S–2512

Sub. Code
23BGE1C1

B.Sc. DEGREE EXAMINATION, APRIL 2026

First Semester

Geology

GENERAL GEOLOGY

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. What is shield volcanoes?

2. Define earthquake.

3. What are folded mountains?

4. Define plate tectonics.

5. Illustrate water table.

6. What are Geycers?

7. What is river capture?

8. What are moraines?

9. Define sea waves.

10. Define Coriolis effect.

Part B (5 × 5 = 25)

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

11. (a) Outline types of volcanic cones.

Or

(b) Summarize causes of earthquakes.

12. (a) Describe Airy's theory of Isostasy with sketch.

Or

(b) Describe the concept of sea floor spreading.

13. (a) Build a note on water springs.

Or

(b) What is karst topography? Describe.

14. (a) Build a note on river meandering.

Or

(b) Summarize causes of glaciation.

15. (a) Describe types of ocean currents.

Or

(b) Describe types of coral reefs.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Discuss classification of volcanoes based on the nature of volcanic activity.

17. Explain concept and evidences of continental drift.

18. Explain different types of sand dunes with sketch.

19. Explain geological work and landforms produced by fluvial process with sketch.

20. What is shoreline. Explain types of shorelines with sketch?

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S–2513

Sub. Code
23BGE1C2

B.Sc. DEGREE EXAMINATION, APRIL 2026

First Semester

Geology

GEOSTATISTICS

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. Define class intervals.

2. What is a Frequency polygon?

3. Define Arithmetic mean.

4. What are the types of Central tendency?

5. List the classification of Dispersion measures.

6. What is Standard deviation?

7. Define Least Square.

8. What are the types of curve fitting?

9. Define Coefficient of Correlation.

10. What is Regression?

Part B (5 × 5 = 25)

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

11. (a) Write a note on Frequency distribution.

Or

(b) Distinguish between Histogram and Bar graph.

12. (a) Write a note on Mean, median and mode with examples.

Or

(b) Give a short note on combined arithmetic mean.

13. (a) Write a note on Relative measures of dispersion.

Or

(b) Give a short note on dispersion and its types.

14. (a) Write a note on parabolic curve fitting with example.

Or

(b) Give note on significance of straight line fitting form.

15. (a) Write a note on Rank correlation.

Or

(b) Distinguish between Correlation and Regression.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Describe the principles and significance of Frequency distribution.

17. Elaborate the application of the 'measures of Central tendency' in geological studies.

18. Elucidate the concept of Quartile deviation, Mean deviation and Standard deviation with example.

19. Illustrate the parabola least square fitting equation $(Y = ax^2 + bx + c)$ with example.

20. Explain the Spearman's Rank correlation.

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S–2514

Sub. Code
23BGE1FC

B.Sc. DEGREE EXAMINATION, APRIL 2026

First Semester

Geology

FUNDAMENTALS OF GEOLOGY

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define Nebular Hypothesis.

2. What is Solar System?

3. What are the important dating methods of rocks?

4. What are Seismic waves?

5. Define geomorphic agent?

6. What are relief features?

7. What are Atmospheric layers?

8. Define Landslide.

9. What are Abyssal plains?

10. Define Continental margins.

Part B (5 × 5 = 25)

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

11. (a) Give an account of the merits and demerits of Nebular Hypothesis.

Or

(b) Describe the existence of earth as a member of solar system.

12. (a) Give an outline of the Interior of Earth with a neat sketch.

Or

(b) Elucidate the Composition and thickness of the various layers of the earth.

13. (a) Describe the role of geomorphic agents in the Peneplanation process.

Or

(b) Write note on the process of weathering.

14. (a) Describe types of masswasting.

Or

(b) Give an account on the types of rapid mass flowage.

15. (a) Write a brief note on Submarine Canyons.

Or

(b) Elucidate continental shaft and continental rise.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Explain the scope and branches of geology.

