F–6065

Sub. Code
7BGE1C1

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021.

First Semester

Geology

DYNAMIC GEOLOGY

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define Tidal hypothesis.
2. Define size and density of the Earth.
3. Define dormant volcanoes.
4. Define fissure type volcanoes.
5. Define Epicentre and focus.
6. Define Asthenosphere.
7. Define Convection current.
8. Define Contraction theory.
9. Define plate boundaries.
10. Define continental drift.

Part B (5 × 5 = 25)

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

11. (a) Describe Nebular Hypothesis with neat sketches.

Or

(b) Write note on Planetesimal hypothesis.

12. (a) Give short note on Carbon dating method.

Or

(b) Write note on products of volcanoes.

13. (a) Write note on scales of Earthquake.

Or

(b) Write note on distribution of earthquake.

14. (a) Write note on classification of mountains.

Or

(b) Describe the concept of Airy's theory of Isostasy.

15. (a) Write note on tectonic features associate with tectonic plate boundaries.

Or

(b) Write note on Relief features and their distribution.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Write a detailed note on Earth as a member of solar system and its relation to other planets.

17. Give a detail understanding on Age of the Earth.

18. Write an essay on Earthquakes. Add a note on its effects and causes.

19. Write a detailed note on origin of tectonic mountains with neat sketches.

20. Discuss the concept of continental drift theory.

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F–6066	Sub. Code
	7BGE1C2

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021.

First Semester

Geology

GEOMORPHOLOGY

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define weathering

2. Define the term aggradation

3. List out the constituents of the Earth's atmosphere

4. What are geysers?

5. What are braided streams?

6. Name the type of drainage pattern in which the stream network has a pattern of a tree

7. What are icebergs?

8. Define ablation

9. What are atolls?

10. What are seamounts?

Part B (5 × 5 = 25)

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

11. (a) Write short notes on first order relief features

Or

(b) Elaborate on the products of weathering

12. (a) Write an account on erosional landforms produced by fluvial process.

Or

(b) Give an account on the types of sand dunes.

13. (a) Explain the process of development of river valleys.

Or

(b) Give a short account on

(i) River terraces

(ii) Stream rejuvenation

14. (a) Elaborate on the types of glaciers.

Or

(b) Give an account of glacial epochs and causes of glaciations.

15. (a) Give an account on the types of shorelines.

Or

(b) Explain the different types of coral reefs.

Part C $(3 \times 10 = 30)$

Answer any **three** questions.

16. Write an essay on mass wasting and their types

17. Describe the various landforms produced by groundwater

18. Describe the various types of drainage pattern

19. Describe the landforms produced by glacial action

20. Elaborate on the origin and classification of lake deposits

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F–6068	Sub. Code
	7BGE3C1

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021

Third Semester

Geology

CRYSTALLOGRAPHY AND OPTICAL MINERALOGY

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define Axial Ratio.

2. Define a crystal.

3. Give the symmetry of normal class of Hexagonal System of Meonite.

4. Give the symmetry of Zircon.

5. Define twinning.

6. Give the symmetry of Calcite.

7. State Brewster's Law.

8. Define propagation and vibration direction of light.

9. Define Interference color.

10. Define Pleochroism.

Part B (5 × 5 = 25)

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

11. (a) Describe the Holohedral, Hemihedral and Hemimorphic forms in crystals.

Or

(b) Describe how to find axial ratio by means of interfacial angle measurement.

12. (a) Write short note on Wulfenite.

Or

(b) Write short note on Calcite.

13. (a) Describe twin laws pertaining to Augite and Feldspars.

Or

(b) Give note on Polysynthetic and Cyclic twins.

14. (a) Describe the construction and uses of Nicol Prism.

Or

(b) Write short note on Polaroids.

15. (a) Describe how relative refractive index is determined.

Or

(b) Define extinction and describe how it is determined.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Write a detail note on Millerian system of crystal notation.

17. Explain the symmetry elements and forms of various classes of Hexagonal system with special reference to Tounmaline.

18. Explain the symmetry elements and forms of various classes of Hexagonal system with special reference to Topaz.

19. Explain the parts and the functions of Petrological Microscope with illustration.

20. Explain Optic sign in uniaxial and biaxial minerals.

F–6069

Sub. Code
7BGE4C1

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021

Fourth Semester

Geology

INDIAN STRATIGRAPHY

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Name the important mountains of Peninsular India.

2. List out the physiographic divisions of India.

3. What is the geological age of the Cuddapah System?

4. Name the largest Proterozoic intra-continental basin located in the central India.

5. Where is Salt Range located? Why it is named so?

6. Mention the geological age of Umaria marine beds.

7. What is the geological age range of the Gondwana Supergroup rocks of India?

8. What is meant by marine transgression?

9. What are intertrappeans?

10. Mention the geological age of Cuddalore sandstone.

Part B (5 × 5 = 25)

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

11. (a) Give an outline on the major stratigraphic formations of India.

