Reg. No. | | | | | | | | |

MGE 508

III Semester M.Sc. Degree Examination, April 2021
(CBCS) (Optional Paper)
MARINE GEOLOGY
Ocean and Atmospheric Science (Open Elective)

Time : 3 Hours Max. Marks : 70

***Instruction** : Answer **all** the questions.*

I. Define/state the following : **(1×10=10)**

1) Wave
2) Tidal range
3) Greenhouse gases
4) Thermocline
5) Oxygen isotopes
6) Plankton
7) Mid-ocean ridge
8) Petroleum
9) Tropical region
10) Placer minerals.

II. Write short notes on **any five** of the following : **(5×4=20)**

11) Ocean circulation
12) Tides and their significance
13) Stratosphere
14) Red-ox sensitive elements in seawater
15) Estuarine chemical process
16) Human impacts on atmosphere
17) Petroleum resource
18) Climate change.

P.T.O.

III. Write short notes on **any four** of the following : **(4×5=20)**

19) Constancy of ionic composition of seawater.

20) Sea-floor morphology.

21) Benthic life on ocean floor.

22) Diversity index.

23) Metalliferous sediments.

24) Plate tectonics.

IV. Write descriptive notes of the following : **(2×10=20)**

25) What is residence time ? Explain how it is estimated for different types of elements and their significance in the ocean.

OR

Discuss the structure and composition of the atmosphere. Explain the properties of different atmospheric layers.

26) What are marine minerals ? How do they form the ocean and their importance ?

OR

What is the coastal zone ? Discuss how the coastal protection and management are performed.

Reg. No. | | | | | | | | |

MGS 505

Third Semester M.Sc. Degree Examination, April 2021
(CBCS)
MARINE GEOLOGY
GIS and GPS

Time : 3 Hours | Max. Marks : 70

I. Define/state the following : **(10×1=10)**

1) Topology
2) Geo-rectification
3) Time variant data
4) Tuple
5) GCP
6) Topology
7) NAVSTAR
8) Multipath interference
9) Accuracy
10) Geoid.

II. Write short notes on **any five** of the following : **(5×4=20)**

11) DBMS
12) Mode of digitization
13) Steps in network analysis
14) Map features
15) Vector data model
16) Boolean operation
17) Grid operations in GIS
18) GPS signals.

P.T.O.

III. Answer **any four** of the following : **(4×5=20)**

19) UTM system

20) Vector overlay analysis

21) Components of GIS

22) Non-spatial data models

23) Obvious sources of errors

24) Factors affecting GPS signals.

IV. Write descriptive note of the following : **(2×10=20)**

25) What is map projection ? Give a detailed account on different types of projections in GIS.

OR

Discuss in detail the role of GIS in planning and managing natural disaster management.

26) Give a detailed account of tools in GIS that are useful in 3D analysis.

OR

What is GPS ? Give an account on GPS applications in different field.

Reg. No.

MGS 504

Third Semester M.Sc. Degree Examination, April 2021
(CBCS)
MARINE GEOLOGY
Economic Geology and Mining Geology

Time : 3 Hours Max. Marks : 70

***Instruction** : Answer **all** the questions.*

I. Define/state the following : **(10×1=10)**

1) Adit
2) Shaft
3) Beryl
4) Stockwork
5) Minerals used in cement industry
6) Garnet
7) Vein
8) Mine support
9) Crude oil
10) Lignite.

II. Write short notes on **any five** of the following : **(5×4=20)**

11) Underground mining methods
12) Origin and occurrence of copper mineral deposits
13) Kaoline mining
14) Metallogenic epochs of India
15) Minerals used in fertilizer industry
16) Abrasives
17) Renewable mineral resources
18) Petroliferous basins of India.

P.T.O.

III. Answer **any four** of the following : **(4×5=20)**

19) Alluvial mining techniques.

20) Mine ventilation.

21) Ores of iron.

22) Refractory minerals.

23) Diamond deposits.

24) Minerals used in chemical industry.

IV. Answer the following : **(2×10=20)**

25) Discuss in detail various theories of ore genesis with suitable examples.

OR

Explain different types of coal mining methods with suitable diagrams.

26) Discuss in detail the origin and classification of petroleum and natural gas deposits of India.

OR

Elaborate the origin and ranking of coal deposits of India.

Reg. No. | | | | | | | | |

MGS 503

Third Semester M.Sc. Degree Examination, April 2021
MARINE GEOLOGY
Exploration and Engineering Geology

Time : 3 Hours | Max. Marks : 70

I. Define/state the following : **(10×1=10)**

1) Resistivity
2) Cut and fill
3) Grouting
4) Seismograph
5) Porosity
6) Geophone
7) Spillways
8) Ore grade
9) Tunnel
10) Path finder element.

II. Write short notes on **any five** of the following : **(5×4=20)**

11) Magnetic methods of prospecting
12) Scope of exploration geology
13) Major civil engineering structures
14) Marine surveys
15) Geochemical indicators
16) Concept of rock and soil mechanism
17) Applications of Echosounder
18) Problems of ground water in engineering projects.

P.T.O.

III. Answer **any four** of the following : **(4×5=20)**

19) Airborne method in exploration of groundwater.

20) Engineering properties of rock.

21) Radioactive prospecting techniques.

22) Characteristics of building materials.

23) Different methods in geological exploration.

24) Plant as an indicator of ore deposits.

IV. Write descriptive note of the following : **(2×10=20)**

25) Discuss in detail the onshore and offshore methods in fossil fuel exploration.

OR

What is well logging ? How this technique is useful in subsurface structure studies ?

26) Discuss the various geological criteria used to identify the mineral deposits.

OR

Discuss the role of an engineering geologist in the construction of reservoirs in various terrain.

Reg. No. | | | | | | | | |

MGH 502

Third Semester M.Sc. Degree Examination, April 2021
(CBCS)
MARINE GEOLOGY
Oceanography – II
(Geological and Biological)

Time : 3 Hours Max. Marks : 70

I. Define ~~any five~~ all of the following : **(10×1=10)**

1) Sea stacks
2) Terrigenous deposits
3) Turbidites
4) Bedded phosphorites
5) Abyssal plane
6) Seamounts
7) Manganese nodules
8) Phytoplankton
9) Estuary
10) D. O. Meter.

II. Write short notes on **any five** of the following : **(5×4=20)**

11) Ocean basins
12) Sea level changes
13) Tidal energy resources
14) Polymetallic nodules
15) International seabed authority
16) Pollution in the marine environment
17) Hydrothermal vent community
18) Macrobenthos in ocean.

P.T.O.

III. Answer **any four** of the following : **(4x5=20)**

19) Neotectonic process

20) Cosmogenous sediments

21) Factors affecting OTEC

22) Hydrothermal sulfide deposits

23) Environment of placer mineral deposition

24) Ostracods and dinoflagellites.

IV. Write descriptive notes on **any two** of the following : **(2x10=20)**

25) Give a detailed account of classification of coast. Add a note on coastal morphology.

OR

Describe the reconstruction of monsoon variability by using proxy records.

26) Give an account on classification of marine environment and marine organisms.

OR

Discuss the physic-chemical factors that are affecting marine life.

Reg. No. | | | | | | | | |

MGH 501

Third Semester M.Sc. Degree Examination, April 2021
(CBCS)
MARINE GEOLOGY
Oceanography – I
(Physical and Chemical)

Time : 3 Hours Max. Marks : 70

***Instruction** : Answer **all** the questions.*

I. Define/state the following : **(10×1=10)**

1) Wave amplitude
2) Longshore currents
3) Tidal range
4) Sverdrup
5) La Nina
6) Secondary inputs of elements to the ocean
7) Particulate matter in the ocean water
8) Radionuclides
9) Conservative elements
10) Alkalinity of sea water.

II. Write short notes on **any five** of the following : **(5×4=20)**

11) Fully developed sea
12) Seawalls
13) Importance of estuaries
14) Upwelling and sinking
15) Primary inputs of elements to oceans
16) Sediment-water interface
17) Distribution of gases in the oceans
18) Constancy of ion composition of sea water.

P.T.O.

III. Answer **any four** of the following : **(4x5=20)**

19) Internal waves and standing waves.

20) Constant currents of Indian Ocean.

21) Diurnal and semidiurnal tides.

22) Chemical exchanges between rivers and sea.

23) Sedimentary particles scavenging in the oceans.

24) Carbon dioxide-carbonate system in the ocean.

IV. Write descriptive notes on **any two** of the following : **(2x10=20)**

25) Discuss on tides and tidal currents. Add a note on types of tides and uses of tides.

OR

Coastal processes and their impact on shoreline changes.

26) Explain the principles and processes that regulate the composition of seawater.

OR

Ionic interactions; cycling and air-sea exchange of important biogenic dissolved gases.

Reg. No. | | | | | | | | | |

GIE 508

III Semester M.Sc. Degree Examination, April 2021
(CBCS)
GEOINFORMATICS
Geoinformatics of Coastal Environment (Open Elective)

Time : 3 Hours Max. Marks : 70

I. Define **any five** of the following : **(5×2=10)**

1) Spit
2) Mangroves
3) OCM
4) Atmospheric windows
5) Attribute data
6) Fiducial marks
7) Aspect.

II. Write short notes on **any five** of the following : **(4×5=20)**

8) Advantages of microwave remote sensing.
9) Geomorphology of coasts.
10) Ports and Harbours.
11) Bathymetry.
12) Amendments to the CRZ norms.
13) GIS design and management.
14) Resource sat.

III. Answer **any four** of the following : **(5×4=20)**

15) Discuss the spectral reflectance of soil and water.
16) Write a note on satellite oceanography.
17) Explain CRZ-I and CRZ-II.
18) Explain topographic maps and naval hydrographic charts.
19) Discuss the data structures used in GIS.

P.T.O.

IV. Essay type questions : **(2×10=20)**

20) Explain in detail about coastal zones. Add a note on different geological actions on coastal shores and their resultant landforms.

OR

Discuss the applications of remote sensing and GIS in generation of coastal information system.

21) Give an account of mangroves, their types and importance in protecting coastal erosion.

OR

Write a detailed note on Indian Space Program.

Reg. No. | | | | | | | | | |

GIS 505

Third Semester M.Sc. Degree Examination, April 2021

~~GEOINFORMATICS~~

~~Applied Geoinformatics~~

Computer Programming

Time : 3 Hours Max. Marks : 70

I. Define **any five** of the following : **(2×5=10)**

1) Drip irrigation.
2) Urban heat island.
3) Pollution.
4) Slum.
5) Food crisis.
6) Kharif and Rabi.
7) Urban sprawl.

