**A–10054**

**Sub. Code**
**4BGE1C2**

**B.Sc. DEGREE EXAMINATION, APRIL 2021 &**

**Supplementary / Improvement / Arrear Examinations**

**First Semester**

**Geology**

**GEOMORPHOLOGY**

**(CBCS – 2014 onwards)**

Time : 3 Hours Maximum : 75 Marks

**Part A** (10 × 2 = 20)

Answer **all** questions.

1. Define : Weathering.
2. What is Mass wasting?
3. What is the difference between springs and Geysers?
4. Define : Kerst topography.
5. What is Base lend of Erosion?
6. What is river meandering?
7. What are glaciers?
8. List out four glacial landforms.
9. What is submarine canyon?
10. Define : Guyots.

## Part B (5 × 5 = 25)

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

11. (a) Discuss in brief about geomorphic agents and their role in degradation processes.

Or

(b) Brief about climatic influences on weathering.

12. (a) Discuss on Aeolian landform with simple sketches.

Or

(b) Write about the Hot-springs and Geysers.

13. (a) Give a note on the development of river valleys.

Or

(b) Discuss about river capture with simple diagram.

14. (a) Write about glacial epohs.

Or

(b) Explain about glacial ablation and calving.

15. (a) Discuss about the types of shorelines.

Or

(b) Write about lake deposits.

## Part C (3 × 10 = 30)

Answer any **three** questions.

16. Write an essay on classification of relief features.

17. Give a detailed note on Geological works and landforms produced by ground water.

18. Discuss about landform produced by fluid processes.

19. Write about the geological actions and landforms developed by Glacier.

20. Give a note on the landform produced by marine processes.

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| A–10055 | Sub. Code |
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| | 4BGE2C1 |

**B.Sc. DEGREE EXAMINATION, APRIL 2021 &**

**Supplementary/Improvement/Arrear Examinations**

**Second Semester**

**Geology**

**PALAEONTOLOGY AND GENERAL STRATIGRAPHY**

**(CBCS – 2014 onwards)**

Time : 3 Hours Maximum : 75 Marks

**Part A** (10 × 2 = 20)

Answer **all** questions.

1. Define Index fossil.
2. What is aperture and protoconch in Gastropoda?
3. What is glabella?
4. Define graptozoa.
5. What is Corallite and Corallum?
6. Define genital and ocular plates.
7. Define coiling pattern in foraminifera.
8. What is the age if sponges?
9. Define stage.
10. What are the important events in Mesozoic era?

## Part B (5 × 5 = 25)

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

11. (a) Write the description of the following fossils

(i) Arca

(ii) Murex

Or

(b) Write note in shapes of branchiopod volves.

12. (a) Describe the classification of graptoloidea.

Or

(b) Write the description of the following fossils

(i) Paradoxides

(ii) Ptilophyllum.

13. (a) Describe the morphology of blastoidea.

Or

(b) Write the description of the following fossils

(i) Calceola

(ii) Marsupites

14. (a) Give an account on classification of sponges.

Or

(b) Write the applications and uses of microfossils.

15. (a) Write a note on principles of stratigraphy.

Or

(b) Write an account on homotaxis.

**Part C** (3 × 10 = 30)

Answer any **three** questions.

16. Write in detail about morphology of Cephalopoda.

17. Give detail account on morphology and classification of trilobite.

18. Write in detail about morphology and classification of crinoidea.

19. Write in detail about morphology and classification of foraminifera.

20. Describe in detail about various stratigraphic classification.

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| A–10058 | Sub. Code |
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| | 4BGEE1A |

**B.Sc. DEGREE EXAMINATION, APRIL 2021 &**

**Supplementary / Improvement / Arrear Examinations**

**Fifth Semester**

**Geology**

**Elective – FIELD GEOLOGY**

**(CBCS – 2014 onwards)**

Time : 3 Hours Maximum : 75 Marks

**Part A** (10 × 2 = 20)

Answer **all** questions.

1. Define fossil.
2. Define drilling.
3. Define dip.
4. Define map.
5. Define vertical thickness.
6. Define relation between true and vertical thickness.
7. Define chip sampling.
8. Define purity contamination.
9. Define map references.
10. Define orienting the map.

## Part B (5 × 5 = 25)

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

11. (a) Write note on estimation of ore reserves.

Or

(b) Give a brief account on pitting and trenching method.

12. (a) Write note on true dip, apparent dip and their relationship.

Or

(b) Write note on study of contouring and its significance.

13. (a) Give note on repetition of outcrops.

Or

(b) Write note on calculation of true thickness from the field data.

