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**M.Sc. (Semester - I) (New) (CBCS) Examination: March/April-2023
GEOINFORMATICS**

Introduction to Geography (MSC17101)

Day & Date: Wednesday, 19-07-2023
Time: 03:00 PM To 06:00 PM

Max. Marks: 80

- Instructions:** 1) Q. Nos. 1 and. 2 are compulsory.
2) Attempt any three questions from Q. No. 3 to Q. No. 7
3) Figure to right indicate full marks.

Q.1 A) Choose the correct alternative.

10

- 1) Which of the following local winds is also called Doctor Wind"?

a) Harmattan	b) Mistral
c) Bora	d) Chinook

- 2) Layer of atmosphere in which Ozone layer lies is;

a) Exosphere	b) Mesosphere
c) Troposphere	d) Stratosphere

- 3) Rural Infrastructure development fund (RIDF) was instituted by which of the following _____.

a) NABARD	b) RBI
c) Government of India	d) Finance Ministry

- 4) The reason for soil pollution is _____.

a) Ozone	b) Aerosol
c) PAN	d) Acid rain

- 5) Socio-economic impact due construction of multipurpose dams in river valise is mainly concern for project affected people.

a) True	b) False
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- 6) Which of the following is not a "lowest" cloud in the atmosphere?

a) Stratocumulus	b) Cirrostratus
c) Cumulus	d) Stratus

- 7) _____ plays an important part in completion of hydrological cycle.

a) Coriolis force	b) Buoyant force
c) Frictional force	d) Air-Resistance force

- 8) The semi-arid tropical savanna region of Africa is known as _____.

a) Sahara	b) Katanga Plateau
c) Sahel	d) Whales

- 9) What is the term for the strong wind that blows about 10km above the Earth?

a) Jet stream	b) Gulf Stream
c) Cold, stream	d) Wind stream

- 10) What tool measures air pressure?

a) Thermometer	b) Psychrometer
c) Barometer	d) Anemometer

- B) Fill in the blanks.** **06**
- 1) A place where an earthquake originates is called _____.
 - 2) The lowest layer of the Atmosphere is _____.
 - 3) Man-made disaster is caused by _____.
 - 4) The northern plain of India is formed of Alluvial soil. (True/False)
 - 5) Images of weather systems on television come from weather satellites. (True/False)
 - 6) Instrument used to measure earthquake is known as quake graph.
- Q.2 Answer the following.** **16**
- a) What is Weather?
 - b) Types of clouds.
 - c) Troposphere.
 - d) What is cyclone?
- Q.3 Answer the following.**
- a) Structure of Atmosphere. **08**
 - b) Define Soil. Explain Profile and Horizons. **08**
- Q.4 Answer the following.**
- a) Types of winds. **08**
 - b) What are Natural hazards, explain any one natural Hazard. **08**
- Q.5 Answer the following.**
- a) Different types of Soil. **08**
 - b) Heat Budget of Atmosphere. **08**
- Q.6 Answer the following.**
- a) Explain man-made hazards. **08**
 - b) What is transport? What are the types of transport. **08**
- Q.7 Answer the following.**
- a) Major agricultural types in India. **08**
 - b) Explain functional classification of Town. **08**

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**M.Sc. (Semester - I) (New) (CBCS) Examination: March/April-2023
GEOINFORMATICS**

Fundamentals of Geoinformatics (MSC17102)

Day & Date: Thursday, 20-07-2023
Time: 03:00 PM To 06:00 PM

Max. Marks: 80

- Instructions:** 1) Q. Nos. 1 and. 2 are compulsory.
2) Attempt any three questions from Q. No. 3 to Q. No. 7
3) Figure to right indicate full marks.

Q.1 A) Fill in the blanks by choosing correct alternatives given below. 10

- 1) _____ was 1st used the term geographic information system.
 - a) Roger Tomlinson
 - b) John Snow
 - c) Rachael MacDonnell
 - d) Jack Dangerman
- 2) GLONASS stand for _____.
 - a) Global navigation satellite service
 - b) Global navy system
 - c) Global network satellite system
 - d) Global navigation satellite system
- 3) The _____ uses points and their X, Y coordinates to contrast spatial feature of point, line and areas.
 - a) Vector data model
 - b) Raster data model
 - c) Attribute data model
 - d) Pixel data model
- 4) FCC is abbreviation for _____.
 - a) False Colour Complex
 - b) Few colours composites
 - c) False Colour Composite
 - d) Fast Colour Composite
- 5) GPS was invented in _____.
 - a) 1973
 - b) 1980
 - c) 1990
 - d) 1060
- 6) The instrument which provides electromagnetic radiation of specified wavelength or a band of wavelength to illuminate the earth surface, are called _____.
 - a) LiDAR Sensor
 - b) Platform
 - c) GPS
 - d) Sensor
- 7) Blue, green, and red are the _____ of the visible spectrum.
 - a) secondary frequent
 - b) primary frequent
 - c) secondary colours
 - d) primary colours
- 8) An aerial photograph taken with an intentional deviation of 15° to 30° in the camera axis from the vertical axis is referred to as the _____.
 - a) high oblique photograph
 - b) low oblique photograph
 - c) Vertical Photographs
 - d) Deviates oblique photograph
- 9) The relation between velocity, wavelength and frequency can be given as _____.
 - a) $\lambda = c/r$
 - b) $\lambda = c/f$
 - c) $\lambda = c/h$
 - d) $\lambda = h * c/f$

- 10) The segments present in GPS are _____.
- a) Ground control
 - b) Space
 - c) User equipment
 - d) All the above

B) Fill in the blanks OR write true / False. 06

- 1) _____ represented the first unmanned satellite designed to acquire data about the earth resources on a systematic, repetitive, medium resolution, multispectral basis.
- 2) _____ is the common area on two successive photographs in the flight direction.
- 3) The GPS receiver has locked on to 40 satellites.
 - a) True
 - b) False
- 4) Active sensors, such as laser radar, illuminate the object of study with their own artificially produced radiation and record the reflected component.
 - a) True
 - b) False
- 5) The point data feature can be used to represent Volume.
 - a) True
 - b) False
- 6) Aerial photographs and satellite images contain a detailed record of the earth surface features.
 - a) True
 - b) False