II. Write short notes on **any five** of the following : **(4×5=20)**

8) Types of agriculture.
9) Urbanism.
10) GPS in urban planning.
11) Globalization and its impacts on agriculture.
12) Solid waste management in cities.
13) Urban Development policies.
14) Agriculture growth and development of a nation.

III. Answer **any four** of the following : **(5×4=20)**

15) Write a note on origin and growth of urbanization.
16) Give an account of RS and GIS in village information system.
17) Describe the regional and multi level planning in urban growth.
18) Write a note on RS and GIS applications in watershed management.
19) Write a note on surface temperature analysis using Geoinformatics.

P.T.O.

GIS 505

(10×2=20)

IV. Essay type questions :

20) Describe in detail about urban development and its major problems in the world.

OR

Give a detailed account on rural development practices in India with a case study.

21) Describe the role of geoinformatics in farming and agriculture management.

OR

Explain how to use RS and GIS as a tool for socio economic information analysis.

Reg. No. | | | | | | | | | |

GIS 504

III Semester M.Sc. Degree Examination, April 2021
(CBCS)
~~GEOINFORMATICS~~
Disaster Management
RS and GIS in Agriculture and Forestry

Time : 3 Hours Max. Marks : 70

I. Define **any five** of the following. **(5×2=10)**

1) Debris flow
2) Epicenter
3) Forest fire
4) Flash floods
5) Volcanoes
6) Tsunami
7) Land subsidence.

II. Write short notes on **any five** of the following. **(5×4=20)**

8) Rehabilitation programs.
9) Sanitation measures in disasters.
10) Functions of NGO's.
11) Preparedness and mitigation measures for cyclone.
12) Issues and concerns for various causes of disasters.
13) Hygienic measures taken during disasters.
14) Geological hazards.

III. Answer **any four** of the following. **(4×5=20)**

15) Write in detail on risks and vulnerabilities.
16) Explain the role of voluntary agencies in disaster management.
17) Explain disaster management cycle.
18) Write a note on landslides and their types.
19) Write a note on post disaster relief and logistic management.

P.T.O.

GIS 504

(2×10=20)

IV. Essay type questions.

20) Discuss the role of remote sensing in disaster management.

OR

Explain in detail about Sanitation measures in disasters.

21) Give a detailed account of vulnerability and mitigation measures for various disasters.

OR

Write an essay on :

i) Military and paramilitary forces during disaster

ii) Role of emergency centre.

Reg. No. | | | | | | | | | |

GIS ~~GIH~~ 503

III Semester M.Sc. Degree Examination, April 2021

(CBCS)

~~**GEOINFORMATICS**~~

~~**Cartography**~~

RS & GIS in Urban Planning and Disaster Management

Time : 3 Hours Max. Marks : 70

I. Define **any five** of the following : **(5×2=10)**

1) Map scale
2) Cylindrical projection
3) DOT maps
4) DGPS
5) Index contour
6) DEM
7) Geoid.

II. Write short notes on **any five** of the following : **(5×4=20)**

8) Importance of cadastral records.
9) Geographic coordinate system.
10) DOT and multi DOT maps.
11) Spheroid and spheres.
12) ASTER and SRTM DEM.
13) Evolution of cartography.
14) Model flow charting.

III. Answer **any four** of the following : **(4×5=20)**

15) Write a note on cartographic symbols.
16) What is TIN ? Add a note on its applications and uses.
17) Give an account of modern cartography.
18) Explain Indian geodetic system.
19) Write a note on inductive and deductive models.

P.T.O.

IV. Essay type questions : **(2×10=20)**

20) What is a map projection ? Explain different types of map projections.

OR

Explain topographical map and naval hydrographic chart.

21) What are cartographic themes ? Describe choroschematic and chorochromatic maps.

OR

Give a detailed account of satellites used in the generation of cartographic maps.

Reg. No. | | | | | | | | | |

GIH 502

Third Semester M.Sc. Degree Examination, April 2021

~~**GEOINFORMATICS**~~

~~**Marine Geoinformatics**~~ RS & GIS in Land and water Resources

Time : 3 Hours Max. Marks : 70

I. Define **any five** of the following : **(2×5=10)**

1) Lagoons.
2) Counter current.
3) Brackish water.
4) Desalinization.
5) Echo sounder.
6) Shore.
7) Cuspate beaches.

II. Write short notes on **any five** of the following : **(4×5=20)**

8) Surface currents.
9) Characteristics of IRS-P4 including OCM/MSMR.
10) Retrieval of Chl-a and TSM.
11) Mangrove environment.
12) Coastal landforms.
13) Mapping of Morpho-ecosystems.
14) Classification of coast.

III. Answer **any four** of the following : **(5×4=20)**

15) Write a note on role of Geoinformatics in site selection for ports.
16) Explain the satellites and their payloads in retrieval of coastal parameters.

P.T.O.

17) Describe the concept of biophysical coupling.

18) Write a note on GIS applications in potential fishing zone.

19) Write a note on Island environments.

IV. Essay type questions. **(10×2=20)**

20) Give a detailed account on application of RS in coastal environment studies.

OR

Give a brief account on major currents of the ocean and its factors causes ocean currents.

21) Describe the satellite oceanography and its role in beach recreational environments.

OR

Explain how to use geoinformatics as a tool in prediction models of SST.

Reg. No. | | | | | | | | | |

GIH 501

Third Semester M.Sc. Degree Examination, April 2021

(CBCS)

~~**GEOINFORMATICS**~~ RS & GIS in Water Resources and Coastal Zone Management

~~**Water Resources**~~

May

Time : 3 Hours Max. Marks : 70

I. Define **any five** of the following : **(5×2=10)**

1) Aquifer
2) Drainage density
3) Surface runoff
4) Infiltration
5) Aquifuge
6) Electrical conductivity
7) Specific yield.

II. Write short notes on **any five** of the following : **(5×4=20)**

8) Vertical distribution of groundwater in the earth crust.
9) Micro watershed.
10) Lineament studies in groundwater resources.
11) Quantitative studies of drainage basin.
12) Use of DEM in water resources.
13) Problems of groundwater over-exploitation.
14) Aquifer properties.

III. Answer **any four** of the following : **(4×5=20)**

15) Physical properties of water.
16) Groundwater exploration.

P.T.O.

17) Darcy's law.

18) Measurement of rainfall.

19) Interaction of fresh and saline water.

IV. Essay type questions : **(2×10=20)**

20) Discuss in detail about applications of RS and GIS in water resources studies.

OR

Write in brief on theory of geomorphic controls of water resources.

21) Discuss the hydrological cycle, illustrate the answer.

OR

Write the concepts of natural and artificial recharge of groundwater.

Reg. No. | | | | | | | | | |

MGS 406

First Semester M.Sc. Degree Examination, April 2021
(CBCS)
MARINE GEOLOGY
Geomorphology and Geodynamics

Time : 3 Hours Max. Marks : 70

Instruction : *Answer **all** the questions.*

I. Define/state the following : **(1×10=10)**

1) Moraines
2) Mass wasting
3) Inselberg
4) Peneplain
5) Mesa
6) Magnetic reversal
7) Plate tectonics
8) Isostatic equilibrium
9) Deep sea trenches
10) Divergent plate boundary.

II. Write short notes on **any five** of the following : **(5×4=20)**

11) Glacial depositional landscapes.
12) Structural control on landscape development.
13) Applications of geomorphology in mineral prospecting.
14) Sand dunes.
15) Concepts in geomorphology.
16) Seismic waves
17) Super continent.
18) Seismic zones of India.

P.T.O.

III. Answer **any four** of the following : **(4×5=20)**

19) Fluvial geomorphology

20) Exogenic process

21) Karst topography

22) Rift valleys

23) Mantle convection

24) Super continent.

IV. Answer the following : **(2×10=20)**

25) Discuss in detail the geomorphic cycle.

OR

Give a detailed note on coastal geomorphology with suitable sketches.

26) Discuss in detail the theory of plate tectonics.

OR

With neat illustration, discuss the internal structure of earth.

Reg. No. | | | | | | | | |

MGH 403

First Semester M.Sc. Degree Examination, April 2021
(CBCS)
MARINE GEOLOGY
Stratigraphy and Paleontology

Time : 3 Hours | Max. Marks : 70

Instruction : *Answer* ***all*** *the questions.*

I. Define/state the following : **(10×1=10)**

1) Infratrappean bed
2) Mass extinction
3) Strata
4) Cross bedding
5) Cryptozoic eon
6) Glabella
7) Petrification
8) Trace fossils
9) Spores and pollen
10) Suture pattern.

II. Write short notes on **any five** of the following : **(5×4=20)**

11) Dharwar supergroup
12) Cambrian explosion
13) Mesozoic Era
14) Vindhyan supergroup
15) Classification of corals
16) Nannoplankton
17) Fossilization
18) Evolution of human being.

P.T.O.

III. Answer **any four** of the following : **(4×5=20)**

19) Principles of stratigraphy

20) Cuddappah supergroup

21) Cretaceous – Tertiary boundary problem

22) Phytoplanktons

23) Morphology of foraminifera

24) Siwalik vertebrates.

IV. Answer the following : **(2×10=20)**

25) Discuss in detail Gondwana supergroup. Add a note on its stratigraphic significance and economic importance.

OR

Explain in detail the Geological time scale and its significance.

26) Describe the applications of microfossils in Earth Sciences.

OR

Give a detailed note on the morphology, classification and stratigraphic importance of trilobites.

Reg. No. | | | | | | | | | |

MGH 402

First Semester M.Sc. Degree Examination, April 2021
MARINE GEOLOGY
Petrology

Time : 3 Hours Max. Marks : 70

Instruction : *Answer **all** the questions.*

I. Define/state **any five** of the following : **(5×2=10)**

1) Carbonatite
2) Magma
3) Mantle
4) Sandstone
5) Granulite
6) Basalt
7) Texture of granite
8) Lamination
9) Slate
10) Rudaceous rocks.

II. Write short notes on **any five** of the following : **(5×4=20)**

11) Mafic rocks
12) Intrusive igneous rocks
13) Calcareous sedimentary rocks
14) Fractional crystalization
15) Argillites
16) Grades of metamorphism
17) Formation of sediments
18) Peridotite.