Or

(b) Write short notes on the mineral wealth of Archaean rocks of India.

12. (a) Give a brief account on Semri Series.

Or

(b) Describe the mineral wealth of the Vindhyan System.

13. (a) Give an account on Haimantha System of Spiti.

Or

(b) Discuss briefly about the age of the Saline Series.

14. (a) Give an outline on the subdivisions of Gondwana Supergroup.

Or

(b) Elaborate on the Umia Series of the Jurassic sequence of Kutch.

15. (a) Describe briefly about the Karewa Series.

Or

(b) Write an account on the fauna of the Siwalik System.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Write an essay on the stratigraphy and economic importance of the Dharwar rocks of India.

17. Describe the stratigraphic divisions of the Cuddapah System.

18. Elucidate the Palaeozoic rocks of Salt Range.

19. Write an essay on the Cretaceous rocks of Trichinopoly.

20. Discuss about the age of the Deccan traps.

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F–6070	Sub. Code
	7BGE4C2

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021.

Fourth Semester

Geology

STRUCTURAL GEOLOGY

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Distinguish between strike and dip

2. What is the relation between true thickness and vertical thickness?

3. What is meant by hinge of a fold?

4. Define strain

5. What is meant by fault breccia? What is its use?

6. What is a normal fault?

7. What are columnar joints?

8. What is a nappe?

9. What is overlap?

10. What is an unconformity?

Part B (5 × 5 = 25)

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

11. (a) How are physiographic features are represented in topographic maps?

Or

(b) Describe the relationship between true dip and apparent dip.

12. (a) Write short notes on the types of stress.

Or

(b) Describe the criteria for recognizing fold in field.

13. (a) Write an account on the criteria for recognizing fault in field.

Or

(b) Describe horst and graben with neat sketches.

14. (a) Write an account on inliers and outliers with neat sketches.

Or

(b) Discuss about of repetition of outcrops due to erosion, folding and faulting.

15. (a) Describe the criteria for recognition of unconformity in field.

Or

(b) Describe the parts and functions of a clinometer compass.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Write an account on the preparation of geological maps and their uses

17. Describe the three stages of deformation

18. Write an account on the geometrical classification of fault with neat sketch

19. Write an account on genetic and geometrical classification of joints

20. Describe the kinds of unconformities with neat sketches

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F–6450	Sub. Code
	7BGEE1A

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021.

Fifth Semester

Geology

Elective: FIELD GEOLOGY

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define outcrop.
2. What is topography?
3. Define strike and dip.
4. What is core sampling?
5. Define scale of a map.
6. What is toposheet?
7. Define true dip.
8. Define contour.
9. What is chip sampling?
10. Define drill hole sampling.

Part B (5 × 5 = 25)

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

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

Or

(b) Give note on the basic preparation for fieldwork.

12. (a) Give note on the Clinometer Compass.

Or

(b) Write short note on the identification of domes and basins by contours.

13. (a) Write short note on true and apparent dip in an outcrop.

Or

(b) Give note on the attitude of the beds.

14. (a) Write short note on the sample requirement as to the size, purity and contamination.

Or

(b) Give notes on Channel sampling and Muck sampling.

15. (a) Give short note on geomorphology map and its features.

Or

(b) Write note on small scale and large-scale maps.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Explain the importance of field geology in the identification of a mineral deposit.

17. Explain the parts and uses of Brunton Compass.

18. Write in detail about the methods of mapping of an outcrop.

19. Discuss various type of sampling methods.

20. Write a detail note on plotting various structural features in a geology map.

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F–5239

Sub. Code
7BGE3C2

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021

Third Semester

Geology

MINERALOGY

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is diaphaneity?
2. Distinguish between isomorphism and polymorphism.
3. Name the members of plagioclase feldspar.
4. What is rapakivi texture?
5. Give examples for ortho pyroxene.
6. What is glaucophene?
7. How a biotite can be identified?
8. What is the composition of Wollastonite?
9. Write the hardness of zircon, talc, flourite and rutile.
10. Name the monomineralic rock of olivine.

Part B (5 × 5 = 25)

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

11. (a) How the molecular formulas of the minerals are derived?

Or

(b) How the specific gravities of the minerals are determined?

12. (a) Outline the structure, composition, forms and occurrence of nepheline.

Or

(b) Outline the structure, composition, forms and occurrence of leucite.

13. (a) List the physical properties of any two pyroxenes.

Or

(b) List the physical properties of any two amphiboles.

14. (a) Write a short note on the physical properties of Rhodonite.

Or

(b) Write a short note on the distinguishing characteristics of Scapolite.

15. (a) Outline the distinguishing characteristics of Calcite.

Or

(b) Outline the distinguishing characteristics of Flourite.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Write an account on the physical properties based on magnetism, electricity, cohesion and density of minerals.