17. Write in detail on the age of the earth and various methods of age determination of the earth.

18. Classify the relief features into various orders and write their significance.

19. Illustrate the Structure and Composition of Atmosphere.

20. Explain the Structure of Ocean basin with neat diagrams.

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S–2515

Sub. Code
23BGE2C1

B.Sc. DEGREE EXAMINATION, APRIL 2026

Second Semester

Geology

PALAEONTOLOGY

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define Paleontology.

2. Define Index Fossils.

3. What are Hemiasfer?

4. Give two examples of Anthozoans.

5. Define Umbo.

6. List any two fossils with Taxodont dentition.

7. List any two Lower Gondwana flora.

8. What are Graptolites? Give examples.

9. List any two vertebrate fossils.

10. What is the Age of Dinosaurs?

Part B (5 × 5 = 25)

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

11. (a) Write a brief note on Sponges.

Or

(b) Distinguish between Globigerina and Lagena.

12. (a) Describe morphological characteristics of Coelenterata.

Or

(b) Distinguish between Pentremites and Belemnites.

13. (a) Describe the important features of fossil Brachiopods.

Or

(b) Classify Pelecypods based on dentition.

14. (a) Write briefly on a typical Trilobite with a neat sketch.

Or

(b) Describe the Trilobite fossils of Cambrian age.

15. (a) Distinguish between Saurischian dinosaurs and Ornithischian dinosaurs.

Or

(b) Write a brief note on dinosaurs and their geological distribution.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Illustrate the various fossil forms of the Order Foraminifera.

17. Illustrate the various fossil forms of the Class Echinoidea.

18. Classify the Cephalopods based on their suture lines. Give neat diagrams and typical examples of each type.

19. Discuss the various fossil forms of the Class Graptoloidea. Write their geological significance.

20. Write an elaborate note on the Siwalik vertebrate fossils of India.

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S–2516

Sub. Code
23BGE2S1

B.Sc. DEGREE EXAMINATION, APRIL 2026

Second Semester

Geology

BASICS OF EARTH SCIENCES

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. List the hypothesis in formation of Solar system.

2. What are Inner planets?

3. Define Lithosphere.

4. List the layers of Atmosphere.

5. Define P-waves.

6. Define Asthenosphere.

7. What is anticline of the fold?

8. What is convergent plate boundary?

9. List the national fossil parks in Tamil Nadu.

10. List the Periods in the Mesozoic era.

Part B (5 × 5 = 25)

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

11. (a) Write a short note on planetesimal hypothesis.

Or

(b) Give a note on Big Bang Theory.

12. (a) Write a note on solstice and its types.

Or

(b) Give a short note on layers of Atmosphere.

13. (a) Give a short note on erosional landforms of wind.

Or

(b) Write a note Half-life period.

14. (a) Define Faults. Write a note on its components.

Or

(b) Describe sea floor spreading.

15. (a) Tabulate the Geological time scale.

Or

(b) Give a short note on significance of fossils.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Discuss the types and characteristics of planets in solar system.

17. Discuss the rotation and revolution of the Earth and their effects.

18. Explain the interior of the Earth with its characters and compositions.

19. Elucidate the geomorphic processes associated with the action of water.

20. Illustrate and explain the types of fossilization and modes of fossil preservation.

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S–2517

Sub. Code
23BGE2S2

B.Sc. DEGREE EXAMINATION, APRIL 2026

Second Semester

Geology

STRATIGRAPHY

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Write figures with illustrations wherever possible.

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define International standard stratigraphic chart.
2. Define Archaean's.
3. Index fossils of Lower Gondwana.
4. Permo-carboniferous episode in India.
5. Saline series of India.
6. Karewa formation.
7. Lameta beds.
8. Cenozoic rocks.
9. Tippam sandstone.
10. Coal deposit.

Part B (5 × 5 = 25)

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

11. (a) What are the various stratigraphic units.

Or

(b) Give an account on chemostratigraphy.

12. (a) Write a brief note on importance on Vindhyans.

Or

(b) Brief note on characteristics study of Delhi Super group.

13. (a) Differentiate infra trappean with inter trappeans.

Or

(b) Write shortly on stratigraphy of Cambrian of salt range.

14. (a) Short note on Jurassic of Kutch.

Or

(b) Short note on Triassic of spiti.