P.T.O.

III. Answer **any four** of the following : **(4×5=20)**

19) Discuss the origin of granite magma.

20) Write a note on foliation and lineation.

21) Write a note on the origin and occurrence of kimberlite.

22) Write a note on factors of metamorphism.

23) Explain Bowen's action principles and their importance.

24) Explain textures of sedimentary rocks.

IV. Answer **any two** of the following : **(2×10=20)**

25) Define metamorphism. Discuss its classification and examples of metamorphic rocks.

OR

Write an essay on the IUGS classification of igneous rocks.

26) Describe the primary structures of sedimentary rocks with neat sketches.

OR

Describe the ocean-floor metamorphism with examples.

Reg. No. | | | | | | | | |

MGH 401

First Semester M.Sc. Degree Examination, April 2021
(CBCS)
MARINE GEOLOGY
Mineralogy and Geochemistry

Time : 3 Hours | Max. Marks : 70

***Instruction** : Answer **all** the questions.*

I. Define/state **any five** of the following : **(5×2=10)**

1) Symmetry elements
2) Ring silicate structure
3) Double refraction
4) Optic axial angle
5) Peridot
6) Europium anomaly
7) Atmophile elements
8) Pedology
9) Cosmochemistry
10) Chondrite.

II. Write short notes on **any five** of the following : **(5×4=20)**

11) Explain crystal system with mineral examples.
12) Alumino silicates.
13) Interference figures.
14) Classification of minerals based on optical properties.
15) Write a note on chemistry of soils.
16) Principles in determining the ages of rocks.
17) Nitrogen cycle.
18) Interior of the earth with reference to elemental distribution.

P.T.O.

III. Answer **any four** of the following : **(4×5=20)**

19) Explain electrical and thermal properties of minerals.

20) Explain the determination of sign of elongation.

21) Describe olivine group of minerals.

22) Describe Geochemical cycle.

23) What are stable isotopes ? Explain their importance.

24) Explain the distribution of elements in igneous rocks .

IV. Answer **any two** of the following : **(2×10=20)**

25) Describe the physical and optical properties of amphibole group minerals.

OR

Describe the principle of X-ray diffraction and its applications.

26) What are meteorites ? Explain the classification, origin of meteorites and applications.

OR

Describe the different radioactive methods of dating of rock and sediments.

Reg. No. | | | | | | | | |

GIS 404

First Semester M.Sc. Degree Examination, April 2021
GEOINFORMATICS
Fundamentals of Earth Sciences

Time : 3 Hours | Max. Marks : 70

I. Define **any five** of the following : **(5×2=10)**

1) Breccia
2) Igneous rocks
3) Folds
4) Sedimentary rocks
5) Crystal
6) Crust
7) Marble.

II. Write short notes on **any five** of the following : **(4×5=20)**

8) Limestone and its uses.
9) Differentiate between Granite and Gneiss.
10) Dip and strike
11) Angular unconformity
12) Continental drift
13) Mud cracks
14) Plate tectonics.

P.T.O.

III. Answer **any four** of the following : **(5×4=20)**

15) Write a note on Ocean floor spreading.

16) Explain intrusive and extrusive igneous rocks.

17) Discuss on origin of sediments.

18) Explain laterite formation.

19) Write a note on Internal structure of the earth.

IV. Essay type questions : **(2×10=20)**

20) Write a detailed note on faults and its types.

OR

Explain with neat sketches the primary structure in sedimentary rock.

21) What is a mineral ? Give a detailed account of types of minerals.

OR

Describe various kinds of metamorphic rocks.

Reg. No. | | | | | | | | |

GIH 403

I Semester M.Sc. Degree Examination, April 2021
GEOINFORMATICS
Geographical Information System

Time : 3 Hours | Max. Marks : 70

I. Define **any five** of the following : **(5×2=10)**

1) Thematic map
2) Data and information
3) Buffer
4) GIS
5) Map projection
6) DGPS
7) GPS satellites.

II. Write short notes on **any five** of the following : **(5×4=20)**

8) CGIS and Harvard lab
9) Data sources
10) Spatial data models
11) Data quality and errors
12) Raster data structure
13) GPS space segment
14) Open source GIS.

III. Answer **any four** of the following : **(4×5=20)**

15) Write a note on spatial data formats.
16) Explain mode of digitization.

P.T.O.

17) Discuss on attribute data models.

18) Explain how GIS is used as a decision making tool.

19) Write a note on GPS surveying methods.

IV. Essay type questions : **(2×10=20)**

20) Discuss the components of GIS and GIS applications in different field.

OR

Give detailed account of data analysis using spatial analysis tools in GIS platform.

21) Define GPS. Explain different types of GPS and its receivers.

OR

What is DEM ? Discuss the 3D models of GIS in detail.

Reg. No. | | | | | | | | | |

GIH 402

I Semester M.Sc. Degree Examination, April 2021
GEOINFORMATICS
Remote Sensing and Photogrammetry

Time : 3 Hours Max. Marks : 70

I. Define **any five** of the following : **(5×2=10)**

1) Thermal Infrared region.
2) Spectral reflectance.
3) Scaterometer.
4) Conjugate principle point.
5) PAN image.
6) Stereoscopic vision.
7) Visible light.

II. Write short notes on **any five** of the following : **(5×4=20)**

8) Oblique Aerial photographs.
9) Principles of Remote Sensing.
10) Different types of Orbits.
11) Vertical exaggeration and depth perception.
12) Advantages and disadvantages of Aerial photographs.
13) Execution of photographic flights and their procedures.

III. Answer **any four** of the following : **(4×5=20)**

14) Discuss on spectral reflectance of soil and water.
15) Write a note on energy interaction with earth surface features.
16) Discuss on hyper spectral remote sensing.
17) Explain visual interpretation of images.
18) Discuss on Image displacement due to relief.

P.T.O.

IV. Essay type questions : **(2×10=20)**

19) a) Discuss with neat illustrations types of Aerial photographs and their advantages in geological mapping.

b) Write an essay on principles and geometry of Aerial photography.

20) a) Discuss the applications of remote sensing in land use/land cover mapping.

b) What is resolution ? Discuss different types of resolutions with respect to Indian Remote Sensing Satellite System.

Reg. No. | | | | | | | |

GIH 401

First Semester M.Sc. Degree Examination, April 2021
GEOINFORMATICS
Cartography

Time : 3 Hours | Max. Marks : 70

I. Define **any five** of the following : **(2×5=10)**

1) Slope and relief.
2) Cadastral map.
3) Sphere and spheroid.
4) Map scale.
5) TIN.
6) Thematic map.
7) Contour.

II. Write short notes on **any five** of the following : **(4×5=20)**

8) 3D visualization.
9) Bathymetry map.
10) Evolution of cartography.
11) Concept of central theme.
12) Map projection.
13) Flow chart model.
14) Web cartography.

III. Answer **any four** of the following : **(5×4=20)**

15) Write a note on modern cartography.
16) Give a note on cartographic themes.
17) Write a note on application of DEM in cartography.
18) Explain the inductive and deductive models.
19) Discuss the role of RS in data extraction for cartography.

P.T.O.

(10×2=20)

IV. Essay type questions :

20) Discuss in detail the role of cartography in GIS project design and management.

OR

Describe the importance of Dot and Multi Dot maps in population diffusion.

21) What is hydrographic chart ? Write a note on data extraction from hydrographic chart.

OR

Give a detailed account on applications of cartography in different thematic mapping.

Reg. No. | | | | | | | | | |

MGE 508

III Semester M.Sc. Degree Examination,
November/December 2019

(Choice Based Credit System – Optional Paper)

MARINE GEOLOGY

Ocean and Atmospheric Science (Open Elective)

Time : 3 Hours] [Max. Marks : 70

Instructions : *Answer all the questions.*

I. Define/State the following : **(10 × 1 = 10)**

1. Upwelling
2. Ocean wave
3. Placer mineral
4. Poly metallic nodules
5. Density of seawater
6. Heavy mineral
7. Gas hydrate
8. Tide gauge
9. Tropospheric ozone
10. Surf zone.

II. Write short notes on **any five** of the following : **(5 × 4 = 20)**

11. Coastal management
12. Ocean waves

13. Importance of stratosphere

14. Elements of the weather system

15. Conservative elements in the seawater

16. Ocean floor

17. Continental drift

18. Tracers in the ocean.

III. Write short notes on **any four** of the following : **(4 × 5 = 20)**

19. Residence time

20. Importance of climate study

21. Paleoclimatology

22. Diversity index and food web

23. Primary production

24. Fossil fuels.

IV. Write a descriptive notes of the following : **(2 × 10 = 20)**

25. (a) Discuss the circulation patterns of sea water. Add a note on constant currents of the Pacific Ocean.

Or

(b) How elements in the seawater are classified? Discuss various bio-geo-chemical processes operating in the ocean.

26. (a) How life in the ocean is classified? Discuss on planktonic and benthic life in the ocean.

Or

(b) What are marine mineral resources? Enumerate the processes leading to mineral formations in the ocean.

Reg. No. | | | | | | | | | |

MGS 505

III Semester M.Sc. Degree Examination,
November/December 2019

(CBCS)

MARINE GEOLOGY

GIS and GPS

Time : 3 Hours] [Max. Marks : 70

I. Define/State the following : **(10 × 1 = 10)**

1. Vector data
2. GCP
3. Meta data
4. Spatial data
5. TIN
6. Network analysis
7. Space segment
8. Attribute data
9. GPS trackers
10. Static GPS

II. Write short notes on **any five** of the following : **(5 × 4 = 20)**

11. Data base Management System
12. Properties of Map projections
13. Raster data model

14. TIN

15. Significance of spatial analysis

16. GPS errors and their source

17. Creation and structuring of Map

18. Applications and limitations of GPS

III. Answer **any four** of the following : **(4 × 5 = 20)**

19. DBMS architecture model

20. Types of basic projections

21. Overlay analysis

22. Grid operations used in map algebra

23. GPS segments

24. Estimation of user position and time in GPS

IV. Write descriptive note of the following : **(2 × 10 = 20)**

25. (a) Give an account of data quality and errors and their importance in GIS.

Or

(b) Describe the advantages and disadvantages of spatial data models.

26. (a) Describe the generation and structure of DEM and its applications.

Or

(b) Describe the GPS signal acquisition and tracking.

