F–2019

Sub. Code
7MGE1C1

M.Sc. DEGREE EXAMINATION, APRIL 2019

First Semester

Geology

GEOMORPHOLOGY AND MARINE GEOLOGY

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Write a short note on soil profile.
2. Define Diastrophism.
3. Explain Cycle of Erosion.
4. Write a short note on Soil nomenclature.
5. Explain shore.
6. Give any two Physical properties of sea water.
7. What is non metallic pollution?
8. What are Oceanic Ridges?
9. List out the effects of sea level processes.
10. Define Ocean waves.

Part B (5 × 5 = 25)

Answer **all** the questions, choosing either (a) or (b).

11. (a) Explain briefly on the theories of Uniformitarian's.

Or

(b) Describe the landforms developed by the geological work of running water.

12. (a) Write a brief note on the process of rejuvenation in Fluvial cycle.

Or

(b) Describe briefly on the Coastal Geomorphology.

13. (a) Write a brief note on the Origin of Glacial Ice.

Or

(b) Explain in detail of Submarine Canyons.

14. (a) Give an account on Siliceous microfossils.

Or

(b) Write a short essay on classification of marine environment.

15. (a) Explain Sodium balance in the ocean.

Or

(b) Discuss the impact of Radioactivity on Coastal Environments.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Write an essay on the Limestone Weathering and Karst Topography.

17. Describe the Erosion. Explain the various cycle of Erosion found in Glacial and fluvial regions.

18. Write an essay on Alluvial Landforms.

19. Discuss and compare the classification of coast by Johnson and Shapard.

20. Describe in detailed notes on:

    (a) Oil Pollution

    (b) Metallic and Non metallic pollution.

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F–2020

Sub. Code
7MGE1C3

M.Sc. DEGREE EXAMINATION, APRIL 2019

First Semester

Geology

STRATIGRAPHY AND PALAEONTOLOGY

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Mention the Stratigraphic location of Siwalills.
2. What are the primary structures?
3. Define sequence Stratigraphy.
4. Write a note on Chronostratigraphy.
5. What is the principle of Stratigraphy?
6. Write a note on Lepidodendron.
7. What are diatoms?
8. Distinguish between Gangamopteres and Glossoptenis.
9. What is Dextral coiling?
10. Define Sigillaria.

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Describe Stratigraphy structure and mineral resource of Singhbhum Cration.

Or

(b) Write a note on Pleistocene glaciations.

12. (a) Discuss the concept of the Biostratgraphy.

Or

(b) Write a detailed account on cretaceous of Tiruchirapalli.

13. (a) Briefly describe the Stratigraphic succession of Siwaliks.

Or

(b) Briefly describe the Startigraphic importance of Cuddalore Sand stone.

14. (a) Explain the morphology of Radiolarians.

Or

(b) Describe the distribution of Toraminitera.

15. (a) Outline the morphology of Ectinoid.

Or

(b) Give brief account on Crinoids.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Give a detailed account on the principles of Startigraphic classification.

17. Explain the classification Stratigraphy and Economic importance of Gondwanas.

18. Write an essay on Morphology and Geologic history of Trilobites.

19. Explain the Environmental significance of Microfossils as Startigraphic and Climatic indicator.

20. Write an essay on the nature and modes of preservation of fossils.

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F–2022

Sub. Code
7MGE2C1

M.Sc. DEGREE EXAMINATION, APRIL 2019

Second Semester

Geology

ADVANCED CRYSTALLOGRAPHY AND MINERALOGY

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Write a short note on Shaenflion notation.
2. What is Spherical projection of normal classes?
3. Define quartz wedge.
4. Give a note on uniaxial indicatrix.
5. Define extinction angle.
6. Write about optic axial angle.
7. Give the properties of zircon.
8. Write the characteristics of chain silicates.
9. Define clay minerals.
10. What are the physical properties of corundum and spinel?

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Explain Bravis space lattices.

Or

(b) Explain interfacial angle and its measurements.

12. (a) Explain the principle of X-ray diffraction.

Or

(b) Illustrate the Optical properties of crystals.