15. (a) Enumerate Stratigraphic importance of Cuddalore sand stone.

Or

(b) Describe characteristics of Laterites.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Elaborate in detail on Archaean rocks of Peninsular India.

17. Enumerate characteristics of Cuddapah super group.

18. Discuss Sedimentation and Lithology of Gondwanas.

19. Give a detailed note on Cretaceous of Tiruchirapalli.

20. Explain stratigraphy and Faunal characteristics of Siwaliks.

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S–2518

Sub. Code
23BGE3C1

B.Sc. DEGREE EXAMINATION, APRIL 2026

Third Semester

Geology

MINERALOGY

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is atomic number?

2. What is the significance of cohesion in minerals?

3. Name the major parts of a petrological microscope.

4. Define ordinary and polarized light.

5. What is the basic structure of silicate minerals?

6. Define biaxial minerals and give an example.

7. How do feldspathoids differ from feldspars?

8. What is the chemical composition of tourmaline?

9. What is the colour and use of biotite mica?

10. Name two important minerals from the chlorite group.

Part B (5 × 5 = 25)

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

11. (a) Enumerate the general principles of chemistry as applied to minerals.

Or

(b) Describe different types of atomic bonding in minerals.

12. (a) What is double refraction? Describe with an example.

Or

(b) Describe the working principle of a Nicol prism.

13. (a) Elucidate the role of pleochroism in mineral identification

Or

(b) Describe the different types of extinction in minerals.

14. (a) Describe the mineralogical characteristics and occurrences of Beryl.

Or

(b) Describe the optical and physical properties of Topaz.

15. (a) Compare and contrast the mica and chlorite groups.

Or

(b) Describe the mineralogical properties and occurrence of Serpentine and kaolin.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. What is polymorphism? Explain with suitable examples along with its causes and significance in mineralogy.

17. Explain the nature of light, including ordinary light. polarized light and monochromatic light with examples.

18. Explain the concepts of uniaxial and biaxial minerals along with their indicatrices and optical properties.

19. Explain varieties, mineralogical properties and occurrences of Quartz.

20. Explain Pyroxene group, including their composition, structure, and geological occurrences.

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S–2519

Sub. Code
23BGE3C2

B.Sc. DEGREE EXAMINATION, APRIL 2026

Third Semester

Geology

CRYSTALLOGRAPHY

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Draw suitable sketches wherever necessary

Part A (10 × 2 = 20)

Answer **all** the questions.

1. Define crystal.

2. What is axial ratio?

3. Define hemimorphic form.

4. What is diploidal form?

5. Give four mineral examples in hexagonal system.

6. Define Tri rhomboheral class.

7. Mention different classes found in orthorhombic system.

8. Type mineral of monoclinic system.

9. Define Twinning.

10. Example of interpenetration twin.

Part B (5 × 5 = 25)

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

11. (a) Describe about Miller Indices.

Or

(b) Write short notes on contact goniometer with sketches.

12. (a) Describe different forms of crystal.

Or

(b) Describe the symmetry elements and forms of normal class of Isometric system.

13. (a) Enumerate normal class of Tetragonal system.

Or

(b) Short note on scalenohedral class of Hexagonal system.

14. (a) Describe normal class of Monoclinic system.

Or

(b) Short note on rhombic pyramidal class of orthorhombic system.

15. (a) Write notes on twinning in staurolite and calcite.

Or

(b) Give a note on twinning in Aragonite.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Explain various elements of crystal symmetry, Add a note on crystallographic axes and their utility.

17. Describe the axial characters, system, symmetry elements and forms present in

    (a) Garnet

    (b) Pyrite

    (c) Cuprite

18. Enumerate Hexagonal system.

19. Give detailed note on orthorhombic system.

20. Write an essay on Irregularities of crystals.

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S–2520

Sub. Code
23BGE3S1

B.Sc. DEGREE EXAMINATION, APRIL 2026

Third Semester

Geology

GEO-HERITAGE AND GEO-TOURISM

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define Geo diversity.