14. (a) Describe Brunton compass and its uses.

Or

(b) Write note on channel and drill hole sampling.

15. (a) Give an account on Topographic map.

Or

(b) Write note on.

(i) Scale of map

(ii) Locating position of outcrop.

## Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Explain the importance of field geology. As a field geologist what are the important tasks, Equipments and places you should look out for your investigation.

17. Discuss influence of dip and ground slope on outcrops.

18. Write a detailed note on true and vertical thickness of beds, their measurement in the field and their relationship with each other.

19. Explain methods of preparation of geological report.

20. Give a detailed note on outline of preparation of geological map.

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**A–9735**

| Sub. Code |
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| 4BGE4C1 |

**B.Sc. DEGREE EXAMINATION, APRIL 2021 &**

**Supplementary/Improvement/Arrear Examinations**

**Fourth Semester**

**Geology**

**INDIAN STRATIGRAPHY**

**(CBCS – 2014 onwards)**

Time : 3 Hours Maximum : 75 Marks

**Part A** (10 × 2 = 20)

Answer **all** questions.

1. Define Homotaxis.

2. Name few Dharwarian rocks.

3. Eparchaean unconformity.

4. Define Cretaceous rocks.

5. Name the rocks in the Lameta group.

6. Importance of Siwaliks.

7. What is the geological significance of Permocarbaniferous rocks in India?

8. Which is the Vindhyan equivalents in Peninsular India?

9. List out the economic importance of Cuddapha.

10. Define inter trappean beds.

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

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

11. (a) Write a brief note on comparative study of physiographic divisions of India.

Or

(b) Write a short note about economic importance of Archaean rocks of Peninsula India.

12. (a) Sketch out the stratigraphic sequence in the Spiti valley.

Or

(b) Give a brief note on various characteristics and economic importance of Vindhyans.

13. (a) Give a brief account on Umaia marine beds.

Or

(b) Describe salt range with reference to various geologic time units.

14. (a) Give a brief account on various divisions and climatic conditions of Gondwanas.

Or

(b) Bring out the character and divisions of Jurassic of Kutch.

15. (a) Elaborate note on Cuddalore sandstone.

Or

(b) Describe the conditions of deposition of Siwalik system.

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

Answer any **three** questions.

16. Explain Triassic of spiti.

17. Explain in detail about character and description about Cuddapah system.

18. Discuss about the stratigraphy with reference to Dharwars and its economic importance.

19. Enumerate in detail about characteristics an description on Cretaceous of Trichy.

20. Enumerate in detail about age problem of Deccan trap and intra trappean beds.

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**A–9736**

**Sub. Code**
**4BGE4C2**

**B.Sc. DEGREE EXAMINATION, APRIL 2021 &**

**Supplementary/Improvement/Arrear Examinations**

**Fourth Semester**

**Geology**

**STRUCTURAL GEOLOGY**

**(CBCS – 2014 onwards)**

Time : 3 Hours Maximum : 75 Marks

**Part A** (10 × 2 = 20)

Answer **all** questions.

1. Define secondary structure with example.
2. Define strike and dip.
3. Define compressive and tensile stress.
4. Define syncline folds.
5. What is Reverse fault?
6. What is hanging and food wall?
7. Define Joints.
8. Define outliers and inliers.
9. What is meant by Unconformities?
10. List the uses of Brunton Compass.

## Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write short note on geological map and their importance.

Or

(b) Give a short note on the relation between true and apparent dip with neat sketch.

12. (a) Write a short note on three stages of deformation of rocks.

Or

(b) Write about description of recumbent fold with neat sketch.

13. (a) Write a short note on terminology of faults with neat sketch.

Or

(b) Describe the criteria for recognition of faults in the fields.

14. (a) Write a note on relation of joints to other structure

Or

(b) Write a short note on recognition of joints in the field and their effect on outcrops.

15. (a) Write a short note on general characteristics of an Unconformities.

Or

(b) Write a short note on clinometers compass and their uses.

## Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Write an essay on methods of representing physiographic feature.

17. Explain the various types of folds with neat sketches.

18. Write an essay on geometrical and genetics classification of faults.

19. Give a detailed account on joints and their classification.

20. Write an essay on methods of sampling and preparation of geological report.

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| A–9737 |
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| Sub. Code |
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| 4BGE5C1 |

**B.Sc DEGREE EXAMINATION, APRIL 2021 &**
**Supplementary/ Improvement/ Arrear Examinations**

**Fifth Semester**

**Geology**

**IGNEOUS PETROLOGY**

**(CBCS – 2014 onwards)**

Time : 3 Hours Maximum : 75 Marks

**Part A** (10 × 2 = 20)

Answer **all** questions.

