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IFOS MICRO-TOPICS PYQS GEOLOGY 2000-2024

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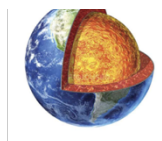
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FORESTRY



GEOLOGY



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Why WILDFILES

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Despite being one of the three prestigious All India Services, the Indian Forest Service (IFoS) exam remains one of the most under-resourced. Basic essentials like PYQs, strategy notes, and subject-wise guidance are either unavailable or unreasonably expensive and even after that of poor quality.

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The Syllabus and

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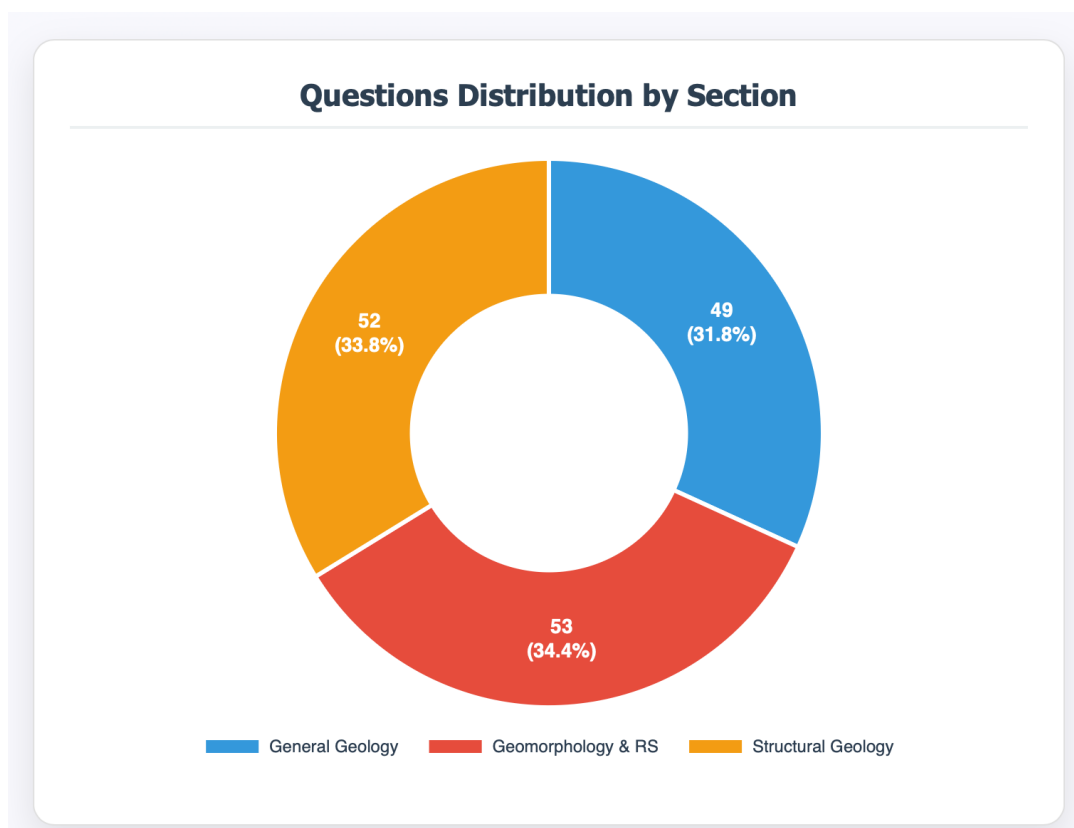
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Analysis and Strategy

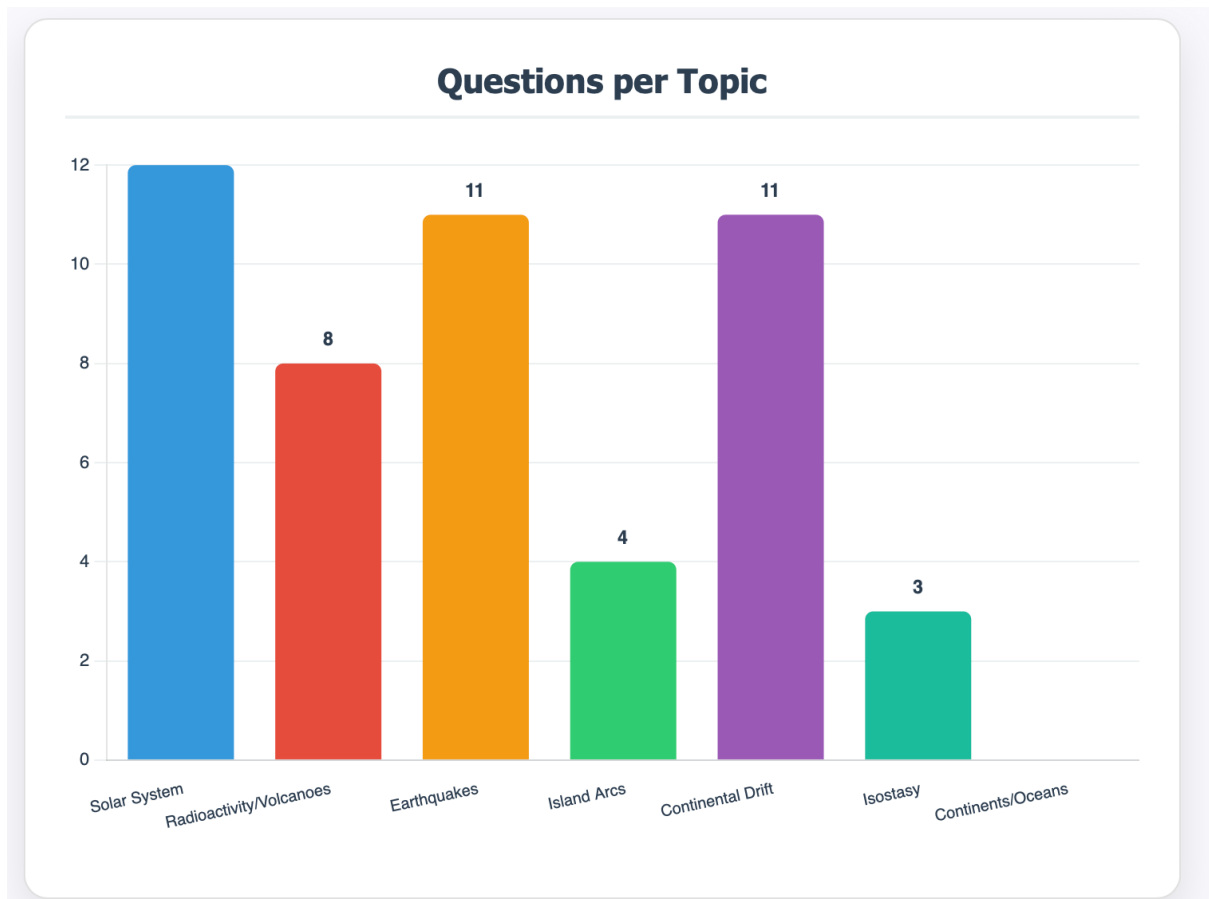
Topic-wise Distribution of Questions and Marks