2. Define the concepts of Geo heritage.

3. List the needs to conserve the geosites.

4. What are the types of Geoheritage sites?

5. What are the major geo heritage sites in Kerala?

6. List geological monuments in Tamil Nadu.

7. List the fossil sites in Jharkhand.

8. What are the significant geo tourism in Ladakh?

9. Define Geo-relics.

10. What is proposed bills and laws related to geo heritage?

Part B (5 × 5 = 25)

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

11. (a) Give a short note on socio-economic benefits of Geoheritage.

Or

(b) Write a note on significance of Geo parks.

12. (a) Give a note on major threats to Geoheritage.

Or

(b) Describe influence of Geological features on society.

13. (a) Elucidate wood fossil parks in Tamil Nadu.

Or

(b) Give a note on Hampi boulders of Karnataka.

14. (a) Write a short note on Rajmahal fossil park.

Or

(b) Describe the significance of Sundarban Mangrooves.

15. (a) Write a note on guidelines for selection of geo sites.

Or

(b) Give a note on challenges in farming Geoheritage laws in India.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Discuss on importance, history and concepts of Geoheritage.

17. Write detailed note on the significance of conservation of geosites in detail.

18. Explain the geological parks in Tamil Nadu and its significance.

19. Discuss the significant geomorphic sites in Maharashtra.

20. Elaborate the Geoheritage legislation and Prospectus in India.

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S–2521

Sub. Code
23BGE4C1

B.Sc. DEGREE EXAMINATION, APRIL 2026

Fourth Semester

Geology

STRUCTURAL GEOLOGY

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. List any four major topographic forms.

2. Define geological map.

3. Define stress.

4. What are the three stages of deformation?

5. Define a normal fault.

6. What is a graben?

7. What are columnar joints?

8. Give the different types of joints.

9. Define an angular unconformity.

10. Give any two factors used to identify an unconformity.

Part B (5 × 5 = 25)

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

11. (a) Describe the attitude of beds.

Or

(b) Write briefly on outcrops and exposures.

12. (a) Describe the types of stress.

Or

(b) Differentiate between foliation and lineation.

13. (a) Describe the various terminology used in fault classification.

Or

(b) Enumerate the criteria for recognition of faults.

14. (a) Give an account on repetition and omission of strata.

Or

(b) Differentiate between inlier and outlier.

15. (a) Distinguish between overlap and offlap.

Or

(b) Describe the criteria to distinguish unconformities from faults.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Elaborate on the scope and purview of structural geology.

17. Write an essay on the classification of folds.

18. Write an elaborate note on faults, their classification with neat sketches.

19. Classify joints genetically and geometrically with neat sketches.

20. Illustrate the various kinds of unconformities with neat sketches.

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S–2522

Sub. Code
23BGE4S1

B.Sc. DEGREE EXAMINATION, APRIL 2026

Fourth Semester

Geology

FIELD GEOLOGY

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define pitting and trenching in field geology.

2. Define ore reserves.

3. Define strike.

4. Differentiate true dip and apparent dip.

5. Define true thickness of a bed.

6. What is meant by repetition of outcrops?

7. Define a sample in geology.

8. Mention important methods of geological sampling.

9. What are cardinal points on a map?

10. What is map scale?

Part B (5 × 5 = 25)

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

11. (a) Write a short note on the importance of field geology.

Or

(b) Describe the role of fossils in field geological studies.

12. (a) Elucidate the use of Brunton compass in the field.

Or

(b) Write a short note on the influence of dip and ground slope on outcrops.

13. (a) How is vertical thickness of beds measured in the field?

Or

(b) Write a short note on conditions leading to repetition of outcrops.

14. (a) Describe chip and grit sampling.

Or

(b) Elucidate the importance of preventing contamination in sampling.

15. (a) Write a note on map index and attitude of beds.

Or

(b) Describe the procedure for position of an outcrops on map.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Explain how a field geologist identifies outcrops, fossils, and other geological features in the field.

17. Discuss methods of representing topography on maps, and explain the relationship between true dip, apparent dip, and strike with neat sketches.