1. Define lava
2. Give examples for concordant forms
3. Define structure
4. Define porphyritic texture
5. What is solid solution?
6. Define volatile constituents
7. What are the major mineral composition in gabbro?
8. Define diorite.
9. Give examples for femic minerals
10. Give examples for volcanic rocks.

## Part B (5 × 5 = 25)

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

11. (a) Brief note on comparative study of the characteristics of igneous, sedimentary and metamorphic rocks.

Or

(b) Write note on primary magmas

12. (a) Brief about structures formed due to mobility of magma

Or

(b) Describe the structures formed due to cooling of magma

13. (a) Write note on crystallization of unicomponent magma

Or

(b) Write note on petrographic provinces

14. (a) Describe the megascopic classification of igneous rocks

Or

(b) Write the classification of igneous rocks based on colour index

15. (a) Write the petrographic characters and origin of Anorthosites

Or

(b) Describe the petrographic characters of alkaline rocks

## Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Write in detail about discordant forms of igneous rocks

17. Give detailed account on kinds of textures

18. Write in detail about Bowen's reaction principle

19. Discuss in detail about classification of igneous rocks based on chemistry, mineralogy and $SiO_2$

20. Write in detail about the petrographic characters and origin of pegmatites

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| A–9738 |
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| Sub. Code |
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| 4BGE5C2 |

**B.Sc. DEGREE EXAMINATION,APRIL 2021 &**

**Supplementary/Improvement/Arrear Examinations**

**Fifth Semester**

**Geology**

**SEDIMENTARY AND METAMORPHIC PETROLOGY**

**(CBCS – 2014 onwards)**

Time : 3 Hours Maximum : 75 Marks

**Part A** (10 × 2 = 20)

Answer **all** questions.

1. Define Argilaceous.
2. Define non-elastic texture.
3. What is a residual deposit?
4. What is soil?
5. Define siderite.
6. What is guano?
7. Define metamorphism.
8. Define palingenesis.
9. What is injection metamorphism?
10. What is metasomatism?

## Part B (5 × 5 = 25)

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

11. (a) Write short note on diagenesis.

Or

(b) Give an account on sedimentary process.

12. (a) Write short note on terrarosa

Or

(b) Write short note on mineral composition and texture of Plastic deposit.

13. (a) Write short note on chemical deposits.

Or

(b) Describe rock salt.

14. (a) Write is brief about cataclastic metamorphism and its products.

Or

(b) Write brief note on migmatites.

15. (a) Give short note on pneumatolytic metamorphism.

Or

(b) Describe dynamothermal metamorphism and its products.

## Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Give a broad outline on structure of sedimentary rock with neat sketch.

17. Discuss the study of conglomerate and sandstone.

18. Give a brief study on the following.

    (a) Flint

    (b) Siderite

    (c) Caliche

19. Discuss grade and zones of metamorphism.

20. Explain petrographic description of the following.

    (a) Marble

    (b) Charnockites

    (c) Gneiss

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| A–9739 | Sub. Code |
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| | 4BGEE2A |

**B.Sc DEGREE EXAMINATION, APRIL 2021 &**

**Supplementary/Improvement/Arrear Examinations**

**Fifth Semester**

**Geology**

**Elective — HYDROGEOLOGY AND ENGINEERING GEOLOGY**

**(CBCS – 2014 onwards)**

Time : 3 Hours Maximum : 75 Marks

**Part A** (10 × 2 = 20)

Answer **all** questions.

Each answer should be in a word or sentence.

1. Define water table.
2. Define zone of saturation.
3. Define permeability.
4. Define laminar flow.
5. Define BIS and WHO
6. Define biological quality of ground water.
7. What is tensile strength,?
8. Define tunnel
9. What is confined aquifer?
10. Define artesian well.

## Part B (5 × 5 = 25)

Answer **all** questions.

Each answer should be in about 250 words.

11. (a) Describe types of aquifer.

Or

(b) Write about the origin of ground water.

12. (a) Give an account on the properties of rock

Or

(b) Describe rock properties and its relation to groundwater.

13. (a) Describe the physical and chemical qualities of ground water.

Or

(b) Write note on Groundwater in Tamilnadu.

14. (a) Give an account on the properties of building stone.

Or

(b) Write note on prevention of landslide.

15. (a) Describe the geological investigations of Dam sites.

Or

(b) Give a brief note on coastal erosion.

## Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Explain the vertical distribution and occurrence of ground water with neat sketch.