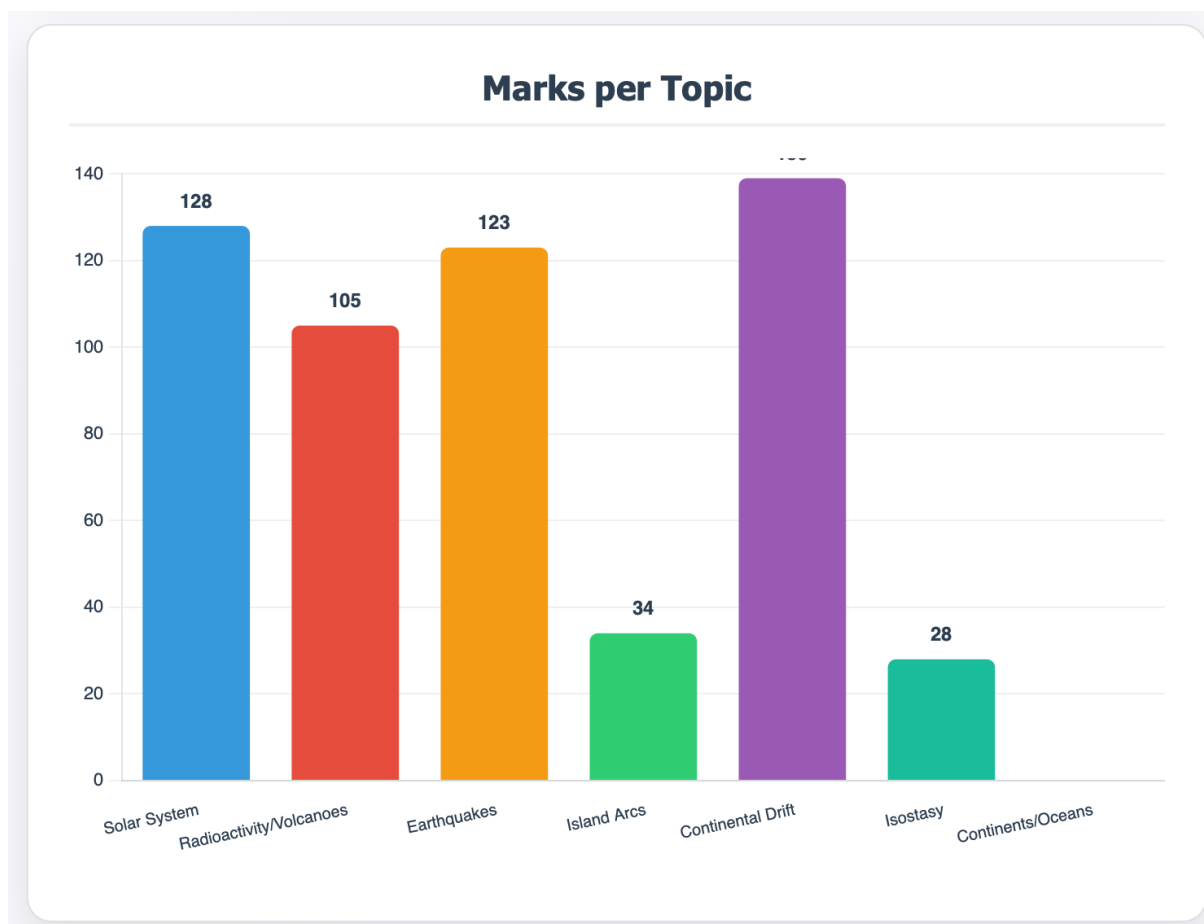


General Geology (Topics 1-7)

Topic No.	Topic	Questions	Total Marks
1	The Solar System, meteorites, origin and interior of the earth	12	128
2	Radioactivity and age of earth; Volcanoes- causes and products, volcanic belts	8	105
3	Earthquakes-causes, effects, earthquake belts, seismicity of India, intensity and magnitude, seismographs	11	123
4	Island arcs, deep sea trenches and mid-ocean ridges	4	34

Topic No.	Topic	Questions	Total Marks
5	Continental drift evidences and mechanics; seafloor spreading, plate tectonics	11	139
6	Isostasy, orogeny and epeirogeny	3	28
7	Continents and oceans	0	0
Subtotal		49	557