Reg. No. | | | | · | | | | | |

MGS 504

III Semester M.Sc. Degree Examination,
November/December 2019

(CBCS)

MARINE GEOLOGY

Economic Geology and Mining Geology

Time : 3 Hours] [Max. Marks : 70

Instructions : *Answer* ***all*** *the questions.*

I. Define/State the following : **(10 × 1 = 10)**

1. Chalcopyrite
2. Concentration of ore
3. Evaporate
4. Seal rock
5. Anthracite
6. Shrinkage stope
7. Building material
8. Vein
9. Cross cut
10. Raw materials used in Cement-Industry

II. Write short notes on **any five** of the following : **(5 × 4 = 20)**

11. Oxidation and supergene enrichment
12. Refractory minerals

P.T.O.

13. Alluvial mining

14. Minerals used in fertilizer industry

15. Diamond

16. Placer deposits

17. Caving method of mining

18. Sublimation process

III. Answer **any four** of the following : **(4 × 5 = 20)**

19. Hydrothermal process

20. Gold deposits

21. Mechanical concentration deposits

22. Renewable resources

23. Origin and occurrence of petroleum

24. Open stopes

IV. Answer the following : **(2 × 10 = 20)**

25. (a) Give a detailed account of the metallogenic provinces and epochs of India.

Or

(b) Describe in detail the origin, occurrence and geological history of Iron deposits with special reference to Karnataka.

26. (a) Discuss in detail about origin and occurrence of coal deposits of India.

Or

(b) Describe in detail various coal mining methods.

Reg. No. | | | | | | | | | |

MGS 503

III Semester M.Sc. Degree Examination,
November/December 2019

(CBCS Optional Paper)

MARINE GEOLOGY

Exploration and Engineering Geology

Time : 3 Hours] [Max. Marks : 70

Instructions *: Answer* ***all*** *the questions*

I. Define/State the following : **(10 × 1 = 10)**

1. Apex and nadir.
2. Ecosounder.
3. Path finder element.
4. Tenor.
5. Porosity.
6. Spillways.
7. Fossil fuels.
8. Geophones.
9. Gangue.
10. Tenacity.

II. Write short notes on **any five** of the following : **(5 × 4 = 20)**

11. Application of airborne surveys.
12. Principles of gravimeter.
13. Mineral prospecting.

14. Geobotanical indicator.

15. Engineering properties of rocks.

16. Groundwater surveying methods.

17. Application of seismic prospecting.

18. GM counter.

III. Answer **any four** of the following : **(4 × 5 = 20)**

19. Explain offshore and onshore surveys.

20. Write a note on resistivity survey.

21. What is well logging? Explain.

22. Write a note on the compaction of soils.

23. Discuss radioactive prospecting of minerals.

24. What is the role of geologist in construction of dams?

IV. Descriptive notes on the following : **(2 × 10 = 20)**

25. (a) Explain various geological criteria for the identification of mineral deposits.

Or

(b) Explain geochemical and biogeochemical indicators of mineral deposits.

26. (a) Explain the concept of rock mechanics. Discuss their importance in the engineering projects.

Or

(b) Discuss the problem of groundwater in the construction of major engineering projects.

Reg. No. | | | | | | | | | |

MGH 502

III Semester M.Sc. Degree Examination,
November/December 2019

(Choice Based Credit System)

MARINE GEOLOGY

Oceanography – II (Geological and Biological)

Time : 3 Hours] [Max. Marks : 70

Instructions : *Answer **all** the questions.*

I. Define/State the following : **(10 × 1 = 10)**

1. Continental shelf
2. Authigenic sediments
3. OTEC
4. Exclusive Economic Zone
5. UNCLOS II
6. Cobalt crust
7. Frustule
8. Plankton
9. Secchi disc
10. CZM.

II. Write short notes on **any five** of the following : **(5 × 4 =20)**

11. Sea stacks
12. Tectonic evolution of the ocean basins

13. Black and white smokers

14. Red Sea Joint Commission

15. Applications of Diatoms

16. Harmful algal blooms

17. Pathways of Pollution

18. Dissolved gases.

III. Answer **any four** of the following : **(4 × 5 = 20)**

19. Write a note on Sea caves and notches.

20. Explain Placer minerals.

21. Discuss the exploration methods for massive sulphide deposits.

22. Explain the Genesis of metalliferous sediment deposits.

23. What are Physico-chemical factors affecting marine life? Explain.

24. Discuss the Microbenthos and macrobenthos in the ocean.

IV. Write descriptive notes on the following : **(2 × 10 = 20)**

25. (a) Give a detailed account of the ocean-floor morphology.

Or

(b) Discuss on opening and closing of ocean gateways and their effect on circulation and climate during the Cenozoic Era.

26. (a) What are forams? How are they useful in oceanographic and marine geological studies?

Or

(b) Discuss the growth rate and origin of polymetallic nodules.

Reg. No. | | | | | | | | | |

MGH 501

III Semester M.Sc. Degree Examination,
November/December 2019

(Choice Based Credit System)

MARINE GEOLOGY

Oceanography – I – (Physical and Chemical)

Time : 3 Hours] [Max. Marks : 70

Instructions : *Answer all the questions.*

I. Define/State the following : **(10 × 1 = 10)**

1. Spring tide
2. Seawalls
3. Geostrophic current
4. EI Nino
5. Seasonal currents
6. Hyper saline water
7. Diagenesis
8. Chemical exchanges
9. Residence times of elements
10. Chemical interactions.

II. Write short notes on **any five** of the following : **(5 × 4 = 20)**

11. Water masses
12. Coastal processes

P.T.O.

13. Uses of tides

14. Importance of estuaries

15. Primary inputs to oceans

16. Major and minor constituents of oceans

17. Distribution of gases in the oceans

18. Biological pump.

III. Answer **any four** of the following : **(4 × 5 = 20)**

19. Ekman transport.

20. Classification of Estuaries.

21. Velocity of sound in sea water.

22. Constancy of ionic composition of seawater.

23. Sedimentary particles scavenging in the oceans.

24. Air-sea exchange of important biogenic dissolved gases.

IV. Write descriptive notes on **any two** of the following : **(2 × 10 = 20)**

25. (a) Discuss on formation and behaviour of waves. Add a note on deep water and shallow water waves.

Or

(b) Explain the causes for formation of surface currents? Give an account of constant current of Indian and Atlantic Oceans.

26. (a) Describe the chemical exchanges across sediment-water interfaces.

Or

(b) Write a detailed note on abiotic and biotic controls of trace elements in the ocean.

Reg. No. | | | | | | | | | |

GIE 508

III Semester M.Sc. Degree Examination,
November/December 2019

GEOINFORMATICS

Geoinformatics of Coastal Environments (Open Elective)

Time : 3 Hours] [Max. Marks : 70

I. Define **any five** of the following : **(5 × 2 = 10)**

1. Atmospheric windows.
2. Electromagnetic spectrum.
3. Fiducial marks.
4. Attribute data.
5. Estuary.
6. Secchi disk.
7. Ports.

II. Write short notes on **any five** of the following : **(5 × 4 = 20)**

8. Advantages of thermal remote sensing.
9. Oceansat and Resourcesat.
10. Spectral reflectance of vegetation and soil.
11. Aerial photography.
12. Echo sounders and multibeam unit.
13. CRZ-I and CRZ-II.
14. Coastal landforms.

III. Answer **any four** of the following : **(4 × 5 = 20)**

15. Discuss on potential fishing zone mapping.

16. Explain Topographic maps and Naval hydrographic charts.

17. Discuss on coastal landforms.

18. Discuss on Marine sampling and instruments.

19. Explain Beach recreational environments.

IV. Essay type questions : **(2 × 10 = 20)**

20. (a) Discuss the application of EIA and CRZ in the development of ports and harbours. Add a note on water sports.

Or

(b) Discuss the basic concepts and fundamentals of remote sensing and GIS.

21. (a) Discuss the applications of remote sensing and GIS in generation of coastal information system.

Or

(b) Write an essay on Indian Remote Sensing Satellites.

Reg. No. | | | | | | | | | |

GIS 505

Third Semester M.Sc. Degree Examination, December 2018/January 2019
GEOINFORMATICS
Applied Geoinformatics

Time : 3 Hours Max. Marks : 70

I. Define **any five** of the following. **(2×5=10)**

1) Spectral resolution
2) Metropolitan city
3) CBD
4) Slum
5) Temporal spectral index
6) DGPS
7) Urban sprawl.

II. Write short notes on **any five** of the following. **(4×5=20)**

8) Spatial and spectral resolution in urban studies.
9) Urban landuse classification system.
10) Precision forming.
11) Pollution in developing cities.
12) Rural development programme.
13) Solid waste management in cities.
14) Origin of town.

P.T.O.

III. Answer **any four** of the following. **(5×4=20)**

15) Write a note on types of urban growth.

16) Give an account of RS and GIS applications in socio-economic information analysis.

17) Write a note on RS and GIS applications in watershed management.

18) Describe the regional and multi level planning in urban growth.

19) Write a note on method of land surface temperature analysis using RS.

IV. Essay type questions.

20) Discuss the applications of RS and GIS in village information system.

OR

Describe the globalization and its impacts on agriculture and rural development. **10**

21) Describe the role of RS and GIS in urban planning and management.

OR

Write a note on significance of agriculture in growth and development of nation. **10**

Reg. No. | | | | | | | | | |

GIS 504

III Semester M.Sc. Degree Examination,
November/December 2019

(CBCS)

GEOINFORMATICS

Disaster Management

Time : 3 Hours] [Max. Marks : 70

I. Define **any five** of the following : **(5 × 2 = 10)**

1. Flood zones.
2. Crown fire.
3. Vulnerable zones.
4. Hurricanes.
5. Seismogram.
6. Epicenter.
7. Tsunami.

II. Write short notes on **any five** of the following : **(5 × 4 = 20)**

8. Manmade disaster.
9. Land subsidence.
10. Mitigation measures for forest fire.
11. Vulnerability assessment.
12. Types of volcanoes.
13. Rehabilitation planning.
14. Water and sanitation.

III. Answer **any four** of the following : **(4 × 5 = 20)**

15. Write a note on Global warming.

16. Give an account of seismograph application in earthquake.

17. Write a note on post disaster relief and logistics management.

18. Explain the role of military and paramilitary forces during a disaster.

19. Discuss the factors which causes droughts.

IV. Essay type questions : **(2 × 10 = 20)**

20. (a) Discuss in detail the role of flood in geomorphologic changes with reference to Karnataka. **(10)**

Or

(b) Explain the techniques of RS and GIS for landslide monitoring and mapping.