Q.2 Answer the following 16

- a) Define remote sensing & GIS
- b) Tone and Texture
- c) Vertical photographs
- d) Flying Conditions of Aerial Photography

Q.3 Answer the following 08

- a) Explain in details stages of remote sensing. 08
- b) Note on nature and sources of errors in GPS signals. 08

Q.4 Answer the following 08

- a) Write in brief airborne and space borne platform. 08
- b) Explain in detail EMR. 08

Q.5 Answer the following 08

- a) Spectral reflectance characteristics of water, vegetation and soil. 08
- b) Define Aerial Photography & advantages of Aerial Photography. 08

Q.6 Answer the following 08

- a) Write short note on Total station & DGPS. 08
- b) Write in brief component of GIS. 08

Q.7 Answer the following 08

- a) Problem Associated with Film and Camera in aerial photography. 08
- b) Explain in details in passive remote sensing with neat diagram. 08

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**M.Sc. (Semester - I) (New) (CBCS) Examination: March/April-2023
GEOINFORMATICS**

Computer Applications in Earth Sciences (MSC17103)

Day & Date: Friday, 21-07-2023
Time: 03:00 PM To 06:00 PM

Max. Marks: 80

- Instructions:** 1) Q. Nos. 1 and. 2 are compulsory.
2) Attempt any three questions from Q. No. 3 to Q. No. 7
3) Figure to right indicate full marks.

Q.1 A) Multiple Choice questions.

10

- 1) help menu is available at which button?
 - a) end
 - b) start
 - c) turnoff
 - d) restart
- 2) _____ is the set of instruction given to the computer to perform a Specific task.
 - a) Monitor
 - b) Hardware
 - c) Software
 - d) Printer
- 3) _____ is the most famous type of operating system for personal Computer.
 - a) Linux
 - b) Unix
 - c) Microsoft windows
 - d) mac os
- 4) Which of the following does not store data permanently?
 - a) ROM
 - b) RAM
 - c) Floppy disk
 - d) Hard disk
- 5) WAN stands for _____.
 - a) Wap Area Network
 - b) Wide Area Network
 - c) Wide Array Net
 - d) Wireless Area Network
- 6) Which of the following is NOT associated with computer?
 - a) Screen
 - b) Mouse
 - c) Bit
 - d) Pencil
- 7) The CPU and memory are located on the:
 - a) expansion board
 - b) Motherboard
 - c) storage device
 - d) output device
- 8) Who is the father of computer?
 - a) Allen Turing
 - b) Charles Babbage
 - c) simur Cray
 - d) Augusta Adaming
- 9) Which one of the following is NOT a computer language _____.
 - a) MS-EXCEL
 - b) BASIC
 - c) COBOL
 - d) C++
- 10) Using Microsoft word we can simply _____.
 - a) paste picture
 - b) Type
 - c) format a text
 - d) all of these

- B) Fill in the blacks OR True / False. 06**
- 1) windows is an example of system software. (True/false)
 - 2) DBMS is a software for creating and managing database. (true/false)
 - 3) you need not have an email address to send and receive emails. (True/false)
 - 4) WWW stands for _____.
 - 5) The basic goal of computer process is to convert data into _____.
 - 6) Ctrl +p keys used for open a _____ command.
- Q.2 Answer the following. 16**
- a) List of output devices of computer
 - b) What is internet and web links?
 - c) What is natural joint?
 - d) Union
- Q.3 Answer the following. 08**
- a) Discuss computer applications in geological mapping. 08
 - b) Explain types of storage device. 08
- Q.4 Answer the following. 08**
- a) Uses of GIS application in forestry. 08
 - b) What are advantages and disadvantages of relational models? 08
- Q.5 Answer the following. 08**
- a) What is LULC? Which type of computer applications are used in LULC studies. 08
 - b) What do you mean SQL? Brief note on process of SQL? 08
- Q.6 Answer the following. 08**
- a) Write full note on Central Processing unit (CPU). 08
 - b) Explain the role of administrator in DBMS. 08
- Q.7 Answer the following. 08**
- a) Advantages of hierarchical models. 08
 - b) Describe operation tables. 08

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M.Sc. (Semester - I) (New) (CBCS) Examination: March/April-2023
GEOINFORMATICS
Introduction to Geology (MSC17109)

Day & Date: Saturday, 22-07-2023
 Time: 03:00 PM To 06:00 PM

Max. Marks: 80

- Instructions:** 1) Q. Nos.1 and.2 are compulsory.
 2) Attempt any three questions from Q. No. 3 to Q. No. 7
 3) Figure to right indicate full marks.

Q.1 A) Choose the correct alternative 10

- 1) What is the chemical composition of Quartz?
 - a) SiO_4
 - b) Si_2O_3
 - c) SiO_2
 - d) Al_2O_3
- 2) Which of the following minerals display one direction of well developed cleavage?
 - a) Quartz
 - b) Calcite
 - c) Galena
 - d) Biotite
- 3) Which of the following minerals belong to the carbonate group?
 - a) Pyrite
 - b) Halite
 - c) Calcite
 - d) Apatite
- 4) The term "intrusion" is basically associated, with. which, type of rock?
 - a) Igneous rock
 - b) Sedimentary rock
 - c) Metamorphic rock
 - d) Not associated with any type of rock
- 5) The dip which involves tectonic forces is_____
 - a) Primary dip
 - b) Secondary dip
 - c) Local and Regional dip
 - d) No dip involves tectonic forces
- 6) What are the undulations or bends developed in rocks called?
 - a) Faults
 - b) Joints
 - c) Folds
 - d) Unconformity
- 7) Which type of deformation is folding?
 - a) Brittle
 - b) Ductile
 - c) Tensile
 - d) Malleable
- 8) What is the key word in the definition of fault?
 - a) Fracture
 - b) Movement
 - c) Both fracture and movement
 - d) Dip
- 9) The underground routes or passages driven through the ground without disturbing overlying soil cover are called_____
 - a) Bridges
 - b) Passages
 - c) Tunnels
 - d) Sub-routes