13. (a) Describe the primary and secondary optic axes.

Or

(b) Brief note on the Isomorphism, Dimorphism and Polymorphism.

14. (a) Describe the Physical properties of olivine group minerals.

Or

(b) Explain the properties and occurrences of Olive and Beryl.

15. (a) Illustrate about Mica group minerals.

Or

(b) Describe Physical and Optical properties of Tourmaline.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Elaborate the Bragg's law and application.

17. Detail note on the uniaxial minerals properties.

18. Explain in detail about the birefringence optical anomalies.

19. Illustrate the Granet and Alumino silicates.

20. Write in detail about the Tecto silicates.

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F–2023

Sub. Code
7MGE2C2

M.Sc. DEGREE EXAMINATION, APRIL 2019

Second Semester

Geology

IGNEOUS AND METAMORPHIC PETROLOGY

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define Island arch.
2. Write a short note on Intrusive igneous rocks.
3. Give a note on Petrography of granite rhyolite clan.
4. Give the properties of Anorthosites.
5. Write about Fractional crystallization.
6. What is Solid solution?
7. Define Contact metamorphism.
8. Differentiate the Grades and zones.
9. What is retrograde metamorphism?
10. Write a short note on Migmatites.

Part B (5 × 5 = 25)

Answer **all** questions choosing either (a) or (b).

11. (a) Explain the Properties o magma.

Or

(b) Write an note on Ophitic and Porphyritic texture.

12. (a) Brief note on Petrogeaphic provinces of magmatic rocks.

Or

(b) Write a detail note on the Columnar structures.

13. (a) Illustrate the Reaction principle of bowen.

Or

(b) Explain Crystallization of magma.

14. (a) Give briefly about the Granulites.

Or

(b) Explain the Types of metamorphism.

15. (a) Describe Goldsmith mineralogical phase rule and its application.

Or

(b) Discusses about the Petrogenesis of Charnokites.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Elaborate Texture of igneous rocks and their petrogenetic significance.

17. Write the detail explanation of CIPW norm.

18. Give the detailed note on Law of thermodynamics.

19. Describe the Texture and mineralogy of metamorphic rocks.

20. Explain the application of trace, rare and stable isotope geochemistry in metamorphism.

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F–2024

Sub. Code
7MGE2C3

M.Sc. DEGREE EXAMINATION, APRIL 2019.

Second Semester

Geology

SEDIMENTOLOGY AND SEDIMENTARY PETROLOGY

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define weathering of Sedimentary rocks.

2. What is meant by Non — Clastic rocks?

3. Define permeability.

4. What are detrital rocks?

5. Write short notes on Evaporates.

6. Give short notes on Walther's law.

7. Define different sedimentary Environments.

8. Define Metallogeny.

9. Give a short note on Palaceocurrents.

10. Define Sedimentary facies.

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Write briefly on porosity and permeability.

Or

(b) Write an elaborate on surface textures of sedimentary particles.

12. (a) Describe the petrography of non classic rocks.

Or

(b) Distinguish between lithification and diagenesis.

13. (a) Write a short account on the graphical representation of sign Analysis data.

Or

(b) Describe the term diagenesis and add a note on its effects in Sediments.

14. (a) Describe the characteristics of marine environment of deposition.

Or

(b) Write a note on characteristics of non marine environment of deposition.

15. (a) Explain in detail on the inter relationship between Tectonism and Sedimentation.

Or

(b) Describe Molasses and Flysch deposits.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Describe briefly on primary Structures of sedimentary rocks with diagrams.

17. Give the Classification of Carbonate rocks as proposed by Folk and Dunham.

18. Write essay on the heavy mineral zones and their provenance.

19. Bring out the relation between Tectonism and Sedimentation.

20. Write an essay on physical properties of sedimentary particles.

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F–2025

Sub. Code
7MGE2E1

M.Sc. DEGREE EXAMINATION, APRIL 2019

Second Semester

Geology

Elective – PETROLEUM AND COAL GEOLOGY

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Give the properties of diagenesis.
2. Define reservoir traps.
3. What is a hydrocarbon deposit?
4. Define well logging techniques.
5. Write about casing and cementation.
6. Define shale gas and tar sand.
7. Characterize the coal grading.
8. Write about Drilling and logging.
9. Write a short note on Hydrogenation.
10. Note on Gondwana coalfield.