21. (a) Give a detailed account of vulnerability and mitigation measures for various disasters. **(10)**

Or

(b) Explain how GIS technology is useful in disaster mapping.

Reg. No. | | | | | | | | | |

GIS 503

III Semester M.Sc. Degree Examination,
November/December 2019

GEOINFORMATICS

Cartography

Time : 3 Hours] [Max. Marks : 70

I. Define **any five** of the following : **(5 × 2 = 10)**

1. Cadastral map.
2. GPS.
3. Slope.
4. Geoid.
5. Bathymetry.
6. DSM.
7. Network model.

II. Write short notes on **any five** of the following : **(5 × 4 = 20)**

8. GIS design and management.
9. Hydrographs.
10. DOT and multi DOT maps.
11. Satellites used in cartography.
12. Inductive and deductive models.
13. TIN.
14. Map projection types.

III. Answer **any four** of the following : **(4 × 5 = 20)**

15. Give an account of modern cartography.

16. Write a note on data extraction from aerial photographs.

17. Explain the importance of GIS in urban planning.

18. Flow chart model.

19. Explain the design and management in GIS.

IV. Essay type questions : **(2 × 10 = 20)**

20. (a) What are cartographic themes? Describe the Choroschematic and Chorochromatic maps.

Or

(b) Give a detailed application of DEM in cartography.

21. (a) Give a detailed account of GIS technique in generation of cartographic maps.

Or

(b) Discuss in detail the satellite image and its role in data extraction for Cartography.

Reg. No. | | | | | | | | | |

GIH 502

III Semester M.Sc. Degree Examination,
November/December 2019

GEOINFORMATICS

Marine Geoinformatics

Time : 3 Hours] [Max. Marks : 70

I. Define **any five** of the following : **(5 × 2 = 10)**

1. Data products
2. Shores
3. Ridges
4. Ports
5. GIS
6. Cuspate beaches
7. OCM

II. Write short notes on **any five** of the following : **(5 × 4 = 20)**

8. Classification of coastal environment
9. Rocky shores
10. Island environments
11. Salinity and TSM
12. Remote sensing in coastal studies
13. Retrieval of suspended matter and chlorophyll
14. Types of ocean currents

III. Answer **any four** of the following : **(4 × 5 = 20)**

15. Role of GIS in oceanographic studies.

16. Technical characteristics of Oceansat-I

17. Identification of Beach Recreational sites.

18. Concepts of Marine Zonation.

19. Satellite Oceanography.

IV. Essay type questions :

20. (a) Explain the classification of coastal environments. **(10)**

Or

(b) Describe the concepts of biophysical coupling and prediction models of sea surface temperature.

21. (a) Discuss in detail Mangrove environments. Add a note on Global distribution of mangrove environment. **(10)**

Or

(b) Furnish a detailed account on the use of GIS and Cartography to map morpho-ecosystems of the coast.

Reg. No. | | | | | | | | | |

GIH 501

III Semester M.Sc. Degree Examination,
November/December 2019

(CBCS)

GEOINFORMATICS

Water Resources

Time : 3 Hours] [Max. Marks : 70

I. Define **any five** of the following : **(5 × 2 = 10)**

1. Specific yield.
2. Aquifer and aquiclude.
3. Rainwater harvesting.
4. Taste and odour.
5. DEM.
6. Flood zone.
7. Evapotranspiration.

II. Write short notes on **any five** of the following : **(5 × 4 = 20)**

8. Concept in artificial recharge.
9. Darcy's law and its application.
10. Hydrological cycle.
11. Physical and chemical properties of water.
12. Geological methods of groundwater exploration.
13. Lineament studies in water resources.
14. Watershed management.

III. Answer **any four** of the following : **(4 × 5 = 20)**

15. Discuss the role of Remote sensing and GIS in water resources studies.

16. Explain the geomorphic controls on water resources.

17. Discuss the GIS application in water resources.

18. Write a note on vertical distribution of groundwater.

19. Discuss the causes of groundwater contamination.

IV. Essay type questions : **(2 × 10 = 20)**

20. (a) Describe the groundwater quality provinces of India.

Or

(b) Explain the methods of artificial groundwater recharge.

21. (a) Explain the problems of over exploitation of groundwater.

Or

(b) Discuss the groundwater resources of Karnataka.

Reg. No. | | | | | | | | | |

MGS 406

I Semester M.Sc. Degree Examination, November/December 2019

(CBCS System)

MARINE GEOLOGY

Geomorphology and Geodynamics

Time : 3 Hours] [Max. Marks : 70

I. Define/State the following : **(10 × 1 = 10)**

1. Morain
2. Landform rejuvenation
3. Monocyclic Landform
4. Sand dunes
5. Karst topography
6. Palaeomagnetism
7. Rift valleys
8. Supercontinent
9. Epicentre
10. Isostasy

II. Write short notes on **any five** of the following : **(5 × 4 = 20)**

11. Concept in Geomorphology
12. Endogenic and exogenic landforms
13. Mass wasting
14. Coastal landforms

15. Flood management

16. Seismic zones of India

17. Major and minor plates

18. Evidences for continental drift

III. Answer **any four** of the following : **(4 × 5 = 20)**

19. Climatic and tectonic factors in landform evolution

20. Erosion cycles

21. Geomorphology of Karnataka

22. Plate boundaries

23. Mechanism of plate motion

24. Gondwanaland

IV. Answer the following : **(2 × 10 = 20)**

25. (a) Describe geomorphological processes and the resulting landforms.

Or

(b) Discuss the applications of geomorphology in mineral prospecting.

26. (a) Write an essay on seismic zones of India.

Or

(b) Explain various aspects of plate tectonics.

Reg. No. | | | | | | | | | |

MGH 403

I Semester M.Sc. Degree Examination,
November/December 2019

(CBCS)

MARINE GEOLOGY

Stratigraphy and Paleontology

Time : 3 Hours] [Max. Marks : 70

I. Define/State the following : **(10 × 1 = 10)**

1. Fossilization.
2. Silicified wood.
3. Articulata and inarticulata.
4. Biozone.
5. Pearl formation.
6. Adductor muscles.
7. Mass extinction.
8. Geologic time scale.
9. Mesozoic era.
10. System.

II. Write short notes on **any five** of the following : **(5 × 4 = 20)**

11. Write a note on mode of preservation of fossils.
12. Morphology of brachiopoda.
13. Litho stratigraphic classification.
14. Physiographic division of India.

15. Siwalik Fauna.

16. Applications of microfossils.

17. Dharwar super group.

18. Vindhyan super group.

III. Answer **any four** of the following : **(4 × 5 = 20)**

19. Explain the stratigraphic importance of stromatolite.

20. Write a note on suture type in cephalopoda.

21. What is foraminiferal test? Add a note on its microstructures.

22. Himalayan orogeny.

23. Describe the classification of cuddapah super group.

24. Describe the cretaceous formation in South Indian Stratigraphy.

IV. Answer the following : **(2 × 10 = 20)**

25. (a) Describe in detail the Gondwana super group of India. Add a note on its economic importance.

Or

(b) Discuss the stratigraphic setting, structural features and age of Deccan traps.

26. (a) Describe the shell morphology and classification of pelecypods. How they are distinguished from brachiopods?

Or

(b) Describe the classification, evolution, age and stratigraphic importance of Trilobites with neat diagrams.

Reg. No. | | | | | | | | | |

MGH 402

I Semester M.Sc. Degree Examination, November/December 2019

(Choice Based Credit System)

MARINE GEOLOGY

Petrology

Time : 3 Hours] [Max. Marks : 70

Instructions : *Answer **all** the questions.*

I. Define/State the following : **(10 × 1 = 10)**

1. Composition of magma
2. Sill
3. Silica saturation
4. Texture of Dolerite
5. Sediment
6. Breccia
7. Gravels
8. Metamorphism
9. Migmatite
10. Isograd

II. Write short notes on **any five** of the following : **(5 × 4 = 20)**

11. Ultramafic rocks
12. Extrusive igneous rocks

13. Fractional crystallization

14. Diagenesis

15. Argillaceous sedimentary rocks

16. Sources of sediment

17. Ocean floor metamorphism

18. Pseudotachyllite.

III. Answer **any four** of the following : **(4 × 5 = 20)**

19. Describe the origin of Basalt.

20. Write a note on Kimberlites and its economic importance.

21. Explain Bowens reaction principle.

22. Write a note on foliation and lineation.

23. Give an account of factors of metamorphism.

24. Describe the classification of sedimentary rocks.

IV. Write descriptive note on the following : **(2 × 10 = 20)**

25. (a) Explain IUGS classification of Igneous rocks.

Or

(b) Describe the textures of igneous rocks.

26. (a) Describe primary sedimentary structures with neat sketches.

Or

(b) Give a detailed account on the types of metamorphism.

Reg. No. | | | | | | | | | |

MGH 401

I Semester M.Sc. Degree Examination, November/December 2019

(Choice Based Credit System)

MARINE GEOLOGY

Mineralogy and Geochemistry

Time : 3 Hours] [Max. Marks : 70

Instructions : *Answer* ***all*** *the questions.*

I. Define/State the following : **(10 × 1 = 10)**

1. Bragg's equation
2. Neso silicate structure
3. Double refraction
4. Phonon
5. Zeolites
6. Cerium anomaly
7. Periodic table
8. Half life
9. Nuclear fission
10. Pedology.

II. Write short notes on **any five** of the following: **(5 × 4 = 20)**

11. Orthorhombic and triclinic crystal system
12. "Piezo" and "Pyro" electricity with example
13. Isotropic and anisotropic minerals with example

14. Classification of Mica group of minerals

15. Describe the types of aerosol with example

16. Describe the most abundant in the Universe

17. Carbon cycle

18. Types of meteorites.

III. Answer **any four** of the following: **(4 × 5 = 20)**

19. Explain thermal properties of minerals.

20. Describe ore forming minerals.

21. Garnet group of minerals.

22. Describe the stages of nitrogen cycle.

23. Composition of planets.

24. Distribution of elements in sedimentary rocks.

IV. Answer **any two** of the following: **(2 × 10 = 20)**

25. (a) Describe briefly the physical properties of minerals with suitable example.

Or

(b) What are silicates? Describe the structural classification of silicates with neat sketch.