17. Write an essay on ground water movement.

18. Explain in detail about ground water exploration through electrical resistivity.

19. Explain the engineering properties of rocks.

20. Explain the geological investigations and problems during tunneling.

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**A–10340**

**Sub. Code**
**4BGE3C1**

**B.Sc. DEGREE EXAMINATION, APRIL 2021 &**
**Supplementary/Improvement/Arrear Examinations**

**Third Semester**

**Geology**

**CRYSTALLOGRAPHY AND OPTICAL MINERALOGY**

**(CBCS – 2014 onwards)**

Time : 3 Hours Maximum : 75 Marks

**Part A** (10 × 2 = 20)

Answer **all** the questions.

1. What is Interfacial angle?

2. Define Open and Closed forms.

3. Define Hexagonal system.

4. Define Sphenoids.

5. Define Monoclinic and Triclinic system.

6. Define Twinning.

7. Define Polarization.

8. Define Brewster's law.

9. Define Birefringence.

10. Define Dichroism.

## Part B (5 × 5 = 25)

Answer **all** the question. Choosing either (a) or (b).

11. (a) Write about Weiss and Miller indices system.

Or

(b) Give short note on element of symmetry?

12. (a) Describe different types of crystal forms.

Or

(b) Write short note on Tripyramidal and Rhombohedral hemimorphic class of hexagonal System.

13. (a) Give an account on different kind of twinning?

Or

(b) Describe twin laws pertaining Gypsum and pyrite.

14. (a) Explain about the Double refraction?

Or

(b) Write note on optic accessories.

15. (a) Write about optic sign and sign of Elongation.

Or

(b) Give note on Extinction direction.

## Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Discuss about crystal structure and morphological characters of crystal.

17. Discuss about symmetry elements and forms of tetragonal system.

18. Write in detail about imperfection and irregularities in crystals.

19. Discuss about an examination of minerals in polarized light.

20. Explain about interference Color and the order of interference colors?

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| A–10341 | Sub. Code |
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| | 4BGE3C2 |

**B.Sc. DEGREE EXAMINATION, APRIL 2021 &**
**Supplementary/Improvement/Arrear Examinations**

**Third Semester**

**Geology**

**MINERALOGY**

**(CBCS – 2014 onwards)**

Time : Three Hours Maximum : 75 Marks

**Part A** (10 × 2 = 20)

Answer **all** questions.

1. What is Play of color and give an example?

2. Differentiate "opalescence "&"iridescence".

3. What is chalcedony?

4. What is "Lodestone"?

5. List out the plagioclase feldspars.

6. Define selenite.

7. What is the difference between ortho and clino pyroxenes?

8. Bauxite is a mixture of ____, _____ Minerals?

9. Define Andalusite.

10. What is the chemical composition of staurolite?

## Part B (5 × 5 = 25)

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

11. (a) Describe chemical properties of Minerals.

Or

(b) Give a short note on physical properties of Minerals

12. (a) Write a short note on feldspathoid group.

Or

(b) Give short note on silica group of minerals.

13. (a) Write a note on Scapolites

Or

(b) Write short note on physical and optical properties of Wollastonite.

14. (a) Give brief note on pyrrhotite.

Or

(b) Give short note on Amphibole group of minerals.

15. (a) Describe about Sphene.

Or

(b) Differentiate Antigorite and Chrysotile.

## Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Write in detail about the methods involved in the estimation of Specific gravity?

17. Discuss about the structure of silicates with neat sketch.

18. Give a detailed account on physical and optical properties, chemical composition and mode of occurrence of the Rhodonite groups.

19. Discuss about Garnet group of minerals.

20. Write an essay on Physical, optical properties and mode of occurrence of olivine group of minerals.

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| A–9688 |
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| Sub. Code |
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| 4BGE6C1 |

**B.Sc. DEGREE EXAMINATION, APRIL 2021 &**

**Supplementary/Improvement/Arrear Examinations**

**Sixth Semester**

**Geology**

**ECONOMIC GEOLOGY**

**(CBCS – 2014 onwards)**

Time : 3 Hours Maximum : 75 Marks

**Part A** (10 × 2 = 20)

Answer **all** questions.

1. Define Ore with examples.
2. Define tenor.
3. Define geologic thermometer.
4. Define ore localizations.
5. Write two ores of Aluminium.
6. Define native Copper.
7. What are the raw materials needed for cement manufacturing?
8. What are the germs varieties of corundum?
9. Define lignite.
10. Define fossil fuel.

## Part B (5 × 5 = 25)

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

11. (a) Give a brief note on placer deposits.