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Explain theories of hydrocarbon.

Or

(b) Elucidate the accommodation, rate of sedimentation.

12. (a) Brief note on Seismic Prospecting methods.

Or

(b) Explain kinds of depositional system.

13. (a) Describe oil shales, shale gas and gas hydrates.

Or

(b) Give explanation on the production and consumption pattern of resources.

14. (a) Describe Types and mode of occurrence of coal.

Or

(b) Explain drilling and logging.

15. (a) Beneficiation of Indian coals.

Or

(b) Give principle coal fields of the world.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Elaborate occurrences and distribution of hydrocarbons in sedimentary basin of India.

17. Explain the geochemical characteristics of oil bearing sediments.

18. Describe the principle management of hydrocarbon resources.

19. Illustrate the Origin, classification of Indian coal grading.

20. Give the detailed note on Lignite deposits in India.

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F–2026	Sub. Code
	7MGE3C1

M.Sc. DEGREE EXAMINATION, APRIL 2019

Third Semester

Geology

ECONOMIC GEOLOGY

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define evaporation.

2. Write about ore genesis.

3. Define distribution of zinc in India.

4. Give the uses of asbestos.

5. Differentiate precious and semiprecious.

6. Give the properties of abrasive minerals.

7. Define tenor and grade for minerals.

8. What are the essential minerals in India?

9. Write a short note on polarization colors.

10. Define paragenesis.

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Explain classification of mineral deposits.

Or

(b) Write briefly on mechanical concentration process.

12. (a) Enumerate the mode of occurrence distribution of copper and chromite.

Or

(b) Explain the structural control of ore localization.

13. (a) Elucidate the radioactive minerals.

Or

(b) Detail note on Ceramics.

14. (a) Explain the mines and minerals legislation of India.

Or

(b) Give note on mineral economics.

15. (a) Explain application of ore microscopy.

Or

(b) Describe the essential, critical and strategic minerals.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Explain geological and geochemical modeling of ore deposits.

17. Elaborate origin and uses of bauxite, iron and gold.

18. Elucidate the minerals wealth of Tamilnadu.

19. Give explanation on the mineral conservation and substitution.

20. Detailed note on physical properties of ore minerals.

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F–2027

Sub. Code
7MGE3C2

M.Sc. DEGREE EXAMINATION, APRIL 2019

Third Semester

Geology

ENGINEERING GEOLOGY, MINING GEOLOGY AND ORE DRESSING

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define strength and elastic properties.

2. Define properties of building stones.

3. Define reservoir.

4. What is Coastal erosion?

5. Give the Types of drill.

6. Write about Clay mining.

7. Write a short note on caving.

8. Define grading.

9. Define mineral dressing.

10. Define classifiers.

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Explain engineering properties of rocks.

Or

(b) Write an account on modular of deformation of rocks.

12. (a) Explain tunnels.

Or

(b) Give a brief note on the underground railway tunnels.

13. (a) Give brief note on Types of drill.

Or

(b) Give a brief note Bucket wheel excavator.

14. (a) Detail note on Clay mining.

Or

(b) Describe about the mine safety regulation.

15. (a) Discuss Physical and chemical properties of minerals.

Or

(b) Explain principles and application of Floatation.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Give explanation on the Role of geology in civil engineering.

17. Elucidate the Dam construction problems and remedial measures.

18. Elaborate drilling.

19. Explain the Factors controlling the choice various mining methods.

20. Detailed note on Principle of magnetic electrostatic separation.

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F–2028

Sub. Code
7MGE3E1

M.Sc. DEGREE EXAMINATION, APRIL 2019

Third Semester

Geology

Elective : REMOTE SENSING, GIS AND COMPUTATIONAL GEOLOGY

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define electromagnetic spectrum.