18. Discuss relationship between true and vertical thickness their calculation from field data.

19. Discuss different geological sampling methods, with emphasis on core sampling.

20. Explain topographic map.

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S–2523

Sub. Code
23BGE5C1

B.Sc. DEGREE EXAMINATION, APRIL 2026

Fifth Semester

Geology

IGNEOUS PETROLOGY

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define Sill.

2. What is hypabyssal rocks?

3. Define ophitic texture.

4. What are peralkaline rocks?

5. Define eutectic point.

6. What is the role of silica in magma composition?

7. What is lamprophyre?

8. Name the essential minerals of granite.

9. What is a petrographic province?

10. Define carbonatite.

Part B (5 × 5 = 25)

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

11. (a) Write short notes on extrusive igneous forms.

Or

(b) Write a note on distribution elements in the Crust.

12. (a) Brief note on equigranular texture with neat sketch.

Or

(b) Write short notes on microstructures observed in igneous rocks.

13. (a) Distinguish between acidic and basic magmas.

Or

(b) Describe the Albite—Anorthite binary system with phase diagram.

14. (a) Describe the petrological characters of Dolerite.

Or

(b) Elucidate the petrographical features of Syenite.

15. (a) Describe the role of fractional crystallization in magma evolution.

Or

(b) Enumerate the epetrological character of Anorthosite.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Explain various structures associated with igneous rocks and their geological significance.

17. Write detailed note on the CIPW classification of igneous rocks.

18. Discuss binary system Diopside–Anorthite with phase diagram and significance.

19. Give detail account on mineralogy, texture and occurrence granite.

20. Write an essay on variation diagrams and their importance in petrology.

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S–2524

Sub. Code
23BGE5C2

B.Sc. DEGREE EXAMINATION, APRIL 2026

Fifth Semester

Geology

SEDIMENTARY AND METAMORPHIC PETROLOGY

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define diagenesis.

2. What is meant by 'clastic texture'?

3. Define terra rossa.

4. Give examples for rudaceous rocks.

5. What is guano deposits composed of?

6. What is chert?

7. What are agents of metamorphism?

8. Define Metamorphism.

9. What is metasomatism?

10. Define schist

Part B (5 × 5 = 25)

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

11. (a) Brief note on chemical structures of sedimentary rocks.

Or

(b) Distinguish between graded bedding and cross bedding.

12. (a) Write a note on residual deposits.

Or

(b) Compare the composition and texture of sandstone and shale.

13. (a) Describe the characteristics of siliceous deposits of chemical origin.

Or

(b) Write a note on the formation and economic importance of gypsum.

14. (a) Describe the zones of metamorphism.

Or

(b) Write short account on anatexis and palingenesis.

15. (a) Describe the products of plutonic metamorphism

Or

(b) Write a note on petrography of Migmatite.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Discuss mechanical and chemical groups of sedimentary rocks.

17. Classify clastic sedimentary rocks and discuss the main features of rudaceous, arenaceous, and argillaceous rocks.

18. Write detailed note on organic deposits.

19. Explain kinds of metamorphism with relevant examples.

20. Give an detailed account on dynamo thermal metamorphism and its products

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S–2525

Sub. Code
23BGE5C3

B.Sc. DEGREE EXAMINATION, APRIL 2026

Fifth Semester

Geology

PHOTOGEOLOGY, REMOTE SENSING AND GIS

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define aerial photograph scale.

2. What is side lap in aerial photographs?

3. Write two factors affecting aerial photographic results.

4. Define stereoscopy.

5. What is relief displacement?

6. Define electromagnetic spectrum.

7. What is an ideal remote sensing system?

8. Define pixel.

9. Differentiate data and information.

10. What is topology in GIS?

Part B (5 × 5 = 25)

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

11. (a) Write a note on annotation of aerial photographs.

Or

(b) Describe the types of mosaics.

12. (a) Write short notes on stereoscopy and stereovision.

Or

(b) Describe area measurement in photogrammetry.

13. (a) Describe EMR interaction with earth surface feature.

Or

(b) Write note on electromagnetic spectrum.

14. (a) Describe Indian space programme — present scenario.

Or

(b) Describe Across — track and along track scanning systems.

15. (a) Elucidate GIS hardware and software components.