Or

(b) Describe hydrothermal deposits.

12. (a) Write note on metallogenic epochs.

Or

(b) Give short note on structural ore deposits.

13. (a) Write short note on occurrence of gold.

Or

(b) Give a brief account on manganese deposits of India.

14. (a) Write short note on ceramics.

Or

(b) Give an account on refractory deposits of India.

15. (a) Write in brief about various types of stratigraphic traps.

Or

(b) Write short note on mineral wealth of Tamil Nadu.

## Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Write an essay on process of formation of mineral deposits.

17. Write detail account on classifications of ore deposits.

18. Discuss about the composition, mode of occurrence, uses and distribution of iron ore.

19. Discuss about the raw materials needed, mode of occurrence, uses and distribution for glass industry.

20. Give detail account on origin of coal.

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| A–9689 | Sub. Code |
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| | 4BGE6C2 |

**B.Sc. DEGREE EXAMINATION, APRIL 2021 &**

**Supplementary/Improvement/Arrear Examinations**

**Sixth Semester**

**Geology**

**REGIONAL GEOLOGY**

**(CBCS – 2014 onwards)**

Time : 3 Hours Maximum : 75 Marks

**Part A** (10 × 2 = 20)

Answer **all** questions.

1. Define Western Ghats and its extension.
2. List of river flowing through Eastern Ghats.
3. Define Anorthosite.
4. Define Archean formations.
5. Define Ferricrete of Sriperumbudur beds.
6. Write about Damuda group.
7. What are the precius stones found in Tamil Nadu?
8. Define Cuddalore sandstone.

9. What are the four types of Iron ores?

10. Write about Gauthimalai iron ore.

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

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

11. (a) Give a brief note on structural aspects of Eastern Ghats.

Or

(b) Describe geomorphology of Tamilnadu.

12. (a) Give short note on Cordierite Sillimanite rock,of Trichy.

Or

(b) Write note on Kadavur mineral deposits.

13. (a) Write short note on Pondicherry Group.

Or

(b) Give brief account on Cenomanian Marine Regression.

14. (a) Write short note on Neyveli Lignite deposits.

Or

(b) Give an account on various types of sandstones available in Tamilnadu.

15. (a) Write in brief about mode of occurrence of Graphite beds of Sivaganga.

Or

(b) Write short note on origin of Iron ores of Kanjamalai.

## Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Discuss about the Physiography and soilt types of Tamilnadu

17. Write detail note on.

    (a) Alkali rocks of Sivanmalai

    (b) Charnockite of Pallavarm

18. Discuss about the Cretaceous of Trichinapoly deposits.

19. Discuss about the mode of occurrence and distribution of precious and semi- precious stones in Tamil Nadu.

20. Give detail account on origin, occurrence and distribution of Bauxite ore in Tamil nadu.

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| A–9690 | Sub. Code |
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| | 4BGEE3A |

**B.Sc. DEGREE EXAMINATION, APRIL 2021 &**

**Supplementary/Improvement/Arrear Examinations**

**Sixth Semester**

**Geology**

**ELECTIVE- PHOTOGEOLOGY, REMOTE SENSING, GIS AND MINING GEOLOGY**

**(CBCS – 2014 onwards)**

Time : 3 Hours Maximum : 75 Marks

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

Answer **all** questions.

1. Define mosaics.
2. Define annotation of photographs.
3. Define Landform.
4. List any two significant points on remote sensing in study of lithology.
5. Define remote sensing platforms.
6. Define multispectral scanning
7. Define GIS and its uses.
8. What is Topology?
9. Define shaft.
10. Define assay value.

## Part B (5 × 5 = 25)

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

11. (a) Write note on types of films and filters.

Or

(b) Write note on scale and its type.

12. (a) Describe the application of aerial photograph in geological studies.

Or

(b) Write short note on application of remote sensing in mineral exploration.

13. (a) Give an account on sensors and its types.

Or

(b) Write short note on scope of remote sensing

14. (a) Write note on spatial data analysis.

Or

(b) Give an account on hardware and software.

15. (a) Describe conservation of minerals

Or

(b) Write note on strategic, critical and essential minerals.

## Part C (3 × 10 = 30)

Answer any **three** questions.

16. Give a detail account on stereoscope and steropair.

17. What is Aerial photo interpretation? Give a detail note on analysis based on landsform and vegetation.

18. Discuss about interaction of Electromagnetic spectrum with Atmosphere with neat sketches.

19. Write a detailed note on Raster and vector data models.

20. Explain surface mining methods with suitable diagrams.

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