2. Define active and passive remote sensing system.

3. Define spectral and radiometric sensor.

4. Write about landsat and spot.

5. Define DIP.

6. Write a short note on image classification.

7. Give the properties of vector and raster.

8. What is Data analysis?

9. Name the open source software's for GIS and Image Processing.

10. Define remote sensing.

Part B $(5 \times 5 = 25)$

Answer **all** questions, choosing either (a) or (b).

11. (a) Explain thermal and microwave remote sensing.

Or

(b) Give brief note an Electromagnetic spectrum.

12. (a) Detail note on satellite and scanning system.

Or

(b) Discuss photo interpretation elements.

13. (a) Enumerate the Data merging and GIS integration.

Or

(b) Explain on spatial data types.

14. (a) Give note on Groundwater exploration using remote sensing and GIS.

Or

(b) Discuss recent trends in GIS.

15. (a) Elucidate the normal distribution and different types of histogram.

Or

(b) Give outline about basic concept of computers.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Explain ideal and real remote sensing system.

17. Give explanation on the past, present and future Indian space programme.

18. Elucidate the image enhancement.

19. Detailed note on Principle uses and components of GIS.

20. Elaborate bayes theorem and continuous random variable.

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F–2029

Sub. Code
7MGE4E1

M.Sc. DEGREE EXAMINATION, APRIL 2019

Fourth Semester

Geology

Elective : GEOLOGICAL, GEOPHYSICAL AND GEOCHEMICAL EXPLORATION

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define trenching?
2. Write about Toposheet.
3. Define types of Geophysical exploration.
4. Define principle of self potential.
5. Define Newton's law.
6. Define principle of Refraction.
7. Write a short note on Palaeomagnetism.
8. Define principles of Magnetic prospecting.
9. What are the abundance elements in the Earth Crust?
10. Short note on Threshold values.

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Explain Mineralogical guides to ore search.

Or

(b) Write an account on field documentation and basic field procedures.

12. (a) Explain limitations of various Geophysical Explorations

Or

(b) Give a brief note on the procedure and interpretation of the Induced Polarization Methods.

13. (a) Explain Geodesy of the earth

Or

(b) Detail note on Density logging.

14. (a) Describe about the Magnetic Susceptibility of Rocks.

Or

(b) Explain Air Borne Magnetic Survey.

15. (a) Discuss Geochemical Anomaly and their significance

Or

(b) Explain Geochemical Exploration of Gold and Copper.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Give explanation on the Marginal information of Toposheets and study of field equipment.

17. Elucidate the Electrical well logging techniques.

18. Detailed note on Interpretation of Horizontal two layered, multilayered and dipping layered.

19. Elaborate the Application of Radiometric methods.

20. Describe the Application of Geochemistry of Mineral exploration

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F–2030

Sub. Code
7MGE4E2

M.Sc. DEGREE EXAMINATION, APRIL 2019

Fourth Semester

Geology

Elective: HYDROGEOLOGY AND GROUND WATER MANAGEMENT

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define Hydrology.
2. Write about Turbulent flow.
3. What is electrode arrangement?
4. Define Logging.
5. Define Well design.
6. Define Well screening.
7. Define Hydraulic Conductivity.
8. Why the pump test is needed for groundwater provinces?
9. What are the physical parameters for the water quality?
10. Define the Chemical parameters of water quality

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Explain Geological formation as Aquifers and their types.

Or

(b) Write an account on Hydrological cycle.

12. (a) Explain electrical well logging methods for groundwater exploration.

Or

(b) Give a brief note on the principles of the Electrode arrangement.

13. (a) Explain about the types of well.

Or

(b) Detail note on Well development through different methods.

14. (a) Explain Methodology of Pump test.

Or

(b) Describe about the Data collection for basin investigation.

15. (a) Discuss Geochemical methods of groundwater exploration.

Or

(b) Explain the Chemical test for the estimating the water quality

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Give explanation on the Darcy law and its applications.

17. Elucidate the Surface methods of groundwater detection.

18. Elaborate Fluctuations of groundwater levels causes and control.

19. Explain the Groundwater provinces of India.

20. Detailed note on the diseases and Virological aspects of underground water and remedial measures.

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