Or

(b) Describe global positioning systems (GPS).

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Explain causes of variation of scale in detail.

17. What is vertical exaggeration. Detail out factors affecting vertical exaggeration.

18. Explain pixel, path, row and swath.

19. Write in detail sensors and their resolutions.

20. Explain application of Remote Sensing and GIS in geological studies.

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S–2526

Sub. Code
23BGE5E1

B.Sc. DEGREE EXAMINATION, APRIL 2026

Fifth Semester

Geology

Elective – REGIONAL GEOLOGY

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define geomorphology.

2. What is southern granulite terrain?

3. What are alkali rocks. Give example.

4. Write the major and accessory minerals of Charnockite.

5. Write the fauna and flora of Sriperumbudur beds.

6. What is Ninyur formation?

7. What are natural precious stones?

8. Define Lignite.

9. Write ore minerals of iron.

10. Define beach placers.

Part B (5 × 5 = 25)

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

11. (a) Describe geological significance of Palghat-Cauvery shear zone.

Or

(b) Write short note on tectonic control of the western ghats.

12. (a) Build a note on Kadavur anoththosite.

Or

(b) Build a note on Thiruthani dyke swams.

13. (a) Write the geological significance of Therany clay bed.

Or

(b) What is Cenomanian marine transgression- Describe.

14. (a) Build a note on Cuddalore sandstone.

Or

(b) What are heavy minerals- Describe with example.

15. (a) Write the origin of Magnesite deposites Chalk hills.

Or

(b) Describe the origin of bauxite deposits.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Discuss about soil types of Tamil Nadu.

17. Discuss origin and geological significance of Cordierite-Sillimanite rocks of Madurai regions.

18. Discuss Cretaceous of Trichy district with reference to fossil and mineral wealth.

19. Explain mode of occurrence and distribution of precious stones in Tamil Nadu.

20. Evaluate distribution and uses of silica sands in coastal areas of Tamil Nadu.

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S–2527	Sub. Code 23BGE5E2

B.Sc. DEGREE EXAMINATION, APRIL 2026

Fifth Semester

Geology

Elective – MINERAL ECONOMICS AND INDUSTRIAL MINERALS

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define the term ore tenor.
2. What are critical minerals?
3. What is mineral mine?
4. What is mineral substitution?
5. What are building stones -Give example.
6. Write any four commercial names of granite.
7. What are abrasive minerals?
8. List any four minerals used in refractory industry.
9. What do you mean quarry?
10. What is primary cutting?

Part B (5 × 5 = 25)

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

11. (a) Outline the scope of mineral economics.

Or

(b) What are the economical peculiarities inherent in mineral industry.

12. (a) What is mineral conservation - Describe.

Or

(b) Elucidate geostatistical method of ore reserve estimation.

13. (a) Build a note on industrial minerals.

Or

(b) Write short note on physical properties of marble.

14. (a) Write brief note on physical properties and chemical composition of corundum.

Or

(b) Outline the minerals used in paint and pigment industry.

15. (a) Describe cross sectional area method of resource estimation with sketch.

Or

(b) Outline machineries used in granite quarry.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Explain various criteria involved in specifications for minerals.

17. Elaborate mines and minerals legislation of India.

18. What are building stones? Discuss types of building stones.

19. Discuss physical properties, chemical composition and mode of occurrence of garnet.

20. Discuss about granite trade and marketing opportunities.

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S–2528

Sub. Code
23BGE6C1

B.Sc. DEGREE EXAMINATION, APRIL 2026

Sixth Semester

Geology

ECONOMIC GEOLOGY

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is an ore?

2. How does tectonic setting control ore localization?

3. What is hydrothermal activity?

4. Define metamorphism?

5. Where silver deposits are typically found?

6. List out some major uranium-producing countries?

7. Define the types of iron deposits

8. What are the main uses of chromite?

9. Define the Tertiary coal deposits of India?

10. What is the importance of traps?

Part B (5 × 5 = 25)

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

11. (a) Describe the principles of geological Thermometry and its importance in understanding the thermal history of rocks.