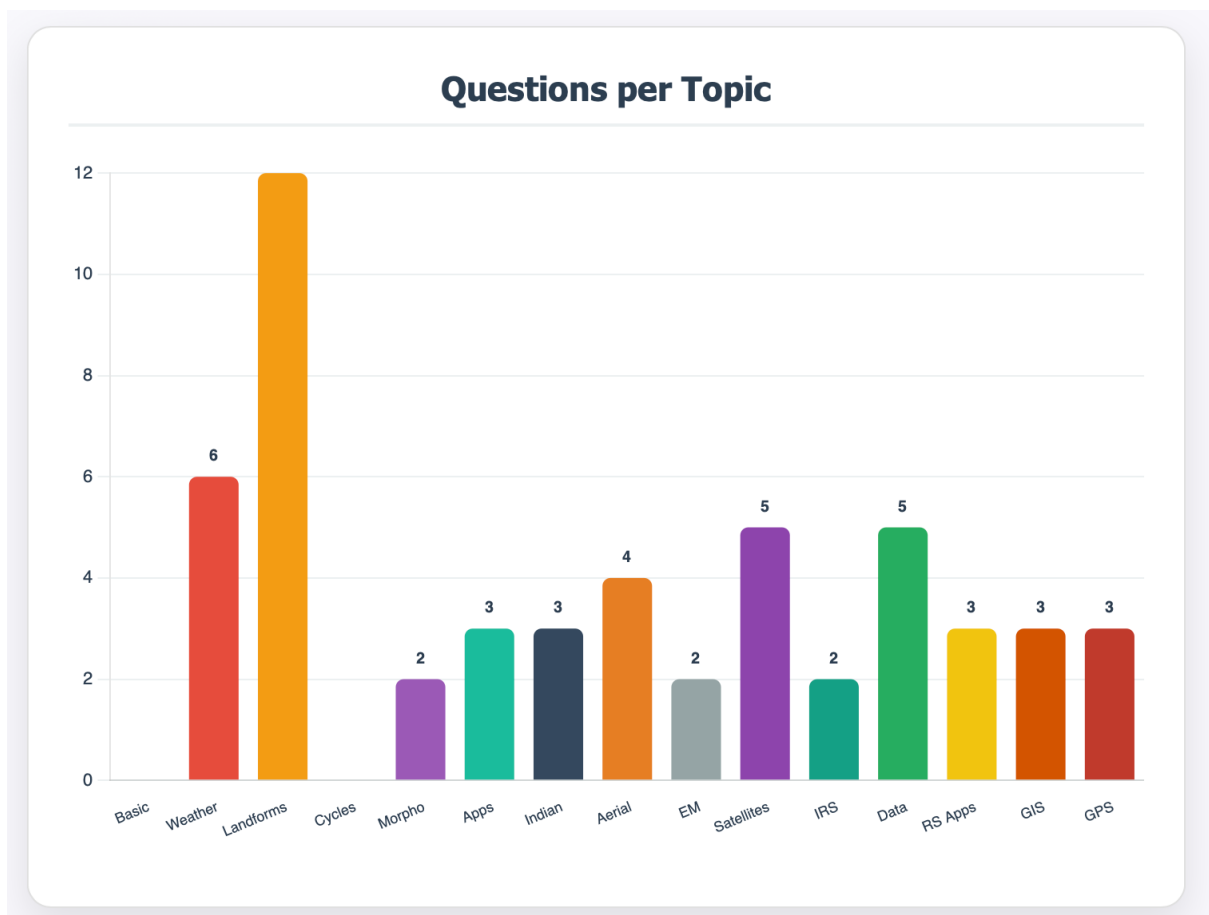


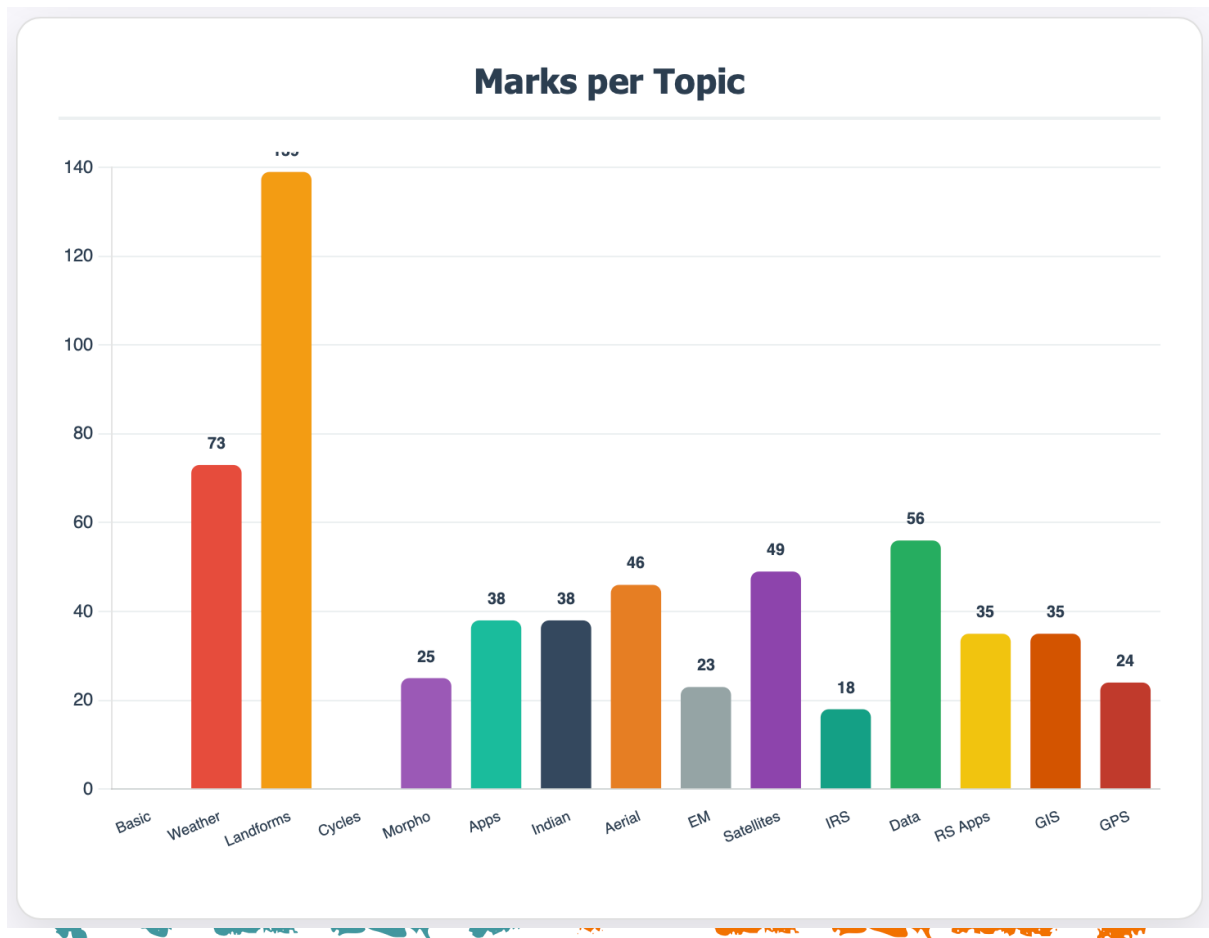
Geomorphology and Remote Sensing (Topics 8-22)

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Topic No.	Topic	Questions	Total Marks
8	Basic concepts of geomorphology	0	0
9	Weathering and mass wasting	6	73
10	Landforms, slopes and drainage	12	139
11	Geomorphic cycles and their interpretation	0	0
12	Morphology and its relation to structures and lithology	2	25
13	Applications of geomorphology in mineral prospecting, civil engineering, hydrology and environmental studies	3	38
14	Geomorphology of Indian subcontinent	3	38
15	Aerial photographs and their interpretation-merits and limitations	4	46
16	The Electron-magnetic Spectrum	2	23
17	Orbiting satellites and sensor systems	5	49

Topic No.	Topic	Questions	Total Marks
18	Indian Remote Sensing Satellites	2	18
19	Satellites data products	5	56
20	Applications of remote sensing in geology	3	35
21	The Geographic Information System and its applications	3	35
22	Global Positioning System	3	24
Subtotal		53	599