26. (a) Describe the application of stable isotopes in different field of earth science.

Or

(b) Describe the interior of the earth and its composition.

Reg. No. | | | | | | | | | |

GIS 406

I Semester M.Sc. Degree Examination,
November/December 2019

(CBCS)

GEOINFORMATICS

Fundamentals of Geological Science

Time : 3 Hours] [Max. Marks : 70

I. Define **any five** of the following : **(5 × 2 = 10)**

1. Crust.
2. Crystal.
3. Sedimentary rocks.
4. Folds.
5. Schist.
6. Extrusive rocks.
7. Lime stone.

II. Write short notes on **any five** of the following : **(5 × 4 = 20)**

8. Ocean floor spreading.
9. Continental drift.
10. Composition of granite and its formation.
11. Difference between breccias and conglomerate.
12. Parallel and angular unconformity.
13. Symmetrical and asymmetrical folds.
14. Types of joints.

III. Answer **any four** of the following : **(4 × 5 = 20)**

15. Earth's structure.

16. Difference between granite and gneiss.

17. Laterite formation.

18. Describe parts of a normal faults with neat sketch.

19. Horst and graben.

IV. Write descriptive notes of the following : **(2 × 10 = 20)**

20. (a) What are rocks? Give a detailed account of types of rocks.

Or

(b) Give a detailed account on theory of plate tectonics.

21. (a) What is a primary structure? Add a note on different types of primary structures.

Or

(b) Write a detailed notes on types of folds.

Reg. No. | | | | | | | | | |

GIH 403

I Semester M.Sc. Degree Examination,
November/December 2019

(CBCS)

GEOINFORMATICS

Computer Science and Web Designing

Time : 3 Hours] [Max. Marks : 70

I. Define **any five** of the following : **(5 × 2 = 10)**

1. Input device.
2. Protocols.
3. HTML.
4. XML.
5. HTTP.
6. OOP.
7. DBMS.

II. Write short notes on **any five** of the following : **(5 × 4 = 20)**

8. Computer operating system.
9. Search engines and their applications.
10. Types of tags in HTML.
11. Exploring power point views.
12. Functions of Microsoft Excel.
13. Difference between 'C' and C++.
14. Components of Excel work book.

III. Write short notes on **any four** of the following : **(4 × 5 = 20)**

15. Computer languages and translators.

16. Types of Networks.

17. Method of creating image links.

18. Advantages of Microsoft PowerPoint.

19. Excel work environment.

IV. Essay type questions : **(2 × 10 = 20)**

20. (a) Describe the fundamentals of computers and add a note on computer languages.

Or

(b) Give a detailed account of outlines of Python and add a note on its applications.

21. (a) Discuss in detail on animations and slide show applications in Geo-informatics.

Or

(b) Explain the structure and concepts of C and C++ programming languages.

Reg. No. | | | | | | | | | |

GIH 402

I Semester M.Sc. Degree Examination,
November/December 2019

GEOINFORMATICS

Remote Sensing and Photogrammetry

Time : 3 Hours] [Max. Marks : 70

I. Define **any five** of the following : **(5 × 2 = 10)**

1. Atmospheric windows.
2. Cartosat.
3. Plate parallel.
4. Fiducial marks.
5. Pixel.
6. Stereopairs.
7. Thermal conductivity.

II. Write short notes on **any five** of the following : **(5 × 4 = 20)**

8. Spectral and spatial resolutions.
9. Advantages of thermal and microwave remote sensing.
10. Sun synchronous and geosynchronous orbits.
11. Aerial mosaics and its types.
12. Advantages of small and large scale aerial photographs.
13. Stereoscopes and stereoscopic vision.
14. Meteorological satellites.

III. Answer **any four** of the following : **(4 × 5 = 20)**

15. Discuss on spectral reflectance of water and vegetation.

16. Write a note on scattering and types of scattering.

17. Discuss on Multispectral vs. Hyper spectral remote sensing.

18. Explain Tone and Texture.

19. Discuss on Image displacement due to relief.

IV. Essay type questions : **(2 × 10 = 20)**

20. (a) What is Photogrammetry? With neat illustrations discuss the geometry of aerial photographs.

Or

(b) Write an essay on planning and execution of photographic flights.

21. (a) Discuss the applications of remote sensing in natural resources mapping.

Or

(b) Give a detailed account of Indian space program.

Reg. No. | | | | | | | | | |

GIH 401

I Semester M.Sc. Degree Examination,
November/December 2019

(CBCS)

GEOINFORMATICS

Data Acquisition and Data Processing

Time : 3 Hours] [Max. Marks : 70

I. Define **any five** of the following : **(5 × 2 = 10)**

1. Information.
2. Hard copy.
3. Pixels.
4. Metadata.
5. Aerial photos.
6. Topology.
7. Scale.

II. Write short notes on **any five** of the following : **(5 × 4 = 20)**

8. Limitations of secondary data
9. Spatial resolution
10. Mode of digitization
11. Aerial photographs
12. Map features
13. Cadastral data
14. Limitation of scanned data

III. Answer **any four** of the following : **(4 × 5 = 20)**

15. How to extract data from topomaps?

16. Write a note on different types of scanners.

17. Give an account of DBMS models.

18. How to convert analog data into digital data?

19. What are the devices to input data to computer?

IV. Essay type questions :

20. (a) Give an account of extraction of data from satellite imagery. **(10)**

Or

(b) Write a brief note on data storing system and devices.

21. (a) Define raster and vector data models. Discuss the advantage and disadvantage of raster and vector data. **(10)**

Or

(b) Explain in detail the sources and application of primary data in Geoinformatics.

Reg. No. | | | | | | | | | |

GIS 404

First Semester M.Sc. Degree Examination, May 2022
(CBCS)
GEOINFORMATICS
Fundamentals of Earth Sciences

Time : 3 Hours Max. Marks : 70

I. Define **any five** of the following : **(5×2=10)**

1) Basalt.

2) Delta.

3) Texture.

4) Mylonite.

5) Metamorphism.

6) Unconformity.

7) Joints.

II. Write short notes on **any five** of the following : **(5×4=20)**

8) Major and minor plates.

9) Physical properties of minerals.

10) Granite and its uses.

11) Origin of limestone.

12) Types of unconformity.

13) Continental drift and ocean floor spreading.

14) Origin of earth.

P.T.O.

III. Answer **any four** of the following : **(4x5=20)**

15) Write a note on internal structure of the earth.

16) Explain the limestone and marble.

17) Write a note on intrusive forms of igneous rocks.

18) Explain with neat sketches the primary structure of sedimentary rocks.

19) Explain the various factors of metamorphism.

IV. Essay type questions : **(2x10=20)**

20) What are folds ? Describe the classification of folds with neat sketches.

OR

Give a detailed note on gabbro and dolerite.

21) Explain in detailed of important rock forming minerals.

OR

Discuss in detailed about the types of metamorphism.

———————

Reg No

GIH 403

First Semester M.Sc. Degree Examination, May 2022
(CBCS)
GEOINFORMATICS
Geographical Information Systems

Time : 3 Hours Max. Marks : 70

***Instruction** : Answer **all** the questions.*

I. Define **any five** of the following : **(5×2=10)**

1) Spatial data.

2) TIFF.

3) ArcGIS.

4) Clip.

5) DSM.

6) NAVSTAR.

7) GPS signal

II. Write short notes on **any five** of the following : **(5×4=20)**

8) Buffer.

9) CGIS and Harvard lab.

10) Data quality and errors.

11) Types of digitization.

12) GIS components

13) GPS space segment

14) Static and Kinematic positioning.

P.T.O.

III. Answer **any four** of the following : **(4×5=20)**

15) How to extract the data from air photos ? Explain.

16) Write a note on open sources of GIS.

17) Discuss on overlay analysis.

18) How GIS is a decision making tool ?

19) Write a note on raster data formats

IV Essay type questions : **(2×10=20)**

20) Give a detailed account of spatial and non-spatial data models.

OR

Discuss in detail the role of GIS in natural disaster planning and management.

21) Define DGPS. Explain the different methods of survey with GPS.

OR

What is DTM ? Discuss the various 3D models of GIS in terrain analysis.

Reg. No. [| | | | | | | | | |]

GIH 402

First Semester M.Sc. Degree Examination, May 2022
(CBCS)
GEOINFORMATICS
Remote Sensing and Photogrammetry

Time : 3 Hours Max. Marks : 70

Instruction : *Answer* ***all*** *the questions.*

I. Define **any five** of the following : **(5×2=10)**

1) RADAR.

2) Scale.

3) Focal length.

4) Visible spectrum.

5) Swath.

6) Stereo-pair photos.

7) PAN image

II. Write short notes on **any five** of the following : **(5×4=20)**

8) Thermal diffusivity.

9) Aerial survey.

10) SLAR and SAR.

11) Stereoscopic vision.

12) Types of aerial photographs.

13) Platforms and sensors of remote sensing.

14) Automatic surface modeling

P.T.O.

III Answer **any four** of the following : **(4×5=20)**

15) Explain principles of microwave remote sensing.

16) Write a note on thermal band.

17) Give a note on elements of aerial photograph.

18) Explain relief and tilt displacements.

19) Write a note on vertical exaggeration and depth perception.

IV. Essay type questions . **(2×10=20)**

20) Discuss the application of aerial photographs in geomorphological studies.

OR

Explain various interpretation techniques in digital photogrammetry.

21) Give a detailed account on hyper-spectral satellite system and analysis techniques.

OR

Define electromagnetic spectrum. Explain in detail the energy interaction with atmosphere.

Reg. No. | | | | | | | | | | |

GIH 401

First Semester M.Sc. Degree Examination, May 2022
(CBCS)
GEOINFORMATICS
Cartography

Time : 3 Hours Max. Marks : 70

I. Define **any five** of the following . **(5×2=10)**

1) Map.
2) Bench mark.
3) Scale.
4) Multi dot maps.
5) Hydrographic chart
6) TIN.
7) Bathymetry.

II. Write short notes on **any five** of the following : **(5×4=20)**

8) Ancient cartography.
9) Digital Elevation Model and its types.
10) Model flow charting.
11) Spatial and marginal information of topographic maps.
12) GIS design and output.
13) Retrieval of secondary data.
14) Web cartography.

P.T.O.

III. Answer **any four** of the following : **(4×5=20)**

15) Write a note on Canadian Geographic Information System

16) Explain the Cadastral maps.

17) Write a note on medieval period.

