

M.Sc. (Sem.-II) Examination

407

Geology

May-2017

[Max. Marks : 70]

Time : 3 Hours]

1. (A) Write a critical note on general principles of crystallography. (07)
OR
 (A) Explain the classes represented by magnetite and sphalerite. (07)
 (B) Describe zircon and scheelite types. (07)
OR
 (B) Discuss the classes 4 and $\bar{4} 2 m$. (07)
2. (A) Write explanatory note on nephalite and benitoite types. (07)
OR
 (A) Discuss the classes represented by ilmenite and α -Quartz. (07)
 (B) Describe the classes of oblique system. (07)
OR
 (B) Explain the classes $m m 2$ and $2 2 2$. (07)
3. (A) Write a note on formation of crystalline matter. (07)
OR
 (A) Describe point groups in detail. (07)
 (B) Explain twinning in cubic, tetragonal and orthorhombic systems. (07)
OR
 (B) Discuss zoning in detail. (07)
4. (A) Explain the projection of a crystal from which others is derived. (07)
OR
 (A) Discuss the use of high performance instruments in crystallography. (07)
 (B) Write a detailed note on Laue diffraction patterns. (07)
OR
 (B) Describe X-ray crystal structure of common salt. (07)
5. **Answer the following questions in short:**
 - (1) What are international notations? (01)
 - (2) State the symmetry of mineral covellite. (01)
 - (3) Give H. M. symbol for tetartohedral classes. (01)
 - (4) Draw a stereographic projection of siderite crystal. (01)
 - (5) Name the minerals represented by $6 m m$. (01)
 - (6) Why trigonal and trigonal tetartohedral classes belong to hexagonal division? (01)
 - (7) Name all the crystallographic axes of asymmetric class. (01)
 - (8) Define space lattice. (01)
 - (9) Define glide reflection plane. (01)
 - (10) What are etch marks? Give its significance. (01)
 - (11) Give crystal habit of epidote. (01)
 - (12) Where the poles of horizontal and vertical faces are plotted in gnomonic projections? (01)
 - (13) Give full form of XRF. (01)
 - (14) State the plane of projection in stereographic projection. (01)

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1. Describe: (A) Chronostratigraphy. (07)
OR
 (A) Seismic stratigraphy. (07)
 (B) Stratigraphic divisions. (07)
OR
 (B) Preservation and net rates of accumulation in various basinal settings. (07)
2. Write notes: (A) Detailed classification, climate, lithology, orogeny, and life forms of Mesozoic stratigraphy. (07)
OR (07)
 (A) Classification, climate, lithology, orogeny and life of Cainozoic stratigraphy.
 (B) Classification, climate, lithology, orogeny and life forms of lower Palaeozoic stratigraphy. (07)
OR (07)
 (B) Detailed classification of Mesozoic formations of India and its comparison with world stratigraphy.
3. Explain: (A) Stain acetate peel method for microfossils. (07)
OR
 (A) Carbon-tetrachloride methods for microfossil separation. (07)
 (B) Foraminifer ecology. (07)
OR
 (B) Stratigraphical and environmental significance of Ostracoda. (07)
4. Discuss: (A) Wall composition, structure and sculpture of spores and pollens. (07)
OR
 (A) Preservational aspect based classification of trace fossils. (07)
 (B) Morphological-descriptive classification of trace fossils. (07)
OR
 (B) Importance of trace fossils in sedimentology and stratigraphy. (07)
5. Answer the questions in brief:
1. Define sequence stratigraphy. (01)
 2. Define lithostratigraphy. (01)
 3. Define cyclostratigraphy. (01)
 4. Define member. (01)
 5. What is a suite? (01)
 6. Define bed. (01)
 7. Define lithodemic unit. (01)
 8. What is procaryote? (01)
 9. Sarcodina is included in which kingdom? (01)
 10. Write name of division of blue-green algae. (01)
 11. Write chemical composition of washing soda. (01)
 12. What is the phylum of radiolarian? (01)
 13. Define ichnia catenaria. (01)
 14. Define cubichnia. (01)