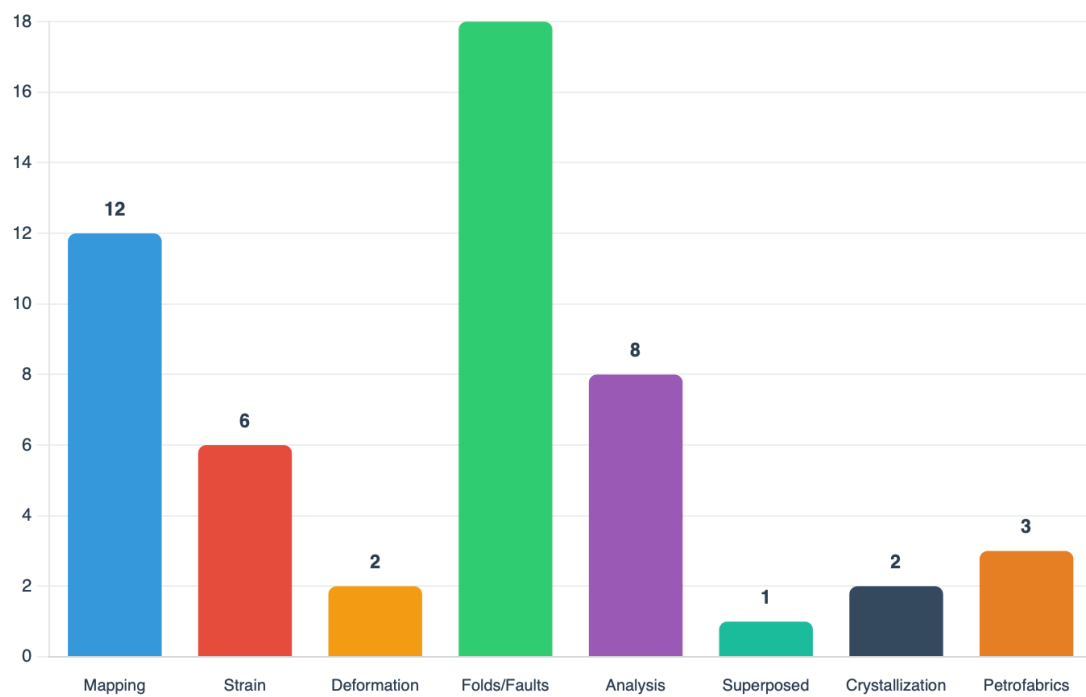


Structural Geology (Topics 23-30)

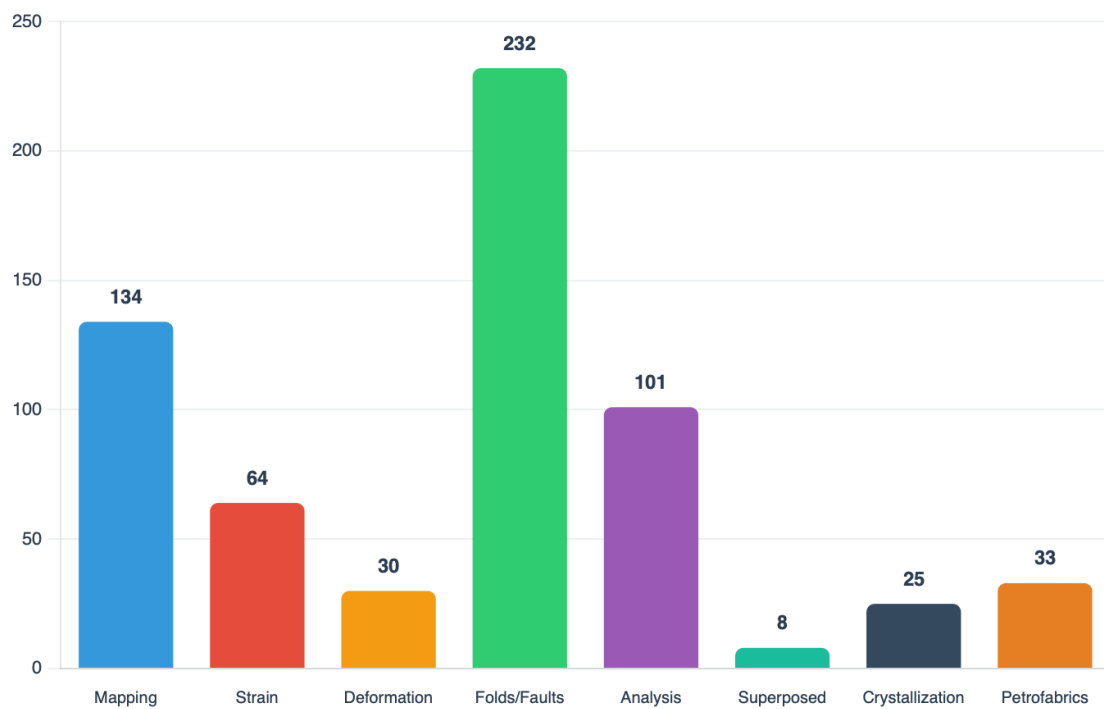
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Topic No.	Topic	Questions	Total Marks
23	Principles of geologic mapping and map reading, projection diagrams, stress and strain ellipsoid and stress-strain relationships	12	134
24	Strain markers in deformed rocks	6	64
25	Behaviour of minerals and rocks under deformation conditions	2	30
26	Folds and faults classification and mechanics	18	232
27	Structural analysis of folds, foliations, lineations, joints and faults, unconformities	8	101
28	Superposed deformation	1	8
29	Time-relationship between crystallization and deformation	2	25
30	Introduction to petro-fabrics	3	33
Subtotal		52	627