- 10) A solid barrier constructed at a suitable location across a river valley to impound water is called _____.
- a) Reservoir
 - b) Dam
 - c) Bridge
 - d) Retaining wall

B) Fill in the blanks**06**

- 1) The softest mineral is _____.
- 2) The streak given by the quartz group is _____.
- 3) The dip of a layer measured in the direction that is at the right angle to strike is _____.
- 4) The minimum number of limbs for a fold are _____.
- 5) In _____ state in India has the most number of large dams.
- 6) Tunnels associated with hydropower generation are called _____.

Q.2 Answer the following.**16**

- a) Uses of toposheets.
- b) What is geological map
- c) Define minerals and write a note on quartz mineral.
- d) Write a note on Plutonic Igneous Rocks

Q.3 Answer the following.**16**

- a) Define Unconformities and types of Unconformities.
- b) Engineering properties of building rocks.

Q.4 Answer the following.**16**

- a) Explain in detail various types of tunnels.
- b) What are the types of metamorphism?

Q.5 Answer the following.**16**

- a) Pyroxene group of minerals.
- b) Mica group of minerals

Q.6 Answer the following.**16**

- a) Site selection aspects for construction of Dam.
- b) Define Joints and types of Joints

Q.7 Answer the following.**16**

- a) Explain structures of igneous rocks.
- b) Explain structures of sedimentary rocks.

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M.Sc. (Semester - II) (New) (CBCS) Examination: March/April-2023
GEOINFORMATICS
Digital Image Processing (MSC17201)

Day & Date: Wednesday, 19-07-2023
 Time: 11:00 AM To 02:00 PM

Max. Marks: 80

- Instructions:** 1) Q. Nos. 1 and. 2 are compulsory.
 2) Attempt any three questions from Q. No. 3 to Q. No. 7
 3) Figure to right indicate full marks.

Q.1 A) Choose the correct alternative. 10

- 1) Which software is used for image processing.
 - a) ERDAS
 - b) Q-GIS
 - c) Both A & B
 - d) None of the above
- 2) What is georeferencing?
 - a) Converting data to a feature class
 - b) Aligning your data with a location on the Earth's surface
 - c) Projecting your data so that it has no distortion
 - d) None of these
- 3) Enhancement techniques are _____.
 - a) Density slicing
 - b) Contrast stretch
 - c) Edge enhancement
 - d) All of the above
- 4) Training stage, classification stage, output stage are the stage of _____.
 - a) Unsupervised classification
 - b) Hybrid classification
 - c) Supervised classification
 - d) Texture classification
- 5) _____ enhancement techniques expand the ranges of brightness values in an image.
 - a) Density slicing
 - b) Contrast stretch
 - c) Histogram Equalization
 - d) All of the above
- 6) Errors in the image matrix known as
 - a) Kappa coefficient
 - b) Kappa matrix
 - c) Radiometric error
 - d) Geometric error
- 7) _____ is a widely used decision rule based on simple Boolean "and/or" logic.
 - a) Maximum likelihood classifier
 - b) Minimum distance to mean classifier
 - c) k-mean classifier
 - d) Hybrid classifier
- 8) _____ are the specific pixel in the input image for which the output map coordinates are known.
 - a) Gravity Control Points
 - b) General Control Points
 - c) Ground Control Points
 - d) Gross Control Points

- 9) Nearest neighbour, bilinear interpolation techniques, cubic convolution are the methods of _____
- a) Georeferencing b) Correction
c) Resembling d) None of the above
- 10) In digital image, data record in the digital number per pixel called as _____.
- a) Brightness value b) Numeric value
c) DIP value d) Attribute value

B) Fill in the blanks OR write true/false.

06

- 1) A kappa value of 1 represents perfect agreement, while a value of 0 represents no agreement.
- a) True b) False
- 2) Radiometric correction is to avoid geometric errors or distortions, while radiometric correction is to remove geometric distortion.
- a) True b) False
- 3) Training sites can contain two objects with different DN values.
- a) True b) False
- 4) Removal of cloud cover from the images will not disturb the objects in the images.
- a) True b) False
- 5) Supervised classification is type of _____.
- 6) _____ also known as confusion or contingency table.

Q.2 Answer the following.

16

- a) Digital image processing
b) Fuzzy logic
c) Digital image enhancement
d) Euclidian distance

Q.3 Answer the following.

16

- a) What is digital image classification? Explain the supervised classification.
b) Discuss in brief radiometric errors and corrections.

Q.4 Answer the following.

16

- a) Write note on histogram Equalization
b) Write a brief note on hybrid classification.

Q.5 Answer the following.

16

- a) Edge enhancement
b) Textural classification approach

Q.6 Answer the following.

16

- a) Advantage and disadvantage of unsupervised classification
b) Linear contrast enhancement

Q.7 Answer the following.

16

- a) Discuss in brief geometric errors and corrections.
b) Explain Non-linear Contrast Enhancement with methods

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M.Sc. (Semester - II) (New) (CBCS) Examination: March/April-2023
GEOINFORMATICS
Spatial Analysis (MSC17202)

Day & Date: Sunday, 23-07-2023
 Time: 11:00 AM To 02:00 PM

Max. Marks: 80

- Instructions:** 1) Q. Nos. 1 and. 2 are compulsory.
 2) Attempt any three questions from Q. No. 3 to Q. No. 7
 3) Figure to right indicate full marks.