18) Explain the Thematic map and its importance.

19) Write a note on inductive and deductive models.

IV. Essay type questions : **(2×10=20)**

20) Discuss the evolution of cartography and also write a note on map projections

OR

Describe chorographical maps. Distinguish between chorochromatic and choroschematic maps.

21) Discuss briefly the applications of GIS in modern cartography.

OR

Give a detailed account of multi-dated thematic mapping on shoreline changes.

Reg. No. | | | | | | | | | | |

GIE 457

Second Semester M.Sc. Degree Examination, September/October 2022
GEOINFORMATICS
Geoinformatics (Open Elective)

Time : 3 Hours Max. Marks : 70

I. Define **any five** of the following : **(5×2=10)**

1) Conjugate principle point.

2) Spatial data.

3) Neighbourhood.

4) RADAR.

5) Scale of Photography.

6) Histogram equalization.

7) Metadata.

II. Write short notes on **any five** of the following : **(5×4=20)**

8) Sources of spatial data.

9) Significance of Remote sensing.

10) Black body Radiations law.

11) Map Projection and parameters.

12) Microwave sensors.

13) Indian Remote Sensing Satellites.

14) Types of aerial photography.

P.T.O.

III. Answer **any four** of the following : **(4×5=20)**

15) How visual Interpretation keys used in Aerial Photography ?

16) Explain the types of sensors and their properties.

17) Discuss the digital image analysis techniques.

18) Explain the applications of Microwave Remote Sensing.

19) Write a note on difference between spatial and non spatial data.

IV. Essay type questions : **(2×10=20)**

20) Describe the different spatial data modeling and add a note on advantages of raster and vector data models.

OR

Write a detailed note on relational and hierarchical data models.

21) Discuss the applications of thermal remote sensing and Hyperspectral remote sensing.

OR

Write detailed note on advantages of RAR and SAR.

Reg. No.

GIS 454

II Semester M.Sc. Degree Examination, September/October 2022
(CBCS)
GEOINFORMATICS
Applied Geomorphology and Geo-Environmental Sciences

Time : 3 Hours Max. Marks : 70

***Instruction** : Answer **all** the questions.*

I. Define **any five** of the following : **(5×2=10)**

1) Ocean floor.

2) Geomorphic evolution.

3) SWM.

4) Cartography.

5) DEM.

6) Open cast mining.

7) Noise Standards.

II. Write short notes on **any five** of the following : **(5×4=20)**

8) Hinter Land Terrains.

9) EMP.

10) Coastal Regulation Zone.

11) Risk area mapping.

12) Karst and Dune.

13) Forest Fire.

14) IKONOS Satellite.

P.T.O.

III. Answer **any four** of the following : **(4×5=20)**

15) Explain the concept of modern geomorphology.

16) Define mid-ocean ridge and explain the same.

17) What are the steps involved in reconnaissance mapping of mining area ?

18) Explain the impacts of slope in geomorphic environment.

19) Discuss the geometry of aerial photographs.

IV. Essay type questions. **(2×10=20)**

20) What is the role of Geomorphology and GIS techniques in exploration of minerals ?

OR

How quantitative interpretations of risk area mapping is done on Tsunami affected terrains using GIS tools ?

21) Explain the preparedness and mitigation in handling hazardous waste from nuclear power plants.

OR

With the help of flowchart explain the development of smart city plan for coastal city.

Reg. No. | | | | | | | | | |

GIS 453

Second Semester M.Sc. Degree Examination, Sept./Oct. 2022
GEOINFORMATICS (CBCS)
Advanced GIS

Time : 3 Hours Max. Marks : 70

I. Define **any five** of the following : **(5×2=10)**

1) Rectification.
2) Cylindrical projection.
3) Buffer.
4) Overlay analysis.
5) Boolean operation.
6) QGIS.
7) Kriging.

II. Write short notes on **any five** of the following : **(5×4=20)**

8) Components of GIS.
9) Functions of Web GIS.
10) Data quality and errors.
11) Web mapping.
12) GIS in network analysis.
13) Topology and its errors.
14) GIS for surface analysis.

III. Answer **any four** of the following : **(4×5=20)**

15) Explain the principles and characteristics of Markup Language.
16) Write a note on Thematic characteristics of spatial data.
17) What is grid based spatial analysis ?
18) Explain the concepts of multi criteria decision making.
19) Explain the spatial interpolation techniques.

P.T.O.

IV. Essay type questions : **(2×10=20)**

20) Describe the different spatial data modeling and add a note on advantages of raster and vector data models.

OR

Discuss the applications of GIS in natural disaster.

21) Describe the components of web GIS and add a note on their advantages and limitations.

OR

Write a detailed note on Decision Support Systems (DSS).

Reg. No. | | | | | | | | | | |

GIH 452

Second Semester M.Sc. Degree Examination, September/October 2022
(CBCS)
GEOINFORMATICS
Digital Image Processing

Time : 3 Hours Max. Marks : 70

I. Define **any five** of the following. **(5×2=10)**

1) Digital numbers
2) Temporal Resolution
3) Atmospheric absorption
4) NDWI
5) BIP image format
6) High-pass filtering
7) Signal to Noise ratio.

II. Write a short notes on **any five** of the following. **(5×4=20)**

8) Radiometric errors.
9) Band rationing.
10) Characteristics of Raster image.
11) Spatial pattern recognitions.
12) Moisture Stress Index (MSI).
13) Fourier transformation in image analysis.
14) Euclidean distance method.

P.T.O.

III. Answer **any four** of the following. **(4×5=20)**

15) Elaborate on Principle Component Analysis.

16) What is a noise ? How the noise is introduced in an image ?

17) Explain different types of image file formats.

18) Describe types of image enhancement techniques.

19) What is image acquisition ? Explain techniques of image acquisition.

IV. Essay type questions. **(2×10=20)**

20) Explain in detail about the different types of image supervised classification.

OR

Discuss in detail about the Geometric errors and corrections to be carried out while preprocessing the raw digital image.

21) Give a detailed account of various vegetation indices used in multi-image manipulation.

OR

Explain in detail the classification accuracy assessment by developing an error matrix.

Reg. No. | | | | | | | | | | |

GIH 451

Second Semester M.Sc. Degree Examination, September/October 2022
(CBCS)
GEOINFORMATICS
Database Management System and Spatial Statistics

Time : 3 Hours Max. Marks : 70

I. Define **any five** of the following : **(5×2=10)**

1) Database
2) Logical operators
3) Constants
4) Central tendency
5) Q-Mode
6) Spatial data
7) SPSS.

II. Write short notes on **any five** of the following : **(5×4=20)**

8) Components of database.
9) Projection operators.
10) Buffering of blocks.
11) Variables and data types.
12) Cluster analysis.
13) Factor analysis.
14) Statistical packages.

III. Answer the **any four** of the following : **(4×5=20)**

15) Write a note on File Directories and File Storage.
16) Explain the Database Recovery Techniques.
17) Explain the correlation co-efficient and its applications.
18) Write a note on spatial data.
19) Write short note on functions of SPSS.

P.T.O.

IV. Essay type questions : **(2×10=20)**

20) Discuss the basics of database models and also write a note on data mining and data warehousing.

OR

Describe the one-dimensional and two-dimensional arrays and write a note on declaring and initializing arrays.

21) Discuss the cluster analysis and interpretation of Q-mode and R-mode clusters with reference to spatial data.

OR

Describe the SPSS and also write a note on functions and applications of SPSS in geoinformatics.

Reg. No.

MGE 457

Second Semester M.Sc. Degree Examination, September/October 2022
MARINE GEOLOGY (CBCS)
Geo-sciences (Open Elective)

Time : 3 Hours Max. Marks : 70

I. Define/state the following. **(10×1=10)**

1) Lithosphere.
2) Era.
3) Cast and mould.
4) Granite.
5) Hydrosphere.
6) Mohorovicic discontinuity.
7) V-shaped valley.
8) Columnar joints.
9) Sand dune.
10) Beach.

II. Write short notes on **any five** of the following. **(5×4=20)**

11) Atmosphere.
12) Rock cycle.
13) Water resources on earth.
14) Earthquake.
15) Importance of meteorites.
16) Salt water intrusion.
17) Metallic minerals.
18) Composition of the core.

P.T.O.

III. Answer **any four** of the following. **(4×5=20)**

19) Describe primary structures in sedimentary rocks.

20) Coal formation of the earth.

21) Theories on origin of life.

22) Marine minerals.

23) Placer deposits.

24) Seawater as a resource – substantiate it with examples.

IV. Answer **any two** of the following. **(2×10=20)**

25) Describe how the history of the Earth based on the geological time scale.

OR

What are renewable and non-renewable resources of the Earth. Add a descriptive note on fossil fuels.

26) What is structural geology ? Explain in detail on classification and types of joints.

OR

Define fossil. Explain different types, preservation of fossils and important applications.

Reg. No. | | | | | | | | | |

MGS 455

Second Semester M.Sc. Degree Examination, September/October 2022
MARINE GEOLOGY
Remote Sensing and Photogrammetry

Time : 3 Hours Max. Marks : 70

I. Define/State the following : **(10×1=10)**

1) Electromagnetic spectrum.
2) GSLV.
3) Interferometry.
4) Tilt.
5) INSAT.
6) Nadir point.
7) POES.
8) Oblique photograph.
9) Stereoscope .
10) Mosaic.

II. Write short notes on **any five** of the following : **(5×4=20)**

11) Types of resolution in remote sensing.
12) IRS satellites.
13) Image displacement in aerial photos.
14) Spectral signature of the different features on the earth.
15) Black body radiation.
16) SAR and RAR.
17) Digital photogrammetry.
18) Optical remote sensing.

P.T.O.

III. Answer **any four** of the following : **(4×5=20)**

19) Energy interaction with atmosphere.

20) Aerial triangulation.

21) Factors affecting the vertical exaggeration.

22) Types of aerial photographs.

23) Platform and sensors.

24) Application of aerial photo on geomorphology.

IV. Write descriptive note on the following : **(2×10=20)**

25) a) Give an account on LANDSAT series and its application on various studies.

OR

b) Explain in detail the principles of thermal and microwave remote sensing.

26) a) Discuss in detail the role of Remote Sensing in shoreline change detection studies.

OR

b) What is aerial photograph ? Explain the elements of aerial photograph interpretation.