Questions per Topic



Marks per Topic

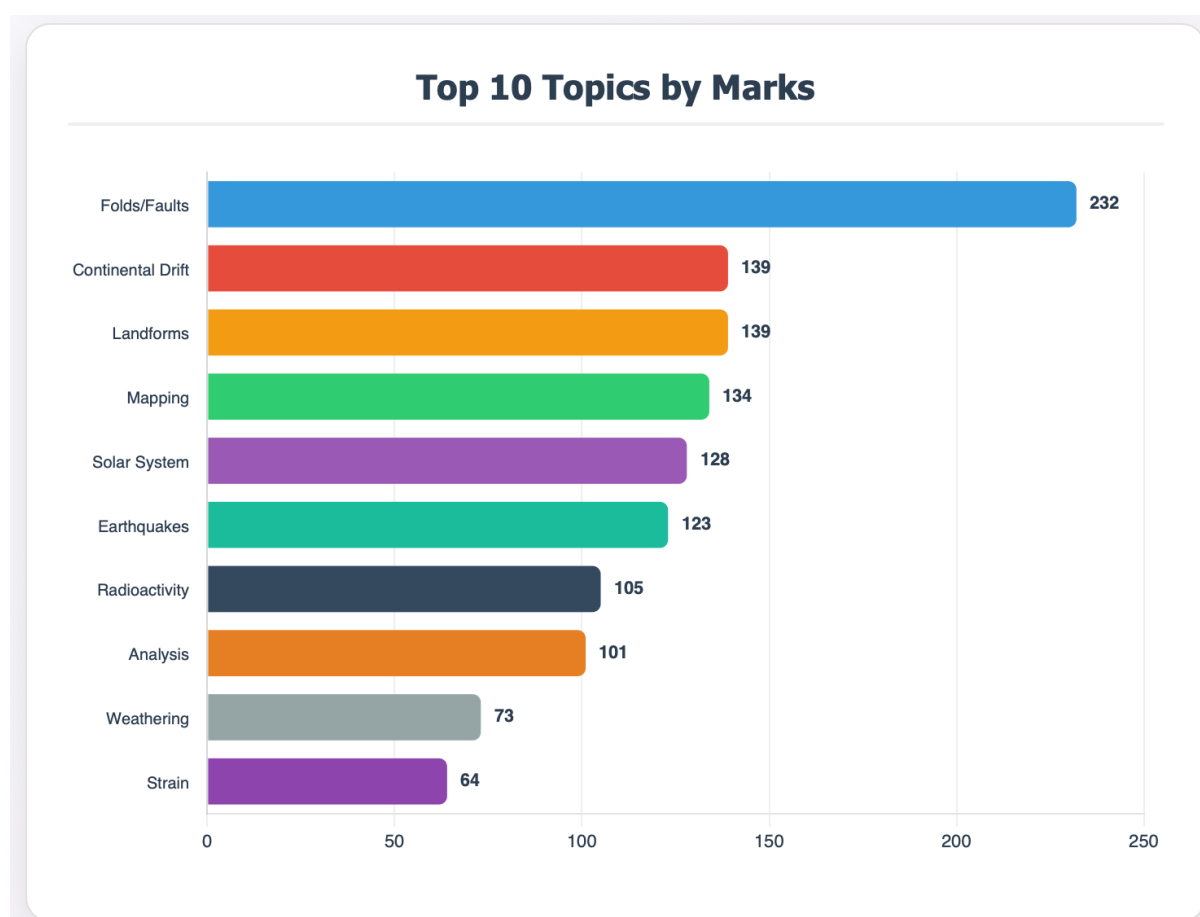


Overall Summary

Section	Topics	Questions	Total Marks	Average Marks per Question
General Geology	7	49	557	11.4
Geomorphology and Remote Sensing	15	53	599	11.3
Structural Geology	8	52	627	12.1
Total	30	154	1783	11.6

Key Insights

Most Asked Topics (by number of questions):



1. Folds and faults classification and mechanics (18 questions)
2. The Solar System, meteorities, origin and interior of the earth (12 questions)
3. Landforms, slopes and drainage (12 questions)
4. Principles of geologic mapping and map reading, projection diagrams, stress and strain ellipsoid (12 questions)

Highest Marks Distribution:

1. Folds and faults classification and mechanics (232 marks)
2. Continental drift evidences and mechanics; seafloor spreading, plate tectonics (139 marks)
3. Landforms, slopes and drainage (139 marks)
4. Principles of geologic mapping and map reading (134 marks)

Topics with No Questions:

- Basic concepts of geomorphology
- Geomorphic cycles and their interpretation
- Continents and oceans

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General Geology

1. The Solar System, meteorities, origin and interior of the earth

S.No	Question	Marks	Year
1	Earth's upper mantle	8	2024
2	How are 'carbonaceous chondrites' distinguished from other types of meteorites?	10	2024
3	Describe giving reason the difference between terrestrial and outer planets	8	2023
4	Critically evaluate the different theories of origin of Earth and explain in detail the most accepted theory. Illustrate your answer with suitable sketches	15	2022
5	How do we come to know that the core of the Earth is chiefly made up of iron? How do we estimate the age of core formation?	8	2021
6	How would you distinguish between different types of meteorites based on composition, mineralogy and texture? How do meteorite studies improve our understanding of the evolution of the Earth?	15	2021
7	Protoplanetary hypothesis and its relationship to the Solar Nebula	8	2017
8	Discuss the internal structure of the Earth and comment on S and P-waves shadow zones with suitable diagrams	10	2017
9	Briefly describe the interior of the earth based on compositional layering and seismic discontinuities. Illustrate your answer with neat labelled sketch	15	2020
10	What are seismic waves? Give a detailed account on different types of seismic waves	15	2020
11	Discuss the characteristics and properties of the lithosphere and the asthenosphere	8	2019
12	What is a meteorite? Describe different types of meteorites	8	2018

S.No	Question	Marks	Year
13	Discuss the characteristic morpho-structural features and radioactive mineral characters of the sites of large meteorite impact	15	2016
14	Describe the Solar System with special reference to the origin and evolution of planets	10	2007
15	Discuss the importance and classification of meteorites with suitable examples	10	2005
16	Explain the importance of the study of meteorites in understanding planetary evolution	10	2001
17	Describe the interior of earth with reference to different layers and their physical properties	15	2013
18	Discuss the origin of Earth with reference to various theories proposed	10	2009
19	What is Seismology? Discuss the role of seismological studies in understanding the interior of the earth	40	2005
20	Describe the Core of the Earth with reference to its composition and physical properties	10	2003
21	Discuss how seismic studies help in knowing interior of earth with suitable examples	40	2001
22	Discuss with examples the significance of Asthenosphere in plate tectonic theory	10	2000

2. Radioactivity and age of earth; Volcanoes- causes and products, volcanic belts

S.No	Question	Marks	Year
1	Describe different types of volcanoes. How does composition of lava regulate the shape of landform built by them and the eruptive style of volcano?	15	2023
2	Discuss the characteristics and location of global volcanic belts. On an outline map of the World, show the volcanic belts by hatch marks over the terrain	15	2022
3	Elucidate with example the principle of determination of absolute age of rocks	10	2021
4	What is a volcano? Briefly describe elevated and depressed volcanic landforms (three each)	10	2020

S.No	Question	Marks	Year
5	Briefly enumerate the principles of radiometric dating using U - Pb isotopes	15	2019
6	What is a volcano? What are the different types of volcano based on the types of eruption and places where the eruption occurred?	15	2018
7	What are volcanoes? Discuss critically causes and products of volcanoes	10	2015
8	Describe different radioactive methods applied for determination of the age of the earth	15	2014
9	Explain the different radioactive methods for determination of age of Earth with suitable examples	15	2014
10	Describe the concept of Half-life in radioactive decay with mathematical derivation	8	2013
11	Discuss the various methods for determining age of Earth with their merits and limitations	20	2012
12	Explain the concept of Hotspots and discuss the causes and products of volcanoes	20	2011
13	Discuss the causes of volcanoes with reference to plate tectonic theory	10	2010
14	Describe volcanoes and discuss volcanic eruptions with special reference to India	40	2007
15	Explain various methods of determining age of Earth and discuss age determination of Earth on the basis of radioactivity	40	2002

3. Earthquakes-causes, effects, earthquake belts, seismicity of India, intensity and magnitude, seismographs

S.No	Question	Marks	Year
1	Earthquake prediction	8	2024
2	What are the major causes of earthquake? How is the magnitude of an earthquake measured? Add a note on the seismic zones of India	15	2024
3	Enumerate the tectonic settings along which majority of earthquakes occur. Where are deep and shallow focus earthquakes located?	8	2023
4	Mark the different seismic zones on the outline map of India	8	2022

S.No	Question	Marks	Year
5	How do earthquakes cause damage? How do we reduce the risk of damage by earthquakes?	15	2021
6	What is an earthquake? Discuss the causes and effects of an earthquake. List the major geographic distribution of earthquakes worldwide	15	2018
7	Recent large magnitude earthquakes in India	8	2016
8	Causes of earthquakes and Global seismic belts	8	2015
9	Richter scale and modified Mercalli scale	8	2014
10	Write on the causes of earthquake. Describe briefly the earthquake belts of the world and seismic zones of India	15	2014
11	Discuss the types of seismic waves and their significance in earthquake studies	15	2013
12	Explain the causes of Tsunami with reference to recent events	10	2013
13	Describe the intensity and magnitude of seismicity in India with suitable examples	10	2012
14	What are the causes of Earthquakes? Explain with reference to plate tectonics	10	2012
15	Describe the global earthquake belts with their characteristic features	10	2004
16	Explain the Seismic Zones of India with their vulnerability assessment	10	2002
17	What is the magnitude of an earthquake and how is it measured?	10	2001
18	What should be done in earthquake-prone areas for safety of people and property?	10	2000
19	Discuss with examples the seismicity in relation to Plate Tectonics	10	2000

