative and Non-penetrative lineations with the help of suitable diagrams and throw light on their genesis.	Check Solution
Q2 (A)	What do you understand by continental drift? Discuss various geological evidences in favour of continental drift.	Check Solution
Q2 (B)	Geomorphic diversity is controlled by a number of endogenic and exogenic processes. Discuss this statement.	Check Solution
Q2 (C)	Describe morphotectonic features characteristic of rejuvenation in a mountaineous terrain.	Check Solution
Q3 (A)	Waves are responsible for modifying the coastal geomorphology. Justify the statement giving suitable examples and neat diagrams.	Check Solution
Q3 (B)	Explain how the Remote Sensing and Geographic Information System (GIS) may help in delineation of Groundwater potential zone?	Check Solution
Q3 (C)	Using neat sketches describe various types of Thrust geometries formed in a compressional regime.	Check Solution
Q4 (A)	On the basis of dip isogons describe the classification of folds with neat diagrams.	Check Solution
Q4 (B)	What are volcanoes? Describe various causes and products of volcanism.	Check Solution
Q4 (C)	How does strain analysis help in understanding the nature of rock deformation. Discuss centre to centre method of estimation of two dimensional strain.	Check Solution
Q5 (A)	Discuss favourable conditions for fossilization.	Check Solution
Q5 (B)	Discuss different concepts of biozonation with neat diagrams.	Check Solution
Q5 (C)	Describe the lithology, type locality, age and depositional environment of Blaini Boulder Bed.	Check Solution
Q5 (D)	What engineering properties make Marble, Sandstone and Granite useful as building stone?	Check Solution
Q5 (E)	Explain different generic type of water and their significance in water supply.	Check Solution
Q6 (A)	Discuss the evolutionary lineage of Equidae and comment on its migration	Check Solution
Q6 (B)	Give the lithostratigraphic classification and distribution of Delhi Supergroup. Also comment on the economic significance of this supergroup.	Check Solution
Q6 (C)	What are different type of wells used for the extraction of groundwater? How and why the well field should be protected?	Check Solution

Q7 (A)	What do you understand by boundary problems in stratigraphy? Discuss Cretaceous/Palaeogene (Cretaceous/Tertiary) boundary problem giving Indian examples.	Check Solution
Q7 (B)	What are the important groups of microfossils? Add notes on their composition and significance.	Check Solution
Q7 (C)	Why Earthquake resistant structures are needed? Discuss the geological considerations required for developing the Earthquake resistant structures.	Check Solution
Q8 (A)	Discuss the interrelationship amongst Porosity, Permeability and Hydraulic conductivity. How they are important in groundwater movement? A sediment sample with a cross section area of 0.02 m ² is tested in a permeameter with a length of 30 cm. Water flows through the sample at a rate of 0.08 m ³ /sec with a head difference (h ₁ - h ₂) 20 cm. Calculate the Hydraulic conductivity.	Check Solution
Q8 (B)	Describe important Lower Gondwana plant fossils with the help of neat diagrams and comment on their palaeobiogeographic significance.	Check Solution
Q8 (C)	Discuss the lithology, fossil content and age of palaeozoic sequence of Spiti Basin of Himachal Pradesh.	Check Solution