Q.1 A) Fill in the blanks by choosing correct alternatives given below. 10

- 1) _____ deals with the spatial distribution of surface information in terms of a three-dimensional structure.
 - a) Network Analysis
 - b) Spatial Analysis
 - c) Site Suitability Analysis
 - d) Surface Analysis
- 2) _____ is a high level computational language used for performing cartographic spatial analysis using raster data.
 - a) C
 - b) CPP
 - c) Map algebra
 - d) All of above
- 3) _____ operations are procedures, which correspond to queries and alterations of data that operates on a single data layer.
 - a) Multiple Layer
 - b) Single Layer
 - c) Overlay
 - d) None of these
- 4) _____ functions that works on every single cell.
 - a) Focal
 - b) Global
 - c) Local
 - d) Zonal
- 5) Data that describe the characteristics of spatial features.
 - a) Coverage
 - b) Data Exploration
 - c) Geospatial Data
 - d) Attribute data
- 6) The first use of map-based analysis by Dr. John snow of London was in _____.
 - a) 1854
 - b) 1754
 - c) 1984
 - d) 1870
- 7) C2 matrix = _____.
 - a) $C1 \times C1$
 - b) $C2 \times C2$
 - c) $C3 \times C3$
 - d) $C4 \times C4$
- 8) Data-centered query and analysis is known as _____.
 - a) Discrete Structure
 - b) GIS modelling
 - c) Data exploration
 - d) Attribute data
- 9) DEM stands for _____.
 - a) Digital Elevation Meter
 - b) Distance Elevation Model
 - c) Digital Elevation Model
 - d) Distance Elevation Meter
- 10) A data model that allows the use of linearly measured data on a coordinate system.
 - a) Dynamic segmentation model
 - b) Geodatabase data
 - c) GPS data
 - d) None of the above

- B) Fill in the blanks** **06**
- 1) A computer system for capturing, storing, querying, analyzing, and displaying geographically referenced data is _____.
 - 2) Data that describe both the locations and characteristics of spatial features on the Earth's surface is _____.
 - 3) The process of using GIS in building models with spatial data is _____.
 - 4) Object based true data model uses objects to organize spatial data and stores spatial data and attribute data in a single system.
 - a) True b) False
 - 5) GIS deals with spatial data.
 - a) True b) False
 - 6) 'Metadata' is field data.
 - a) True b) False
- Q.2 Answer the following** **16**
- a) Alpha and Gamma indices
 - b) Dissolve and Eliminate
 - c) C_1 and C_2 matrix
 - d) Connectivity
- Q.3 Answer the following**
- a) Single layer operations with diagram **08**
 - b) Write a full note on Grid Based Operations. **08**
- Q.4 Answer the following**
- a) Describe with neat labelled diagram the difference between Zonal and Local Function. **08**
 - b) Difference between Cluster and Random distribution Role model. **08**
- Q.5 Answer the following**
- a) Line in Polygon analysis with neat labelled diagram **08**
 - b) Significance of Geostatistical analysis **08**
- Q.6 Answer the following**
- a) Method of Evaluating point pattern **08**
 - b) Overlay operation **08**
- Q.7 Answer the following**
- a) Significance of spatial analysis **08**
 - b) Global Functions **08**

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M.Sc. (Semester - II) (New) (CBCS) Examination: March/April-2023
GEOINFORMATICS

Advanced Techniques in GIS (MSC17206)

Day & Date: Tuesday, 25-07-2023
 Time: 11:00 AM To 02:00 PM

Max. Marks: 80

- Instructions:** 1) Q. Nos. 1 and. 2 are compulsory.
 2) Attempt any three questions from Q. No. 3 to Q. No. 7
 3) Figure to right indicate full marks.

Q.1 A) Choose the correct alternative.

10

- 1) _____ techniques are commonly used to represent and analyse terrain data.
 - a) Digital Elevation Model (DEM)
 - b) Triangular Irregular Network (TIN)
 - c) Variance Filter
 - d) Slope and Aspect
- 2) Which of the following is a method used for Knowledge Discovery in Spatial Databases?
 - a) Spatial Classification
 - b) Spatial Indexing
 - c) Spatial Interpolation
 - d) Spatial Querying
- 3) Which spatial mining task is used to discover associations or relationships among spatial objects?
 - a) Spatial Classification
 - b) Spatial Clustering
 - c) Association Rules
 - d) Spatial Querying
- 4) _____ technology is commonly used in Location Based Services to determine a user's location.
 - a) Bluetooth
 - b) Wi-Fi
 - c) GPS (Global Positioning System)
 - d) NFC (Near Field Communication)
- 5) Which of the following is a key component of ERP in GIS?
 - a) Data visualization tools
 - b) Project management software
 - c) Geographic Information System Software
 - d) Customer relationship management Software
- 6) _____ industry sectors benefit from the work of the Open Geospatial Consortium.
 - a) Healthcare and pharmaceuticals
 - b) Entertainment and gaming
 - c) Transportation and logistics
 - d) Retail and e-commerce
- 7) _____ is Keyhole Markup Language (KML).
 - a) A programming language used for web development
 - b) A markup language used for describing geographic data
 - c) A scripting language for creating animations
 - d) A language used for creating interactive user interfaces

- 8) What is the primary purpose of a Spatial Decision Support System (SDSS)?
 - a) To collect and store spatial data
 - b) To analyse and visualize spatial data
 - c) To create maps and cartographic representations
 - d) To facilitate data entry and database management
- 9) _____ represents the steepness and orientation of a terrain surface.
 - a) Variance Filter
 - b) Slope and Aspect
 - c) Relief
 - d) Hill Shading
- 10) _____ methods is used to estimate values at unknown locations within a set of known data points.
 - a) Extrapolation
 - b) Interpolation
 - c) Regression
 - d) Smoothing

B) Fill in the blanks OR write true / False.