4. Island arcs, deep sea trenches and mid-ocean ridges

S.No	Question	Marks	Year
1	Describe mid-oceanic ridge. Illustrate your answer with suitable diagram	10	2023
2	Island arc and Volcanic arc	8	2020
3	Relation between heat flow and topographic relief of the sea-floor	8	2016
4	Mid Oceanic Ridges	8	2015

S.No	Question	Marks	Year
5	Describe the mid oceanic ridge with its characteristic features	10	2011
6	Explain the formation and characteristics of Island arcs	20	2011
7	How do primary island arcs differ from secondary island arcs? Also discuss their global distribution	40	2006
8	Describe the Deep sea trenches with their formation mechanism	10	2003
9	Explain the Island arcs with suitable examples	10	2002

5. Continental drift evidences and mechanics; seafloor spreading, plate tectonics

S.No	Question	Marks	Year
1	Discuss the evidences of continental drift	8	2023
2	What are the evidences in favour of the theory of plate tectonics?	8	2021
3	Explain the geological and palaeontological evidences of continental drift and comment on the mechanism of plate separation and collision	15	2017
4	Discuss the evidences of seafloor spreading and explain with illustrative diagrams, how earthquakes and subduction processes are related to each other	15	2017
5	With the help of neat diagrams, discuss different types of plate boundaries and enumerate their characteristic features	15	2019
6	Elucidate the present status of Continental Drift in light of the geological and geophysical evidences	15	2019
7	Describe the morpho-structural and physical characters of continental rift system	15	2016
8	Critically analyse the role of different forces associated with the lithospheric plates	10	2016
9	Draw the labelled diagrams to explain the mechanism of different plate boundaries	15	2015
10	Seafloor spreading	8	2014
11	Explain the theory of plate tectonics. Describe different kinds of plate boundaries	15	2014
12	Describe the seafloor spreading with evidences supporting the theory	10	2014

S.No	Question	Marks	Year
13	Explain the Convergent plate boundaries with suitable examples	8	2013
14	How does Plate tectonics theory support Continental Drift theory?	10	2012
15	Describe the different types of plate margins with their characteristics	10	2012
16	Discuss Continental drift with evidences and explain how does Plate Tectonics support it	30	2010
17	Explain the Mechanics of Continental drifting	10	2009
18	Describe the types of plate boundaries with suitable examples	10	2006
19	Volcanism is a manifestation of plate tectonic processes. Justify with examples	20	2003
20	Distinguish between Plate Tectonics and Continental Drift theories	10	2000

6. Isostasy, orogeny and epeirogeny

S.No	Question	Marks	Year
1	Discuss any four theories that explain the origin of orogenic movements. What are their merits and limitations?	10	2024
2	Distinguish between the Pratt, Airy, and Vening Meinesz isostasy models. How can perfect isostatic equilibrium be attained?	8	2022
3	What is isostasy? Discuss three different theories of isostasy. What are the merits and limitations of these theories?	10	2018
4	Explain the concept of Isostatic Compensation with suitable examples	8	2013
5	Describe the Mountain Building Processes with reference to orogenic movements	10	2011
6	What is Isostasy? Discuss the geological processes that lead to isostatic imbalances	40	2004
7	State the mountain-types in India. Discuss, with examples, their modes of origin	40	2000

7. Continents and oceans

No specific questions found in the database

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Geomorphology and Remote Sensing

8. Basic concepts of geomorphology

S.No	Question	Marks	Year
1	Describe Geomorphology and its relation to structures	10	2009
2	Explain the basic concepts in geomorphology and illustrate with suitable Indian examples	20	2007

9. Weathering and mass wasting

S.No	Question	Marks	Year
1	Describe weathering and its types. How does it influence climate and relief?	15	2023
2	Which factors control floods in rivers?	8	2021
3	What do you understand by Mass Wasting? Describe different processes of mass wasting. What are the preventive measures to mitigate the risk of hazards due to mass wasting?	15	2021
4	What is Weathering? Describe different processes of weathering with suitable examples	10	2021
5	What are the geomorphic criteria used in mineral prospecting?	8	2020
6	What are the differences between weathering and erosion? Discuss four different types of mechanical weathering	10	2018
7	Soil types and soil conservation in India	8	2016
8	What is mass wasting? Describe the different types of mass wasting	15	2015
9	Explain the process of Biotic Weathering with suitable examples	10	2012
10	Describe weathering and mass wasting processes	10	2011
11	Discuss mass wasting and explain the process of weathering and its types	30	2010
12	Describe Weathering and Mass-Wasting processes with their controlling factors	10	2007

10. Landforms, slopes and drainage

S.No	Question	Marks	Year
1	Antecedent and Superimposed drainage	8	2024
2	Write a brief note on different types of sand dunes and the conditions under which they form and grow with the help of neat sketches	15	2024
3	Describe the different types of erosional and depositional landforms associated with fluvial processes using neat diagrams	15	2024
4	Describe the remnant landforms that indicate occurrence of past glacial activity over a region. How are the records of moraines useful in interpreting past changes in climate?	15	2023
5	Elucidate the erosional features of aeolian landforms	8	2022
6	Explain the major drainage patterns and their controlling factors	10	2020
7	Describe the origin of Karst topography	8	2019
8	What is a moraine? Discuss different types of moraines	8	2018
9	Discuss four erosional and four depositional landforms associated with a river	15	2018
10	Mention different drainage anomalies and comment on their significance	10	2016
11	Discuss various types of drainage patterns, illustrate your answer with suitable sketches	15	2015
12	Explain the significance of Stream Order and mean bifurcation ratio in metamorphic analysis of a drainage basin	15	2013
13	Describe Trellis and Dendritic types of drainage patterns	10	2012
14	Explain the formation and characteristics of Loess	10	2011
15	Describe Moraine and its different types	10	2011
16	What is an Ox-Box lake? Explain its formation process	10	2011
17	Describe various types of Landforms with their origin	10	2007
18	Distinguish between Inlier and outlier with suitable examples	10	2003
19	Explain the causes of instability of hill slopes	10	2002
20	Describe the drainage patterns with their controlling factors	10	2001
21	Discuss with examples the Glacial landforms	10	2000

11. Geomorphic cycles and their interpretation

S.No	Question	Marks	Year
1	Explain the interpretation of geomorphic cycles	10	2004
2	Describe the Geographic cycle with its stages	10	2003

