

M.Sc. DEGREE EXAMINATION, NOVEMBER 2021.

First Semester

GEOLOGY

STRATIGRAPHY AND PALAEONTOLOGY

(CBCS – 2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Write with neat diagrams and illustration possible.

 $(10 \times 2 = 20)$

Answer **all** questions.

Part A

- 1. Classification of stratigraphy
- 2. Define Sequence stratigraphy
- 3. Whether there is any advent of life in Cuddapahs
- 4. What is the significance of Bagh beds?
- 5. Mention stratigraphic location of siwaliks
- 6. Define saline series of India.
- 7. Note on Lepidodentron.
- 8. Distinguish between Glossopteries and Gangamopteres.
- 9. Write few words about Orchiopetrics.
- 10. Economic value of foraminifers.

Part B (5 × 5 = 25)

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

11. (a) Write a note on European stratigraphy.

Or

- (b) Give an account on application of chemo stratigraphy.
- 12. (a) Describe the stratigraphy and mineral resources of Gondwanas.

Or

- (b) Give an account on the stratigraphic succession of Triassic of Spiti.
- 13. (a) Describe the stratigraphy of saline series.

Or

- (b) Strategy of Quaternary formations
- 14. (a) Enumerate Historic concept of evolution.

Or

- (b) Write shortly on stratigraphic significance of Tertiary flora
- 15. (a) Brief accounts on vertebrates with reference to geologic time.

Or

(b) Give a brief note on spores and pollens.

 $\mathbf{2}$

Part C (3 × 10 = 30)

Answer any **three** questions.

- 16. Write an essay on sequence stratigraphy.
- 17. Discuss in detail about Jurassic of Kutch
- 18. Give a detailed account on K-T transition in India.
- 19. Discuss the evolution and stratigraphic importance of Ammonites.
- 20. Write an elaborate note on Application of micropalaeontology for petroleum exploration and marine geology.

3

Sub. Code
7MGE3C2

M.Sc. DEGREE EXAMINATION, NOVEMBER 2021.

Third Semester

GEOLOGY

ENGINEERING GEOLOGY, MINING GEOLOGY AND ORE DRESSING

(CBCS - 2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A $(10 \times 2 = 20)$

- 1. Define rock clasticity.
- 2. What is natural aggregates?
- 3. Expand TBM.
- 4. What is mean by dock?
- 5. Define rock drill bits.
- 6. Define dredging.
- 7. List a few types of mine supports.
- 8. What is top slicing?
- 9. Name any four types of rock crushers.
- 10. Give any two differences between vibrating screens and shaking tables.

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

11. (a) Give a brief account of stress and strains.

Or

- (b) Describe the properties of building stone.
- 12. (a) Enumerate the geological problems related to dam construction.

Or

- (b) What suggestions you would like to make for protecting coastal erosion?
- 13. (a) Describe mine shaft with a sketch.

Or

- (b) Outline clay mining methods.
- 14. (a) Write a brief account of room and pillar method of mining.

Or

- (b) Briefly describe the factors controlling the choice of mining methods.
- 15. (a) Elaborate the fundamentals of ore size reduction.

Or

(b) Examine the role of ball mills in ore processing.

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

Answer any three questions.

- 16. Explain engineering properties of rocks.
- 17. Discuss the significance of geological investigations for tunnel construction.

 $\mathbf{2}$

- 18. Explain opencast mining methods.
- 19. How groundwater problem affects the mining operations? Explain in detail.
- 20. Write an essay on the principles and scope of mineral processing.

3

Sub. Code
7MGE3E1

M.Sc. DEGREE EXAMINATION, NOVEMBER 2021.

Third Semester

Geology

Elective — REMOTE SENSING, GIS AND COMPUTATIONAL GEOLOGY

(CBCS – 2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

 $(10 \times 2 = 20)$

- 1. Define remote sensing.
- 2. What is Row and Swath?
- 3. Define IFOV.
- 4. What are the types of satellites?
- 5. Define Image restoration.
- 6. Define level slicing.
- 7. Define GIS.
- 8. Define Raster Data.
- 9. Define Digital image.
- 10. What is the Negative binomial distribution?