06

- 1) Slope and aspect are two different measures calculated from elevation data to analyze terrain characteristics.
- 2) Relief refers to the variation in elevation within a given area.
- 3) The Internet and GIS have a long history of integration, with GIS services being offered over the web for data sharing, analysis, and visualization.
- 4) The Open Geospatial Consortium (OGC) is an organization that develops and promotes open standards for geospatial data and services interoperability.
- 5) Spatial data mining is a method of knowledge discovery specifically designed for analyzing non-spatial databases.
- 6) Spatial classification is a task in spatial data mining that involves assigning spatial objects into predefined classes or categories.

Q.2 Answer the following.

16

- a) Write a short note on rating method.
- b) Geographic Markup Language.
- c) Web GIS.
- d) Web Map Services.

Q.3 Answer the following.

- a) What is hill shading and how does it enhance the visualization of terrain in GIS? **08**
- b) Explain the basics of fuzzy logic and its applications in GIS decision-making processes. **08**

Q.4 Answer the following.

- a) What is WEB GIS and how does it differ from traditional GIS? **08**
- b) Explain the concept of open-source GIS and provide an overview of Geoserver as an example. **08**

Q.5 Answer the following.

- a) What is the importance of efficiency and effectiveness in spatial decision making? **08**
- b) What are the advantages of using spatial DSS in comparison to manual decision-making processes? **08**

Q.6 Answer the following.

- a) Explain the key components of GIS and their roles in spatial data management. **08**
- b) Explain the rating method for estimating weights in geo informatics, and provide examples of its application. **08**

Q.7 Answer the following.

- a) What is interpolation and how is it used in geographic information systems (GIS)? **08**
- b) Explain the concept of Digital Elevation Model (DEM) and its applications in GIS. **08**

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Set **P**

M.Sc. (Semester - III) (New) (CBCS) Examination: March/April-2023

GEOINFORMATICS

Advance Techniques in Remote Sensing (MSC017301)

Day & Date: Monday, 10-07-2023

Max. Marks: 80

Time: 11:00 AM To 02:00 PM

- Instructions:** 1) Q.1 and 2 are compulsory.
 2) Attempt any three questions from Q. 3 to 7.
 3) Figures to the right indicate full marks.

Q.1 A) Choose the correct alternative 10

- 1) Formation of snow occurs if the cloud temperature is _____.
 - a) Just above the freezing point
 - b) At the freezing point
 - c) Below the freezing point
 - d) None of these
- 2) Coherence of two electromagnetic waves takes place if their phase difference is:
 - a) Constant in time
 - b) Constant in space
 - c) Constant in time and space
 - d) None of these
- 3) Repetitive observations of the same area at equal interval of time are useful to monitor the dynamic phenomena:

a) Cloud evolution	b) Vegetative cover
c) Snow cover	d) All of these
- 4) Which one of the following parameters is considered to determine the reflectance of a vegetation canopy?

a) Solar zenith angle	b) Azimuth angle
c) Look angle	d) All of these
- 5) A perfectly black body:
 - a) Is a diffuse emitter
 - b) Absorbs all the radiations of every wave length
 - c) Emits power of every wave length
 - d) All the above
- 6) In case of reflection and refraction of electromagnetic radiation,
 - a) Angle of incidence = angle of refraction
 - b) Angle of incidence = angle of reflection
 - c) Angle of refraction = sum of the angles of incidence and refraction
 - d) All the above

- 7) Which one of the following factors does not affect the scale of the air photographs?
 - a) Focal length
 - b) Flying height
 - c) Ground elevation
 - d) None of these
- 8) Which one of the following statements regarding remote sensing is correct?
 - a) The interaction of electromagnetic radiation with the target
 - b) The emission of electromagnetic radiation from the target
 - c) Both (a) and (b)
 - d) Neither (a) nor (b)
- 9) The ratio of the total solar radiant energy returned by a planetary body to the total radiant energy incident on the body, the called:
 - a) Reflectance
 - b) Reflectance factor
 - c) Albedo
 - d) None of these
- 10) The altitudinal distance of a geostationary satellite from the earth is about:
 - a) 26,000 km
 - b) 30,000 km
 - c) 36,000 km
 - d) 44,000 km

Q.1 B) Fill in the blanks OR write true / False.**06**

- 1) The degree of polarisation is a characteristic of the object which helps in the identification of the object
 - a) True
 - b) False
- 2) The changes in the polarisation of the radiation reflected or emitted by an object, is known as polarisation variation
 - a) True
 - b) False
- 3) For the same feature, the photograph taken from the satellite vertically above the aircraft, the height displacement is lesser than the aerial photograph.
 - a) True
 - b) False
- 4) Indian Space Research Organisation (ISRO) is responsible for the space technology and its application to various activities
 - a) True
 - b) False
- 5) The first man-made satellite, Sputnik-I was launched on 4th October 1959
 - a) True
 - b) False
- 6) Television Infrared Observation Satellite (TIROS) designed for meteorological observations, started systematic earth observations from space from 10 April 1960
 - a) True
 - b) False

Q.2 Answer the following.**16**

- a) What is active remote sensing?
- b) Scattering
- c) Supervised classification
- d) Spatial resolution

- Q.3 Answer the following.**
- a) What is digital image processing? **08**
 - b) Explain the Geometric errors and correction. **08**
- Q.4 Answer the following.**
- a) What is photogrammetry? **08**
 - b) SEASAT **08**
- Q.5 Answer the following.**
- a) What is multispectral remote sensing system? **08**
 - b) SHUTTELE **08**
- Q.6 Answer the following.**
- a) Explain supervised classification. **08**
 - b) Explain about EMR's interaction with atmosphere. **08**
- Q.7 Answer the following.**
- a) Discuss the history and development of remote sensing. **08**
 - b) Explain electromagnetic spectrum with a neat diagram. **08**

Set No.	
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M.Sc. (Semester - III) (New) (CBCS) Examination: March/April-2023
GEOINFORMATICS
Web GIS (MSC017302)

Day & Date: Tuesday, 11-07-2023
 Time: 11:00 AM To 02:00 PM

Max. Marks: 80

- Instructions:** 1) Q. Nos. 1 and. 2 are compulsory.
 2) Attempt any three questions from Q. No. 3 to Q. No. 7
 3) Figure to right indicate full marks.