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- Q. 1. (A) Describe Cambrian system of Spiti region. 07
 OR
 (A) Write a note on Siluro-Devonian period of Extra peninsula. 07
 (B) Discuss life and palaeoclimate during upper palaeozoic. 07
 OR
 (B) Write critical note on Middle Carboniferous. 07
- Q. 2. (A) Write a note on life during Triassic and Jurassic periods. 07
 OR
 (A) Describe Jurassic of Spiti. 07
 (B) Discuss the lithology, distribution and life during Cretaceous period of Sind. 07
 OR
 (B) Describe marine cretaceous of the Narmada valley. 07
- Q. 3. (A) Describe geotectonics and life of the Siwalik period. 07
 OR
 (A) Discuss Karewas. 07
 (B) Write notes on: (1) Gaj series, (2) Potwar series. 07
 OR
 (B) Explain (1) Rajmahal series, (2) Muree series. 07
- Q. 4. (A) Describe Deccan Trap formations of Gujarat. 07
 OR
 (A) Review briefly the Gondwanas of Madhya Pradesh. 07
 (B) Write a critical note on Permian –Triassic boundary. 07
 OR
 (B) Explain the boundary problem between Neogene-Quaternary. 07
- Q. 5. 1. Give classification of Dravidian group. 01
 2. Give the stratigraphic position of Muth Quartzite. 01
 3. Which is the types rock of Permian system of India ? 01
 4. Name few important Triassic fauna. 01
 5. Give the classification of Jurassic system of Kutch as proposed by S.K.Biswas. 01
 6. Name the formation of Cretaceous of Sind. 01
 7. Give the lithology of Infra-trappean beds. 01
 8. Name the type area of Jurassic system. 01
 9. Define Dhosa Oolites. 01
 10. What are "Passage Beds.". 01
 11. Which era is the shortest phase of earth's history? 01
 12. Who advocated and followed the three fold classification of Gondwana? 01
 13. Name the plant bearing inter-trappean beds. 01
 14. Describe Kota formation of Godawari basin.. 01

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- Q. 1. (A) Write an illustrative account on EMR. 07
OR
 (A) Discuss applications of Remote Sensing. 07
 (B) Describe spectral reflectance of earth surface features. 07
OR
 (B) Explain absorption, transmission, scattering and reflectance. 07
- Q. 2. (A) Write a note on types of data in GIS. 07
OR
 (A) Explain advantages and disadvantages of data models. 07
 (B) Discuss organizational context of GIS . 07
OR
 (B) Explain GPS. 07
- Q. 3. (A) Discuss the W M Davis and Walter Panck theories of landscape evolution. 07
OR
 (A) Write a note on Weathering and soils. 07
 (B) Describe typical landforms produced by wind deposition. 07
OR
 (B) Explain the role of tectonics in the evolution of landforms. 07
- Q. 4. (A) Discuss in brief morphometric analysis of a drainage basin. 07
OR
 (A) Write an illustrative account on drainage pattern and geologic structures. 07
 (B) Explain the relation between geomorphic processes and slopes. 07
OR
 (B) Describe the role of geomorphology in landuse planning. 07
- Q. 5. 1. Define microwave remote sensing. 01
 2. Give the types of scattering. 01
 3. Define spatial resolution. 01
 4. What is eustatic change ? 01
 5. Give full form of SAR. 01
 6. What are the functions of GIS ? 01
 7. Give the components of GIS. 01
 8. Define map overlay. 01
 9. Define the term morphology. 01
 10. Give the concept of geomorphology. 01
 11. Define morphostratigraphy. 01
 12. Define Rias. 01
 13. Name the erosional landforms produced by glaciers. 01
 14. Name few Indian satellites. 01