Reg. No. | | | | | | | | | | |

MGS 454

Second Semester M.Sc. Degree Examination, September/October 2022
MARINE GEOLOGY
(CBCS)
Meteorology and Climatology

Time : 3 Hours | Max. Marks : 70

Instruction : *Answer **all** the questions.*

I. Define/State the following : **(10×1=10)**

1) Meteorology
2) Precipitation
3) Geostrophic winds
4) Jet streams
5) Cloud burst
6) Meteorological hazards
7) Green house gases
8) Climatology
9) Pollution
10) Cyclones.

II. Write short notes on **any five** of the following : **(5×4=20)**

11) Significance of Meteorology
12) Earth's Radiation balance
13) Land-sea breezes
14) Thunder storms
15) Causes for climate variation
16) Climate modeling
17) Floods
18) Climatic zones of India.

P.T.O.

III. Answer **any four** of the following : **(4×5=20)**

19) Explain coupled ocean-atmosphere system.

20) Describe general weather system of India.

21) Discuss the utilities of Satellite in meteorology.

22) Explain climatic variations due to solar output.

23) Explain seasonal variations in the temperature.

24) Explain the distribution of precipitation over India.

IV. Answer **any two** of the following : **(2×10=20)**

25) a) Explain the Global Monsoon system in detail.

OR

b) Discuss weather monitoring and describe in detail weather modifications.

26) a) Give a detailed note on the intergovernmental panel on climate changes.

OR

b) Give a detailed explanation on the classification of continental and oceanic climates.

Reg. No. | | | | | | | | | |

MGS 453

II Semester M.Sc. Degree Examination, September/October 2022
MARINE GEOLOGY
(CBCS)
Environmental Geology

Time : 3 Hours Max. Marks : 70

***Instruction** : Answer **all** the questions.*

I. Define/State the following : **(10×1=10)**

1) Surface water bodies
2) Hydrologic cycle
3) Precipitation
4) Epicenter
5) Ozone layer
6) Landslides
7) Estuaries
8) Heat waves
9) Hydrographs
10) Acid rain.

II. Write short notes on **any five** of the following : **(5×4=20)**

11) Composition of mantle and core.
12) Seismic zones of India.
13) Causes of landslides.
14) Soil Classification.
15) Silting of reservoirs.
16) Urban heat Islands.
17) Volcanic eruption.
18) Soil conservation measures.

P.T.O.

III. Answer **any four** of the following : **(4×5=20)**

19) Enumerate the various types of natural hazards.

20) Explain the interior of the Earth with neat diagram.

21) What are the main causes of pollution of natural water ?

22) Describe the main causes and effects of global warming.

23) Describe the factors that affect runoff and stream discharge.

24) Explain the chemistry of hard water and soft water.

IV. Answer **any two** of the following : **(2×10=20)**

25) Discuss the scope, importance and the application of environmental geology. How is it related to human being ?

OR

Explain greenhouse gases and their effects.

26) Explain the causes and effects of soil erosion.

OR

Describe the Environmental factors to be considered in selecting site for the construction of dam and reservoirs.

Reg. No. | | | | | | | | | |

MGH 451

Second Semester M.Sc. Degree Examination, September/October 2022
(CBCS)
MARINE GEOLOGY
Structural Geology and Hydrogeology

Time : 3 Hours Max. Marks : 70

Instruction : *Answer **all** the questions.*

I. Define/state the following : **(10×1=10)**

1) Graded bedding
2) Dip and strike
3) Axis and axial plane
4) Torsion force
5) Master joints
6) Aquiclude
7) Specific capacity
8) Drainage basin
9) Spring
10) Piezometric surface.

II. Write short notes on **any five** of the following : **(5×4=20)**

11) Relationship of structural geology with other branches of geology.
12) Stress and strain diagram.
13) Recognition of unconfirmity in the field.
14) Mechanism of faulting.
15) Types of aquifer.
16) Rainwater harvesting.
17) Physical and chemical properties of water.
18) Porosity and permeability.

P.T.O.

III. Answer **any four** of the following : **(4×5=20)**

19) Ramsay's classification of fold.

20) Genetic classification of faults.

21) Types of unconformity.

22) Artificial recharge of groundwater.

23) Darcy's law and its validity.

24) Electrical resistivity method in groundwater investigation.

IV. Answer the following : **(2×10=20)**

25) What is a fold ? Give the classification of folds with neat diagrams and label the parts.

OR

What are joints ? Give the classification of joints with neat diagrams.

26) Discuss in detail the saline water intrusion phenomenon and how it affects the coastal groundwater system.

OR

Explain in detail various sources and causes of groundwater pollution. Discuss about its affect on human health.

Reg. No. | | | | | | | | |

MGS 406

I Semester M.Sc. Degree Examination, May 2022
(CBCS)
MARINE GEOLOGY
Geomorphology and Geodynamics

Time : 3 Hours | Max. Marks : 70

Instruction : *Answer **all** the questions.*

I. Define/state the following : **(10×1=10)**

1) Karst topography
2) Alluvial fan
3) Mass wasting
4) Moraines
5) Bajada
6) Mid-oceanic ridges
7) Paleomagnetism
8) Rift valley
9) Major plates
10) Mohorovicic discontinuity.

II. Write short notes on **any five** of the following : **(5×4=20)**

11) Isostacy
12) Plate boundaries
13) Concept of super continent
14) Magnetic reversal
15) Applications of geomorphology in mineral prospecting
16) Endogenetic and exogenetic processes
17) Glacial landforms
18) Different types of sand dunes.

P.T.O.

III. Answer **any four** of the following : **(4×5=20)**

19) Concepts in geomorphology.

20) Seismic zones of India.

21) Internal structure of the Earth.

22) Geomorphic cycle.

23) How structures control the development of landforms ?

24) What is multicyclic landform?

IV. Answer the following : **(2×10=20)**

25) Discuss in detail about various types of coastal erosional landforms with neat sketches.

OR

Discuss various desert geomorphic features.

26) Discuss in detail the concept of plate tectonics.

OR

Discuss in detail the concept of continental drift. Add a note on sea-floor spreading.

Reg. No. | | | | | | | | |

MGH 403

First Semester M.Sc. Degree Examination, May 2022
(CBCS)
MARINE GEOLOGY
Stratigraphy and Palaeontology

Time : 3 Hours Max. Marks : 70

***Instruction** : Answer **all** the questions.*

I. Define/state the following : **(10×1=10)**

1) Rock units
2) Bed
3) Mass extinction
4) Shield
5) Infra-trappean
6) Petrification
7) Suture line
8) Genera
9) Stratigraphic correlation
10) Fossil Algae.

II. Write short notes on **any five** of the following : **(5×4=20)**

11) Geological time scale
12) Gondwana group
13) Kaladgi group
14) Quaternary period
15) Origin of life
16) Spores and pollen
17) Plants fossil
18) Siwalik fauna.

P.T.O.

III. Answer **any four** of the following : **(4×5=20)**

19) Physiographic division of India

20) K/T boundary problems of South India

21) Indo-Gangetic plains

22) Methods of fossilization

23) Morphology of ostracodes

24) Application of microfossils in earth sciences.

IV. Answer the following : **(2×10=20)**

25) Write an essay on the distribution and origin of Deccan trap and add a note on its age with special reference to the recent research investigations.

OR

Discuss the distribution of Archaean formations in the Indian shield with special reference to South India.

26) Describe the morphological features of foraminifera. Mention their importance in the oil exploration.

OR

Explain the morphological features of Trilobites and add a note on their distribution and usefulness in stratigraphic correlation.

Reg. No. | | | | | | | | |

MGH 402

First Semester M.Sc. Degree Examination, May 2022
(CBCS)
MARINE GEOLOGY
Petrology

Time : 3 Hours | Max. Marks : 70

Instruction : *Answer **all** the questions.*

I. Define/state the following : **(10×1=10)**

1) Ultramafic rocks.
2) Phacolith.
3) Texture.
4) Ripple mark.
5) Dolostone.
6) Metamorphism.
7) Isograd.
8) Gravity settling.
9) Types of magma.
10) Kimberlite.

II. Write short notes on **any five** of the following : **(5×4=20)**

11) Magma mixing.
12) Sill and Dyke.
13) Acidic rocks.
14) Sediments.
15) Limestone and Marbles.
16) Lineation and Foliation.
17) Granulites.
18) Contact metamorphism.

P.T.O.

III. Answer **any four** of the following : **(4×5=20)**

19) Bowens reaction series.

20) Concordant igneous forms.

21) Basalts.

22) Arenites.

23) Ocean floor metamorphism.

24) Physical properties of magma.

IV. Answer the following : **(2×10=20)**

25) Explain the IUGS classification of igneous rocks.

OR

Explain the primary structures of sedimentary rocks.

26) Write a detailed note on agents of metamorphism.

OR

Describe the different types of igneous textures with neat sketch.

Reg. No. | | | | | | | | | | |

MGH 401

First Semester M.Sc. Degree Examination, May 2022
(CBCS)
MARINE GEOLOGY
Mineralogy and Geochemistry

Time : 3 Hours Max. Marks : 70

***Instruction** : Answer **all** the questions.*

I. Define/State the following : **(10×1=10)**

1) Cosmogenic nuclides.
2) Isomorphism.
3) Rock forming minerals.
4) Zeolites.
5) Double refraction in minerals.
6) Rare earth elements.
7) Piezoelectricity.
8) Europium anomaly.
9) Most abundant elements in the universe.
10) Siderolite.

II. Write short notes on **any five** of the following : **(5×4=20)**

11) Elements of symmetry.
12) Feldspar group of minerals.
13) Crystallographic system.
14) Magnetic properties of minerals.
15) Chondrites.
16) Internal composition of the earth.
17) Application of radionuclides.
18) Behaviour of elements during weathering.

P.T.O.

III. Answer **any four** of the following : **(4×5=20)**

19) Pyroxene group of mineral.

20) Aluminosilicate group of minerals.

21) Bragg's law and its applications in mineralogy.

22) Trace elemental distributions in igneous rocks.

23) Applications of stable isotopes.

24) Composition and classification of meteorites.

IV. Answer the following : **(2×10=20)**

25) Describe the optical properties of minerals. How they are useful in classification of minerals ?

OR

Describe the silicate structure of minerals and add a note on classification of minerals with a few examples.

26) Distinguish between chemical and geochemical classification of elements. How geochemical differentiation of elements takes place in the earth ?

OR

Discuss the biogeochemical cycling of elements by considering an integrated approach with some examples.