Q.1 A) Choose the correct alternative. 10

- 1) Which Year WWW and first Web browser was introduced.
 - a) 1990
 - b) 1988
 - c) 1987
 - d) 1996
- 2) A 1999 World Health Organization report showed that in the year 1990, road accidents cause of death or disability were the ninth most significant cause of death or disability, and predicted that by 2020, this would move to _____ place.
 - a) First
 - b) Third
 - c) Sixth
 - d) None of these
- 3) To join the internet, the computer has to be connected to a _____.
 - a) internet architecture board
 - b) internet society
 - c) internet service provider
 - d) different computer
- 4) Which protocol assigns IP address to the client connected in the internet?
 - a) DHCP
 - b) IP
 - c) RPC
 - d) RSVP
- 5) Which of the following protocols is used in the internet?
 - a) HTTP
 - b) DHCP
 - c) DNS
 - d) DNS, HTTP and DNS
- 6) A 4-byte IP address consists of _____.
 - a) only network address
 - b) only host address
 - c) network address & host address
 - d) network address & MAC address
- 7) Which of the following are transport layer protocols used in networking?
 - a) TCP and FTP
 - b) UDP and HTTP
 - c) TCP and UDP
 - d) HTTP and FTP
- 8) In the network HTTP resources are located by _____.
 - a) uniform resource identifier
 - b) unique resource locator
 - c) unique resource identifier
 - d) union resource locator

- 9) In File Transfer Protocol, data transfer cannot be done in _____.
 - a) stream mode
 - b) block mode
 - c) compressed mode
 - d) message mode
- 10) WMTS Stand for
 - a) Web Map Tile Series
 - b) Web Map Transport Software
 - c) Web Map Tile Service
 - d) Website Main Server

B) Fill in the blanks OR Write True/False. 06

- 1) DSL stands for Digital Subscriber Line and ISP stands for Internet Service Provider.
 - a) True
 - b) False
- 2) Every computer connected to the internet must have an address for sending or receiving TCP packets.
 - a) True
 - b) False
- 3) In communications, a protocol refers to a set of rules and regulations that allow a network of nodes to transmit and receive information.
 - a) True
 - b) False
- 4) Google Earth Engine is open-source WEBGIS Platform.
 - a) True
 - b) False
- 5) A single hostname may correspond to a single IP address.
 - a) True
 - b) False
- 6) A list of 33 user services has been provided in the National ITS Program Plan.
 - a) True
 - b) False

Q.2 Answer the following. 16

- a) Write short note on Role of Intelligent Transportation System in WebGIS.
- b) Define IPV6.
- c) Write short note on distributed geographic information services.
- d) Write short note on inter networking layer.

Q.3 Answer the following. 08

- a) Explain in details Intelligent Transportation System (ITS) Architecture. 08
- b) Describe about Mobile GIS. 08

Q.4 Answer the following. 08

- a) Write short note Geoserver. 08
- b) What is the difference between TCP and UDM. 08

Q.5 Answer the following. 08

- a) Write a short note on FTP. 08
- b) Write a note Intelligent Transportation System. 08

Q.6 Answer the following. 08

- a) Write short note on any four ITS Services. 08
- b) Describe a DNS types. 08

Q.7 Answer the following. 08

- a) Write note on Data administration. 08
- b) Explain details of the Router and ISP. 08

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M.Sc. (Semester - III) (New) (CBCS) Examination: March/April-2023
GEOINFORMATICS
Geomorphology (MSC017306)

Day & Date: Wednesday, 12-07-2023
 Time: 11:00 AM To 02:00 PM

Max. Marks: 80

- Instructions:** 1) Q. Nos. 1 and. 2 are compulsory.
 2) Attempt any three questions from Q. No. 3 to Q. No. 7
 3) Figure to right indicate full marks.

Q.1 A) Fill in the blanks by choosing correct alternatives given below. 10

- 1) Normal cycle of erosion is related with _____.
 a) Glacial Erosion b) Wind Erosion
 c) Fluvial Erosion d) Marine
- 2) Which of the following are not sedimentary rock?
 a) Sandstone b) Limestone
 c) Marble d) Slate
- 3) What is the term for the general process by which rocks are broken down at the earth's surface?
 a) Deposition b) Erosion
 c) Lithification d) Weathering
- 4) A mass of ice that covers a large area and moves slowly.
 a) Gravity b) Glacier
 c) Sediment d) Wind
- 5) Which of the following rivers does not originate in India?
 a) Ganga b) Yamuna
 c) Brahmaputra d) Godavari
- 6) In mature stage what are the loop like channel patterns develop in rivers?
 a) Meanders b) Canyon
 c) Delta d) Cirque
- 7) Which type of mass movement moves the slowest?
 a) Mudflow b) Creep
 c) Slump d) Landslide
- 8) A deep valley characterized by step-step like slopes is known as _____.
 a) U-Shaped valley b) Gorge
 c) Blind valley d) Canyon
- 9) The layer of soil which the topsoil is found?
 a) Horizon A b) Horizon B
 c) Horizon C d) Horizon D or R
- 10) Who gave the theory of seafloor spreading?
 a) Arthur holmes b) Airy and pratt
 c) Harry hess d) Parker and morgan

B) Fill in the blanks**06**

- 1) The concept of geographical cycle of erosion was given by _____.
- 2) Laurasia and Gondwana land were separated by _____.
- 3) When water, ice and wind move particles of rock and soil from one place to another _____.
- 4) Carbon dioxide in rainwater dissolves limestone is known as Biological weathering.
 - a) True
 - b) False
- 5) The scale used for measuring the intensity of the earthquake is watt.
 - a) True
 - b) False
- 6) A Fast moving mix of water, soil and rocks would be mudflow.
 - a) True
 - b) False

Q.2 Answer the following**16**

- a) Give any four Fundamental concept of Geomorphology.
- b) Application of geomorphology in settlement.
- c) Chemical weathering
- d) Rejuvenation

Q.3 Answer the following

- a) Describe nature and scope of Geomorphology.
- b) Discuss the process of Soil formation.