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

11. (a) Write a note on Stefan Boltzman's law.

Or

- (b) Describe active and passive remote sensing system.
- 12. (a) Give an account on photographic and charge couple devices.

Or

- (b) Write note on sensor and their resolutions.
- 13. (a) Define visual interpretation. Add note on elements of image interpretation.

 \mathbf{Or}

- (b) Give an account on contrast manipulation and contrast stretching.
- 14. (a) Describe Data analysis and manipulation in GIS.

Or

- (b) Write short note on the spatial data structure.
- 15. (a) Describe fundamentals and applications of MS Office.

Or

(b) Write short note on Baye's Theorem.

Part C (3 × 10 = 30)

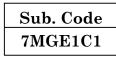
Answer any **three** questions.

16. Write an essay on energy interaction with the Earth surface's features.

 $\mathbf{2}$

- 17. Write an essay on Indian Space Programme: Past, Present and Future.
- 18. Explain about the Multispectral band ratioing and differencing and color space transformation.
- 19. Discuss about the interpretation of lithological and structural mapping.
- 20. Write detailed note on Poisson distribution, discrete random variable and Geometric distribution.

3



M.Sc. DEGREE EXAMINATION, NOVEMBER 2021

First Semester

Geology

GEOMORPHOLOGY AND MARINE GEOLOGY

(CBCS – 2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

 $(10 \times 2 = 20)$

- 1. Define Diastrophism.
- 2. List out two coastal and two fluvial landforms.
- 3. Erosion cycle.
- 4. Define Geomorphic cycle.
- 5. Shore line.
- 6. What are ocean currents?
- 7. Define pollution.
- 8. Longshore current.
- 9. List out any four effects of sea level rise.
- 10. What is metallic pollution?

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

11. (a) Write a short note on karst topography.

 \mathbf{Or}

- (b) Explain how lithology controls the geomorphological features.
- 12. (a) List out the five features of the Coastal Geomorphology and add a note on it.

Or

- (b) Give an account on Coastal Geomorphic features.
- 13. (a) What are submarine Canyons and how it is formed?

Or

- (b) Give an account on the four types of Erosion by rivers.
- 14. (a) Write a short essay on classification of marine environment.

Or

- (b) Write a brief note on the Chemical properties of sea water.
- 15. (a) Discuss the impact of radioactivity on coastal environments.

Or

(b) Give an account on the classification of deep sea sediments.

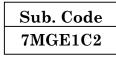
 $\mathbf{2}$

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

Answer any **three** questions.

- 16. Give a detailed account on the Limestone weathering and Karst Topography.
- 17. Detail the major geomorphic features of India.
- 18. Write an essay on alluvial landforms.
- 19. Write an essay on continental margin and shelf.
- 20. Write an essay on marine pollution and its effects.

3



M.Sc. DEGREE EXAMINATION, NOVEMBER 2021

First Semester

Geology

GEOTECTONICS AND STRUCTURAL GEOLOGY

(CBCS – 2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

 $(10 \times 2 = 20)$

- 1. Define Mobile zones.
- 2. What is Geosynclines?
- 3. Write a short note on Submarine Canyons.
- 4. Define Outcrop.
- 5. Write a short note on Bedding Fissility.
- 6. What is Mylonite?
- 7. Define Joints.
- 8. Write a short note on Structure Fabrics.
- 9. Write a note on the Types of Cleavage.
- 10. Define Tectonites.

Part B

 $(5 \times 5 = 25)$

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

11. (a) Describe the internal structure of the earth.

Or

- (b) Describe the mid oceanic ridges.
- 12. (a) Give the characteristics of Contours.

Or

- (b) Describe briefly on the types of Lineation.
- 13. (a) Give an account on Salt Domes.

Or

- (b) Define Tectonites. Explain their symmetry.
- 14. (a) Describe about the Origin of Minor structures with in Shear Zone.