12. Morphology and its relation to structures and lithology

S.No	Question	Marks	Year
1	Discuss how lithology controls topography	10	2019
2	Compare the geomorphic features along the Eastern and Western Coasts of India	15	2019
3	Critically evaluate the role of lithology and structure in the development of landforms	15	2014
4	Explain the impact of lithology on geomorphology	10	2006
5	Topography is known to be the function of structure and lithology. Explain with examples	10	2000

13. Applications of geomorphology in mineral prospecting, civil engineering, hydrology and environmental studies

S.No	Question	Marks	Year
1	Critically assess the role of geomorphology in evaluating the ancient and modern hydrological regime of a terrain. Elucidate your answer by taking examples from Indian fluvial systems	15	2022
2	Using case studies, explain the application of geomorphology in mineral prospecting	15	2017
3	Describe the applications of geomorphology in mineral prospecting	20	2009
4	Explain the applications of geomorphology in environmental studies	20	2006
5	Discuss the role of geomorphology in civil engineering construction activities	20	2005
6	Explain the role of geomorphology in mineral prospecting	20	2004
7	Describe the application of geomorphology in mineral prospecting and for search of building and construction materials	20	2002

14. Geomorphology of Indian subcontinent

S.No	Question	Marks	Year
1	Geomorphic features along the eastern coast of India	8	2017
2	Critically analyse the patterns of deltas associated with major river systems in the east coast of India	15	2016
3	Describe the broad geo-morphological features of Indian subcontinent	10	2005
4	Explain the geomorphic classification of Indian subcontinent	20	2001

15. Aerial photographs and their interpretation-merits and limitations

S.No	Question	Marks	Year
1	What are the principles of recognizing lithology from aerial photographs?	8	2021
2	Sensors used in IRS series satellites and their characteristics	8	2020
3	Describe the different types of aerial photographs. Comment on the utility of these in geological studies. Illustrate your answer with neat labelled sketches	15	2020
4	Types of Aerial photographs	8	2015
5	Describe the different types of key-elements for interpretation of satellite images	15	2015
6	What are aerial photographs? Discuss their utility in interpretation of geological structures and important rock types	15	2014
7	Explain Digital Image Processing techniques in remote sensing	10	2011
8	Discuss the merits and applications of Aerial Photography	20	2009
9	Describe aerial photographs and their interpretation	10	2007
10	Explain the advantages and limitations of aerial photographs	20	2006
11	Discuss the limitations of aerial photographs	10	2005
12	Describe the salient features of Aerial photo interpretation	20	2003
13	Explain the geological uses of aerial photographs	10	2002

16. The Electron-magnetic Spectrum

S.No	Question	Marks	Year
1	Sun energy interaction with atmosphere	8	2016
2	Explain the concept of "spectral reflectance" and add a note on the spectral reflectance pattern of vegetation and water bodies	15	2016
3	Describe the visible radiation of Electromagnetic Spectrum	8	2013
4	Explain the concept of Atmospheric Window	10	2012
5	Describe the Electromagnetic Spectrum and its applications	10	2011
6	Explain the electromagnetic spectrum with reference to remote sensing	10	2004

17. Orbiting satellites and sensor systems

S.No	Question	Marks	Year
1	Geosynchronous and Sun-synchronous orbits	8	2024
2	Describe the Low Earth Orbit (LEO) satellites and their typical applications	10	2022
3	Salient characters of Geostationary and Polar orbiting satellites	8	2017
4	Describe the components and working principles of (i) Cross-track scanners, and (ii) RISAT	15	2017
5	Multispectral scanner (MSS)	8	2014

18. Indian Remote Sensing Satellites

S.No	Question	Marks	Year
1	Discuss the spectral range, ground resolution and image swath of IRS series sensors	10	2022
2	Describe the progressive developments in IRS Satellites from geological point of view	15	2013
3	Explain the Indian Remote Sensing Satellites and their applications	20	2005

19. Satellites data products

S.No	Question	Marks	Year
1	Describe the various types of satellite image resolutions, along with examples	15	2024
2	Describe False Colour Composite (FCC) data products and their interpretation basics	8	2022

S.No	Question	Marks	Year
3	Discuss the spectral and spatial resolution of a satellite image	8	2018
4	Explain in detail about panchromatic, multispectral and hyperspectral remote sensing images with example	10	2018
5	Describe the data products of IRS Satellites	10	2012
6	Explain the satellite data products and their applications	10	2003

20. Applications of remote sensing in geology

S.No	Question	Marks	Year
1	Describe the application of remote sensing in Geology	10	2023
2	With the help of a case study, describe the methodology for using satellite imagery and GIS to identify potential zones of groundwater	15	2017
3	Discuss the applications of remote sensing in Geology	15	2020
4	Highlight the advantages and limitations of remote sensing studies with respect to conventional geological field work	10	2019
5	Explain the application of remote sensing in geology	20	2012
6	Describe the application of remote sensing in geology	20	2004
7	Discuss the Application of Remote Sensing to geological investigations	20	2001

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21. The Geographic Information System and its applications

S.No	Question	Marks	Year
1	Discuss the utility of thematic maps in GIS	10	2023
2	Write briefly on Geographic Information System (GIS). How is GIS applied in environmental monitoring?	10	2014
3	Explain the application of GIS to geological studies	10	2012
4	Describe GIS and its applications	20	2007
5	Explain the significance of GIS	10	2006
6	Discuss GIS and its applications	20	2002

22. Global Positioning System

S.No	Question	Marks	Year
1	Describe the working of Global Positioning System	8	2023
2	Write briefly on the Global Positioning System (GPS)	8	2019
3	Global positioning system (GPS)	8	2015
4	Explain the importance of GPS in geological mapping	10	2013
5	Describe the working of GPS	10	2010

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(iii) Structural Geology

23. Principles of geologic mapping and map reading, projection diagrams, stress and strain ellipsoid and stress-strain relationships of elastic, plastic and viscous materials

S.No	Question	Marks	Year
1	Strain ellipsoid	8	2024
2	Distinguish between the Wulff and Schmidt net used in creating projection diagrams. Add a note on their relative advantages and disadvantages	8	2022
3	Enumerate the tools and equipment required to undertake geological mapping. Explain the importance of geological mapping	10	2017
4	How are stress and strain related to each other? Explain the stress-strain curves in terms of brittle, ductile and viscous materials	15	2017
5	What is the significance of equal area projection in solving structural geology problems?	8	2019
6	Discuss five criteria to recognise the top of a bed by primary features	8	2018
7	Describe strike, dip direction and dip amount of a bed. Can the strike and dip be measured in all types of orientation of beds? How are strike, dip direction and dip amount of horizontal, tilted and vertical strata represented on a map?	8	2018
8	Discuss about stereographic projections for structural analysis with neat diagrams	15	2018
9	Discuss critically on stress and strain relationships in plastic and elastic rock materials	10	2015
10	Discuss the importance of Stereographic Projections in structural analysis	10	2015
11	Stereographic projection	8	2014
12	Define stress and strain, and write on the behaviour of rocks under deformation condition	10	2014
13	Explain Pi-S Diagram and its applications in structural geology	15	2013