08**08****Q.4 Answer the following**

- a) Explain the mass movement.
- b) Continental Drift theory.

08**08****Q.5 Answer the following**

- a) Describe the types weathering.
- b) Explain Strahler's method.

08**08****Q.6 Answer the following**

- a) Cycle of erosion.
- b) Explain various types of drainage pattern.

08**08****Q.7 Answer the following**

- a) Development and classification of river valleys.
- b) Explain the Karst topography.

08**08**

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No.

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M.Sc. (Semester – IV) (New) (CBCS) Examination: March/April-2023
GEOINFORMATICS

Geoinformatics Approach for Natural Resource Management (MSC017401)

Day & Date: Monday, 10-07-2023

Max. Marks: 80

Time: 03:00 PM To 06:00 PM

- Instructions:** 1) Q. Nos.1 and.2 are compulsory.
2) Attempt any three questions from Q.No.3 to Q.No.7
3) Figure to right indicate full marks.

Q.1 A) Choose correct alternative.

10

- 1) _____ colour indicates agriculture in FCC image.
 - a) Blue
 - b) Green
 - c) Red
 - d) Yellow
- 2) Forest and Wildlife are _____.
 - a) Renewable Resources
 - b) Non-Renewable Resources
 - c) Inexhaustible Resources
 - d) None of these
- 3) Microwave sensor is also used especially during _____ in crop mapping.
 - a) Summer
 - b) Rainy
 - c) Winter
 - d) All of these
- 4) NOAA ships equipped with _____ echo sounders use beams of sound to map the ocean floor.
 - a) Single
 - b) Multibeam
 - c) Both a & b
 - d) None of these
- 5) For Landsat 8 data, _____ = (Band 5 - Band 6) / (Band 5 + Band 6)
 - a) NDWI
 - b) NDBI
 - c) NDSI
 - d) NDVI
- 6) _____ is integrative science that studies the basic structural and functional relationships within and among living populations and their physical-chemical environments in marine ecosystems.
 - a) Marine ecology
 - b) Oceanography
 - c) Bathymetry
 - d) Seismology
- 7) _____ are soil moisture sensors that measure this tension between soil particles and water molecules.
 - a) Seismometers
 - b) Tensiometers
 - c) Barometers
 - d) SONAR
- 8) Who provides daily advisories to the fishermen on basis with specific references to 586 fish landing centres along the Indian coast?
 - a) INCOIS
 - b) ISRO
 - c) NASA
 - d) ESA
- 9) Iron oxide in a sandy loam soil decreases reflectance in _____ portion.
 - a) Red
 - b) Blue
 - c) Green
 - d) near-infrared

- 10) The term _____ originally referred to the ocean's depth relative to sea level.
- | | |
|---------------|------------------|
| a) Geography | b) Ocean mapping |
| c) Bathymetry | d) Seismology |

B) Fill in the blanks OR write true/ false. 06

- 1) NDWI in comparison with NDVI is more accurate indicator of plant humidity.

a) True	b) False
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- 2) Of the many processes involved in the _____, the most important are evaporation, transpiration, condensation, precipitation, and runoff.
- 3) _____ are laboratory animals, plants, cells, genes, and microorganisms used for researches.
- 4) GIS not helps wildlife management professionals examine and envision wildlife movement and habitat ranges.

a) True	b) False
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- 5) How much is the spatial resolution of LISS-4?
- 6) Thermal infrared data collected by EO satellites are used to accurately monitor temperatures at a global scale and over extended time scales.

a) True	b) False
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Q.2 Answer the following. 16

- a) Describe in short classification of forests
- b) Write a note on water logging.
- c) Ocean colour mapping
- d) Write short note on any four types of soil.

Q.3 Answer the following. 16

- a) Describe in detail bio resources.
- b) Explain details sea surface temperature.

Q.4 Answer the following. 16

- a) What is the scheme of classification of forests in India?
- b) Discuss the key principles and goals of sustainable watershed management.

Q.5 Answer the following. 16

- a) Give different sampling techniques applied in forestry.
- b) Applications of GIS and remote sensing in the field of coastal bathymetry.

Q.6 Answer the following. 16

- a) Describe soil moisture mapping using GIS and remote sensing.
- b) Write a note on Hydrological cycle.

Q.7 Answer the following. 16

- a) What methods are commonly used for identifying various soils?
- b) How can GIS-based wildlife habitat suitability analysis inform conservation planning and decision-making?

Seat No.	
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**M.Sc. (Semester - IV) (New) (CBCS) Examination: March/April-2023
GEOINFORMATICS**

Application of Rs and GIS in Disaster Management (MSC017402)

Day & Date: Wednesday, 12-07-2023
Time: 03:00 PM To 06:00 PM

Max. Marks: 80

- Instructions:** 1) Q. Nos. 1 and. 2 are compulsory.
2) Attempt any three questions from Q. No. 3 to Q. No. 7
3) Figure to right indicate full marks.