17. Describe the physical properties and chemical composition of quartz group of minerals.

18. Name the garnet group of minerals. Add a detailed note on their distinguishing properties.

19. Discuss the physical properties, chemical composition and mode of occurrence of Zeolite group of minerals.

20. Write a detailed account on the polymorphs of aluminium silicates and their properties.

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F–5242

Sub. Code
7BGE5C1

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021

Fifth Semester

Geology

IGNEOUS PETROLOGY

(CBCS – 2017 Onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define Magma and Lava.

2. Describe the Pyroclastic Deposits.

3. What is Columnar Joints?

4. Write short notes on Xenolithic.

5. Define Unicomponent Magma.

6. Write notes on Differentiation.

7. Write the different kinds of Igneous Rocks.

8. What you meant by CIPW.

9. Write the Volcanic Equivalent of the following rocks; Granite, Syenite and Gabbro.

10. Write short notes on Pegmatites.

Part B (5 × 5 = 25)

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

11. (a) Give details on the Earth Composition.

Or

(b) Write short account on types of Magma.

12. (a) Give the detailed notes on Vesicular and Amygdaloidal Structure with examples.

Or

(b) Give brief account on Reaction and Xenolithic texture.

13. (a) Describe notes on Bowen Reaction Principles of Magma.

Or

(b) Write detailed notes on Binary Magma with examples.

14. (a) Give detailed account on Megascopic classification of igneous rocks.

Or

(b) Write notes on Tabular classification of igneous rocks by Tyrrel.

15. (a) Detailed discuss of Petrogenesis of Syenite.

Or

(b) Give brief account on Anorthosites.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Give brief account on different types of Forms in Igneous rocks.

17. Write an essay on texture of Igneous Rocks

18. Give brief account on the Binary Magma of Albite and Anorthite System.

19. Brief discussion about the CIPW classification of Igneous Rocks.

20. Write notes on the Ultrabasic Rocks.

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F–5243

Sub. Code
7BGE5C2

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021

Fifth Semester

Geology

SEDIMENTARY AND METAMORPHIC PETROLOGY

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define the Texture of Rocks.
2. Write short notes on Structure of Sedimentary rock.
3. Define the Arenaceous deposits.
4. Write notes on Sandstone.
5. Define Ferrugineous deposits.
6. Write short notes on Rock salt.
7. Describe the Metamorphic Facies.
8. Define the Zone of Metamorphism.
9. Write short note on Pneumatolytic Metamorphism.
10. Define Injection Metamorphism.

Part B (5 × 5 = 25)

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

11. (a) Write short note on Structures of Sedimentary rocks.

Or

(b) Explain the textures of Sedimentary rocks.

12. (a) Write notes on Sandstone and Shale.

Or

(b) Describe about Conglomerate and Breccia.

13. (a) Write notes on calcareous and Ferruginous Deposits.

Or

(b) Describe the Chert and Flint.

14. (a) Brief discussion on Zone of Metamorphism.

Or

(b) Explain the Thermal Metamorphism.

15. (a) Write detailed notes on Metasomatism and their processes.

Or

(b) Describe about the Quartzite and Schist.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Briefly discuss about Sedimentary Process of Rock formation.

17. Explain the Clastic deposits of Sedimentary rock.

18. Explain the Non-Clastic Deposits of Sedimentary rocks.

19. Brief discussion of Kinds of Metamorphism.

20. Explain the Dynamothermal and Plutonic Metamorphism.

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F–5245

Sub. Code
7BGEE2A

B.Sc. DEGREE EXAMINATION, NOVEMBER 2021

Fifth Semester

Geology

Elective – HYDROGEOLOGY AND ENGINEERING GEOLOGY

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is connate water?
2. Define aquitard.
3. What is specific yield?
4. State Darcy's law.
5. What are the important WHO standards for drinking water?
6. What are the two methods of resistivity survey?
7. What is tensile strength?
8. State Young's modulus of elasticity.
9. Mention any two important geological conditions for tunnelling.
10. What are seawalls?

Part B (5 × 5 = 25)

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

11. (a) Describe the vertical distribution of groundwater.

Or

(b) Write notes on the types of aquifers.

12. (a) Describe the rocks properties affecting groundwater.

Or

(b) Differentiate porosity and permeability.

13. (a) Discuss about the natural recharge of groundwater.

Or

(b) Give an account on the electrical resistivity method.

14. (a) Write a note on the properties of building stones.

Or

(b) Describe the preventive measures for landslides.

15. (a) Give an account on the various types of dams with neat sketches.

Or

(b) Discuss the geological investigations pertaining to hard ground tunnelling.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Describe the hydrologic cycle with a neat sketch.

17. Explain the properties that affect the groundwater.

18. Write an essay on the groundwater qualities.

19. Describe the geological investigations related to the foundation of bridges.

20. Discuss the geological investigations pertaining for the dam site and reservoir.

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