Or

- (b) Explain the different types of Unconformities.
- 15. (a) Write brief note on Brunton Compass.

Or

(b) What are Cleavage and Schistosity? Describe the importance types of Cleavage.

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

Answer any three questions.

- 16. Write an essay on Plate Tectonics.
- 17. Write detailed notes on Foliation in rocks.

 $\mathbf{2}$

- 18. Write an essay on Techniques adopted in Petro Fabric analysis.
- 19. Describe the detailed noted on the distinguishing unconformities from Faults.
- 20. Describe in detailed notes on:
 - (a) The scope of Structure Geology.
 - (b) The preparation of a Geological report.

3



M.Sc. DEGREE EXAMINATION, NOVEMBER 2021

First Semester

Geology

Elective: ENVIRONMENTAL GEOLOGY AND DISASTER MANAGEMENT

(CBCS – 2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A $(10 \times 2 = 20)$

- 1. List out the uses of mining wastes.
- 2. Write a note on the Alternative Renewable energy sources?
- 3. What is bioaccumulation?
- 4. Write a short note on biosphere.
- 5. Define landslide.
- 6. What is an Earthquake?
- 7. List out the effects of deforestation.
- 8. List out the benefits of Volcanism?
- 9. List out the sampling methods for air pollution.
- 10. List the benefits of river flooding.

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

11. (a) Write an account on the environmental interaction between atmosphere and hydrosphere.

Or

- (b) Give an account on Sewage pollution.
- 12. (a) Discuss the causes and effects of Ozone depletion.

Or

- (b) Discuss on the pollutants types.
- 13. (a) Write an account on the hazard related to floods.

 \mathbf{Or}

- (b) Write a brief note in the Landslides causative factors.
- 14. (a) Bring out and explain any one international agreement on environment.

Or

- (b) What are the different disaster recovery approaches?
- 15. (a) Give an account on the soil contamination.

Or

(b) Give an account on the degradation of coastal environment.

 $\mathbf{2}$

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

Answer any **three** questions.

- 16. Write an essay on the concept and principle of environmental geology.
- 17. Give a details account on Global warming and its impact on the earth system.
- 18. Write an essay on water pollution and its effects on human health.
- 19. Describe the classification and distribution of soil in India.
- 20. Elaborate the impact of mining on the environment.

3

M.Sc. DEGREE EXAMINATION, NOVEMBER 2021

Third Semester

Geology

ECONOMIC GEOLOGY

(CBCS – 2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A $(10 \times 2 = 20)$

- 1. Define geothermometry.
- 2. What is supergene enrichment?
- 3. State gold distributions in India.
- 4. List the uses of barite.
- 5. Write the physical properties of refractories.
- 6. Name any four radioactive minerals.
- 7. Define mineral grade.
- 8. What is mean by mineral conservation?
- 9. Write a note on polished sections.
- 10. Define ore textures.

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

11. (a) Give a short account of the cavity filling deposit.

Or

- (b) Exemplify the end-use classification of mineral deposits.
- 12. (a) Write mode of occurrences of bauxite deposits.

 \mathbf{Or}

- (b) Describe iron ore distributions in India.
- 13. (a) Mention the chemical and physical properties of mineral pigments.

 \mathbf{Or}

- (b) Elucidate the characteristics of precious minerals.
- 14. (a) Describe the significance of minerals in the national economy.

Or

- (b) Write note on strategic and Critical minerals with the status in India.
- 15. (a) State the procedure for polishing and mounting of ores.

 \mathbf{Or}

(b) Explicate optical properties of ore minerals.

 $\mathbf{2}$

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

Answer any **three** questions.

- 16. Discuss the sedimentation process of mineral formations.
- 17. Write an essay on copper deposits regarding its origin, Indian distribution and uses.
- 18. Mention abrasives minerals and detail out their occurrences and distribution in India.
- 19. Explain Orissa estimation techniques.
- 20. Discuss taxes and the role for understanding the paragenesis of ore minerals.

3