Q.1 A) Fill in the blanks by choosing correct alternatives given below. 10

- 1) What is the range of the intensity scale used in measuring earthquake?

a) 1-10	b) 1-12
c) 1-5	d) 1-15
- 2) Indian national Tsunami warning center is located at _____.

a) Allahabad	b) Ahmadabad
c) Hyderabad	d) Sikandrabad
- 3) National Institute of Disaster management in India is located at _____.

a) Pune	b) West Bengal
c) New Delhi	d) Calcutta
- 4) What would you do if you heard a warning at ocean beach?
 - a) Surf on the big waves
 - b) Get out of the water quickly and move to higher ground
 - c) Wait until you have finished your swim
 - d) Phone your friend
- 5) What are the three phases of disaster management planning?
 - a) Preparation, Response and Recovery
 - b) Preparation, Planning and Perception
 - c) Evacuating, Rebuilding and Re-branding
 - d) Planning, Evacuating and Recovery
- 6) What does the acronym ISDR stand for?
 - a) International Significant Disaster Resources
 - b) International Sustainable Development Report
 - c) International Strategy for Disaster Reduction
 - d) Intergovernmental Strategy.
- 7) Following is not a natural disaster _____.

a) Flood	b) Deforestation
c) Lightning	d) Forest Fire
- 8) Tornadoes are common in _____.

a) India	b) Bangladesh
c) USA	d) China
- 9) Landslides often occur in _____.

a) Desert Region	b) Forest Region
c) Tundra Region	d) Hilly Region

- 10) Which wave of an earthquake is produced by a rolling effect along the earth's surface?
- a) L wave
 - b) P wave
 - c) S wave
 - d) None of the above

B) Fill in the blanks**06**

- 1) The solid waste disposal problem can be well managed through _____.
- 2) Volcanic eruption, El-Nino Volcanic, Lightning & Thundering are common factors of wildfire hazards.
 - a) True
 - b) False
- 3) The ring of fire is belt of volcanoes in the Circum Pacific region.
 - a) True
 - b) False
- 4) The coast of Kerala is affected by _____ as a radioactive pollutant.
- 5) Generally, photochemical smog is related to _____ pollution.
- 6) Ozone layer in Stratosphere is affected mainly from _____ content.

Q.2 Answer the following**16**

- a) Land slide prone zones of India.
- b) Earth quake precautions by GIS.
- c) Volcanic disaster and its causes.
- d) Explain different symptoms of drought.

Q.3 Answer the following

- a) Describe in detail Flood. Add a note on GIS case studies on Flood.
- b) Briefly explain process of desertification. Add a note on identification of desertification using GIS and remote sensing technology.

08**08****Q.4 Answer the following**

- a) Explain in brief marine disaster and its management using GIS techniques.
- b) Explain in detail factors and variables of disaster.

08**08****Q.5 Answer the following**

- a) What are chemical disaster. Application of GIS remote sensing in management of chemical disaster?
- b) Explain in detail Risk prone assessment of disaster.

08**08****Q.6 Answer the following**

- a) Explain in detail Global warming effect and utilization of GIS techniques in management of global warming.
- b) Explain in detail short term and long term effects of drought.

08**08****Q.7 Answer the following**

- a) Soil erosion management using GIS techniques.
- b) Explain in detail Land slide prone zones of India.

08**08**

Seat No.	
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**M.Sc. (Semester - IV) (New) (CBCS) Examination: March/April-2023
GEOINFORMATICS**

Applications of Global Positioning System (MSC017403)

Day & Date: Friday, 14-07-2023
Time: 03:00 PM To 06:00 PM

Max. Marks: 80

- Instructions:** 1) Question no. 1 and 2 are compulsory.
2) Attempt any three questions from Q. No. 3 to Q. No. 7.
3) Figure to right indicate full marks.

Q.1 A) Choose the correct alternative.

10

- 1) GNSS systems are_____.
 - a) GPS
 - b) GLONASS
 - c) Galileo
 - d) All the above
- 2) During which year the project on GPS was launched?
 - a) 1970
 - b) 1971
 - c) 1972
 - d) 1973
- 3) Which members involved in the success of GPS invention?
 - a) Roger L. Easton
 - b) Ivan A. Getting
 - c) Bradford Parkinson
 - d) All the above
- 4) A test on General Relativity was proposed by_____.
 - a) Roger L. Easton
 - b) Ivan A. Getting
 - c) Bradford Parkinson
 - d) Friedwardt Winterberg
- 5) Global Positioning System (GPS) is operated by_____?
 - a) Russian Space Force
 - b) China Space Force
 - c) United States Space Force
 - d) French Air and Space Force
- 6) A receiver at GPS calculates the self-time and position basing on the received data from the different_____.
 - a) Satellites
 - b) Radio waves
 - c) Atomic clocks
 - d) None of the above
- 7) How many minimum satellites are operational in the constellation of GPS?
 - a) 24
 - b) 25
 - c) 26
 - d) 27
- 8) The degradation in the quality of GPS by the government of the U.S. discontinued by whom?
 - a) Ivan A. Getting
 - b) Bradford Parkinson
 - b) Friedwardt Winterberg
 - d) Bill Clinton
- 9) Which country developed GLONASS in contemporary with the GPS?
 - a) China
 - b) India
 - c) Nepal
 - d) Russia
- 10) Once the Selective Availability got lifted the accuracy of GPS was for_____ meters.
 - a) 3
 - b) 4
 - c) 5
 - d) 6

B) Fill in blanks / (True /False). 06

- 1) Galileo system for Navigation is operated by_____.
- 2) The GPS operated by Indians is_____.
- 3) Compass satellite system of navigation is operated under Chinese government. (True /False)
- 4) Atomic clock is present on the satellites of GPS to contribute the accurate time information. (True /False)
- 5) The satellites placed in the constellation of GPS arranged into four orbitals are surrounded to Earth. (True /False)
- 6) The current GPS consists of three major segments. (True /False)

Q.2 Answer the following. 16

- a) Write advantages of GPS.
- b) Beidou.
- c) location of GPS receiver.
- d) Control segment.

Q.3 Answer the following. 08

- a) Difference between GPS and GNSS. 08
- b) Write a note on three different Segments of GPS. 08

Q.4 Answer the following. 08

- a) GPS surveying method. 08
- b) Write a note on NAVSTAR GPS. 08

Q.5 Answer the following. 08

- a) Write a note on DGPS. 08
- b) Basic modes of GPS. 08

Q.6 Answer the following. 08

- a) Write a note history of GPS. 08
- b) Data transfer and analysis GPS surveying. 08

Q.7 Answer the following. 08

- a) Describe in detail vehicle tracking. 08
- b) Write note on Wide Area Augmentation System (WAAS) planned For navigation. 08