Or

(b) Describe the concept of metallogenetic epochs and their significance in understanding the formation of mineral deposits.

12. (a) Elaborate on the geological processes involved in the formation of iron ore deposits.

Or

(b) Analyze the importance of contact metasomatism in the formation of economic deposits.

13. (a) Describe the characteristics of different types of gold deposits, including lode deposits, placer deposits and epithermal deposits.

Or

(b) Comment on the different types of zirconium deposits with examples.

14. (a) Describe the economic importance of lead and zinc deposits.

Or

(b) Write note on geological processes that control the formation of bauxite deposits.

15. (a) Describe the origin and formation of coal deposits in India.

Or

(b) Give short account on distribution of petroleum reserves in India.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Explain major metallogenic epochs in India and their associated mineral deposits.

17. Discuss the geological and geochemical conditions necessary for supergene sulphide enrichment and its importance in forming economic mineral deposits.

18. Discuss the mode of occurrence and distribution of gold in India, highlighting its uses and economic significance.

19. Evaluate the geological processes that control the formation of iron ore deposits in India.

20. Discuss the origin, mode of occurrence and distribution of coal deposits in India.

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S–2529	Sub. Code 23BGE6E1

B.Sc. DEGREE EXAMINATION, APRIL 2026

Sixth Semester

Geology

Elective – HYDROGEOLOGY

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. Define Groundwater.

2. What is meant by artesian well?

3. Define–porosity.

4. Define laminar flow.

5. Define groundwater quality.

6. Why are water standards necessary?

7. Name any two methods of groundwater exploration.

8. What is the difference between dug well and tube well?

9. Define the term watershed.

10. State any two methods to prevent seawater intrusion.

Part B (5 × 5 = 25)

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

11. (a) Describe hydrological cycle with neat sketches.

Or

(b) Write short note on vertical distribution of groundwater.

12. (a) Describe primary and secondary openings in rocks with examples.

Or

(b) Describe the difference between laminar and turbulent flow in groundwater.

13. (a) Elucidate the importance of pH, hardness, and turbidity in assessing groundwater quality.

Or

(b) Describe the components of roof top rainwater harvesting system and their functions.

14. (a) Describe the surface method in groundwater exploration.

Or

(b) Illustrate collector walls.

15. (a) Write short note on groundwater basins of Tamil Nadu.

Or

(b) Describe how over-extraction of groundwater leads to seawater intrusion.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Enumerate the different types of aquifers and their characteristics with diagrams.

17. Discuss Darcy's Law and its applications in understanding groundwater flow.

18. Explain different artificial recharge methods of groundwater with neat sketches.

19. Discuss the geophysical methods used in groundwater exploration.

20. Explain the concept of a drainage basin and its significance in hydrological studies

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S–2530

Sub. Code
23BGE6E2

B.Sc. DEGREE EXAMINATION, APRIL 2026

Sixth Semester

Geology

Elective – ENGINEERING AND MINING GEOLOGY

(CBCS – 2023 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define Porosity.
2. Define durability.
3. What is meant by endogenic forces?
4. Define road metals.
5. Define Reservoir.
6. Define coastal erosion.
7. Define mining geology.
8. What is percussive drilling?
9. Define open cast mining.
10. State any two environmental impacts of open-cast mining.

Part B (5 × 5 = 25)

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

11. (a) Describe about engineering properties of rocks.

Or

(b) Describe frost and fire resistance.

12. (a) Write short note on nature and properties of building stones.

Or

(b) Describe the types of earth movements.

13. (a) Describe about types of tunnels.

Or

(b) Describe the coastal erosion and how to prevent.

14. (a) List the merits of supported stope mining.

Or

(b) Give brief note on types of drill.

15. (a) Describe the classification of underground mining methods with suitable examples.

Or

(b) Outline the major geological problems faced during mining operations.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Discuss about the role of geology in civil engineering projects.

17. Explain the types, causes and remedial measures pertaining to landslides.

18. Enumerate the geological investigation of site in the construction of dam and its types.

19. List the mining terminology used and explain them with necessary diagrams.

20. Write an essay on the general classification of mining methods and their importance in mineral extraction.

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