S.No	Question	Marks	Year
14	Describe strain ellipsoid and explain different types of Strain ellipsoids in deformed rocks	15	2013
15	Discuss the types of Planar fabrics in deformed rocks	10	2013
16	Explain the principles of geologic mapping and map reading	40	2009
17	Describe the principles of geologic mapping and map reading	40	2007
18	Explain the different types of strain markers used for determination of 3d strain in deformed rocks	40	2006
19	Describe the strain ellipsoid and its significance	10	2005
20	Explain projection diagrams and their applications	10	2005
21	Describe the stress ellipsoid and its characteristics	10	2004
22	Explain stress ellipsoid and strain ellipsoid	10	2003

24. Strain markers in deformed rocks

S.No	Question	Marks	Year
1	Explain how the sense of shear in deformation zones can be determined from pressure shadows	8	2023
2	During fieldwork in the Southern Granulite Terrain, rectangular, lenticular and barrel-shaped boudins were encountered. Sketch these boudins and describe the conditions that lead to their formation	15	2023
3	What are the various evidences of strain recorded in deformed rocks? How is the amount of deformation calculated?	10	2020
4	Enumerate the strain markers in deformed rocks, with the help of neat sketches	8	2019
5	Discuss the criteria to determine the sense of shearing in ductile and brittle shear zones with neat sketches	15	2016
6	Flinn diagram	8	2014

25. Behaviour of minerals and rocks under deformation conditions

S.No	Question	Marks	Year
1	Discuss the three major plastic deformation mechanisms affecting rocks and minerals	15	2023
2	Describe the deformation mechanisms of minerals and rocks, and add a note on their characteristic features	15	2022

S.No	Question	Marks	Year
3	Explain the behaviour of minerals and rocks under deformation conditions with sketches	40	2009

26. Folds and faults classification and mechanics

S.No	Question	Marks	Year
1	Describe with suitable diagrams different mechanisms of folding of rock strata	15	2024
2	Describe with neat sketch the concept of 'net slip' in faults. Illustrate with diagrams the orientation of 'net slip' with the strike and dip of fault planes in different types of faults. Explain with suitable diagrams the relation between 'slip' and 'separation' on a fault plane	10	2024
3	Illustrate with neat sketches, the classification of folds based on (i) interlimb angle, (ii) orientation of axial plane, and (iii) curvature of axial surface	15	2024
4	Describe dip isogon method of fold classification with suitable illustrations	15	2023
5	Explain how parasitic folds are used in interpreting large scale folding	10	2022
6	Distinguish between Strike-slip fault and Dip-slip fault. Illustrate with diagram the effect of erosion on rock blocks having apparent movement	15	2021
7	What is a nappe? Describe the structure of window and klippe. How do they differ from outlier and inlier structures? Explain with suitable diagrams	15	2021
8	Classification of folds on the basis of orientation of axial plane	8	2017
9	Genetic classification of faults based on relative movement	8	2020
10	Discuss how the depth of a fold can be calculated. Enlist the assumptions in the calculation	15	2020
11	What is thrust fault? Explain the mechanism of development of thrust fault with neat sketches	15	2019
12	What is a fold? Draw neat sketches and discuss Ramsay's classification of fold based on dip isogon	15	2018
13	What is a fault? Draw a neat diagram and discuss different terminologies associated with a fault plane. Discuss four criteria for recognising fault in a field	15	2018
14	Explain the mechanism and development of disharmonic folds	15	2016

S.No	Question	Marks	Year
15	Classification of Folds with respect to axial plane orientation	8	2015
16	Describe transform and transcurrent faults, and their differences with diagram	15	2015
17	Give an account on classification of faults and critically comment on the mechanism of faulting	15	2015
18	Describe the genetic classification of faults based on the nature of relative movement	15	2014
19	Explain the classification of folds with suitable examples	20	2012
20	Describe the Transform fault and its characteristics	10	2011
21	Explain Transcurrent faults with suitable examples	10	2010
22	Describe Gravity faults and their types	10	2010
23	Discuss the criteria for recognition of geological faults and explain the effects of these geological faults	40	2010
24	Explain the mechanism of development of concentric folds	10	2006
25	Describe the mechanical conditions for the origin of 3 fundamental types of faults	40	2005
26	Explain the nomenclature of folds based on attitudes of fold axes and axial planes	40	2004
27	Describe Nappe structure with suitable examples	10	2003
28	Explain Horst and graben structures	10	2003
29	What are faults? Discuss the classification of faults based on slip separation	40	2002
30	Discuss with examples the Thrust faults	10	2000

27. Structural analysis of folds, foliations, lineations, joints and faults, unconformities

S.No	Question	Marks	Year
1	How would you distinguish between an unconformity and a fault?	8	2021
2	Illustrate the genetic classification of joints with suitable sketches	10	2021
3	Describe different types of planar structures in folded strata. How do you use cleavage to determine structures in three dimensions?	15	2021
4	Describe unconformities and their types, and give the various criteria to distinguish them from faults	10	2017

S.No	Question	Marks	Year
5	Different kinds of unconformities	8	2020
6	Elucidate the relation between cleavage and schistosity to major structures	15	2020
7	Describe the different types of breaks in stratigraphic records and their identification in the field	15	2019
8	Define foliation. How does foliation help to decipher associated major structures? Explain	10	2014
9	Describe Angular unconformities with suitable examples	10	2012
10	Explain the different types of unconformities and discuss their significance in study of geological history of an area	40	2011
11	Describe Unconformities and their significance	10	2009
12	Explain dip, throw and heave of a fault	10	2009
13	Describe Unconformities and their types	10	2007
14	Explain the significance of unconformities	10	2006
15	Describe Paraconformity and disconformity	10	2003
16	Explain the criteria for determining the top and bottom of the beds	10	2001
17	Describe with examples Strike-slip fault, Mineral Lineation, Graben, and Joints	40	2001
18	Explain Geochronology in Geological Studies	10	2000
19	Describe lineament and its significance	10	2000
20	How do the different types of folds assist in revealing structural history of the region? Discuss with examples	40	2000

28. Superposed deformation

S.No	Question	Marks	Year
1	"Mirror-image" type fold interference pattern	8	2016
2	Explain Progressive Deformation	8	2013
3	Describe Superposed deformation with suitable examples	10	2004
4	Explain Superposed deformation	10	2002

29. Time-relationship between crystallization and deformation

S.No	Question	Marks	Year
1	Explain with the help of sketches how microstructures in porphyroblasts can be used to determine post-crystallization deformation. List five other features which are also indicative of such deformation	15	2022
2	What is recrystallisation of minerals? How is it related to deformation? Explain with neat sketches	10	2019
3	Explain Syntectonic crystallization with suitable examples	10	2001

30. Introduction to petro-fabrics

S.No	Question	Marks	Year
1	Define tectonites and describe the three types of tectonites with examples. Explain how each type of tectonite can be used to decipher strain	15	2022
2	Petrofabric analysis	8	2017
3	Discuss the strain significance of different tectonites	10	2016

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