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**M.Sc. (Semester - I) (New) (NEP CBCS) Examination: Oct/Nov-2023**  
**GEOINFORMATICS**  
**Basics of GIS and GNSS (2331101)**

Day & Date: Friday, 05-01-2024  
 Time: 03:00 PM To 05:30 PM

Max. Marks: 60

**Instructions:** 1) All Question are compulsory.  
 2) Figure to right indicate full marks.

**Q.1 A) Choose correct alternative**

**08**

- 1) \_\_\_\_\_ are the three type groups of vector data?
  - a) point, line & image
  - b) point, polygon & image
  - c) line, polygon & image
  - d) point, line & polygon
- 2) \_\_\_\_\_ of the following doesn't indicate a topology error?
  - a) polygon features
  - b) unclosed polygon
  - c) gaps between polygons
  - d) silver polygons
- 3) GIS uses the information from \_\_\_\_\_ of the following sources.
  - a) Spatial information
  - b) non-spatial information
  - c) global information
  - d) position information
- 4) The entire earth surface is divided into zones in \_\_\_\_\_ type of map projection.
  - a) Polyconic
  - b) UTM
  - c) Cylindrical
  - d) Lambert-azimuthal equal area
- 5) Among the following \_\_\_\_\_ can be expressed as an example of hardware component.
  - a) ARC GIS
  - b) Keyboard
  - c) AutoCAD
  - d) Digitalization
- 6) GIS represents a location in \_\_\_\_\_ dimensional coordinates.
  - a) 2
  - b) 3
  - c) 4
  - d) 5
- 7) \_\_\_\_\_ of the following parameters using GIS are correlated to represent an earth's physical location.
  - a) Location
  - b) spatial temporal
  - c) extent reference
  - d) all the above
- 8) The scientist Roger Tomlinson who coined was given \_\_\_\_\_ title.
  - a) father of GIS
  - b) father of Globe
  - c) Doctorate
  - d) none of the above

- B) Write true/false** **04**
- 1) Longitudes are also known as parallel.
  - 2) A raster is a regular tessellation with square cells.
  - 3) Fields are geographic phenomena that occur everywhere in the study area.
  - 4) The scientist S. P. Langlay firstly implemented GIS work on geographic information system.

- Q.2 Answer the following' (Any Six).** **12**
- a) Geographical Entities
  - b) Define GIS
  - c) Define Contour
  - d) Define Topology
  - e) Define DEM
  - f) Buffer analysis
  - g) Geo-database
  - h) Satellite orbit

- Q.3 Answer the following (Any three).** **12**
- a) Structured Query Language
  - b) Arc Spatial Data Engine
  - c) Errors of GIS data
  - d) Primary and secondary GIS data sources

- Q.4 Answer the following (Any two).** **12**
- a) Components of GIS
  - b) Relational DBMS
  - c) Vector data structure

- Q.5 Answer the following (Any two).** **12**
- a) Segments of GNSS
  - b) Hierarchical DBMS
  - c) Raster data structure

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**M.Sc. (Semester - I) (New) (NEP CBCS) Examination: Oct/Nov-2023**  
**GEOINFORMATICS**  
**Principles of Remote Sensing (2331102)**

Day & Date: Sunday, 07-01-2024  
 Time: 03:00 PM To 05:30 PM

Max. Marks: 60

**Instructions:** 1) All Questions are compulsory.  
 2) Figures to the right indicate full marks

**Q.1 A) Choose the correct alternative.**

**08**

- 1) Visible red light is used in \_\_\_\_\_.  
 a) soil moisture                      b) mineral  
 c) water penetration                d) vegetation discrimination
- 2) Bodies having high thermal inertia have \_\_\_\_\_ tendency to change their temperature easily.  
 a) High                                      b) No  
 c) Less                                        d) None of the above
- 3) FCC stands for \_\_\_\_\_.  
 a) False Colour Composite        b) Fake Colour Composite  
 c) Few Colour Composite            d) None of the above
- 4) \_\_\_\_\_ wave band having longest wavelength.  
 a) gamma ray                            b) x-rays  
 c) radio waves                            d) UV
- 5) Remote sensing techniques makes use of the properties of \_\_\_\_\_ emitted reflected by the sensor object.  
 a) Electric waves                        b) Sound waves  
 c) Electromagnetic waves            d) Wind wave
- 6) \_\_\_\_\_ is the most energetic rays of EMR spectrum.  
 a) gamma                                    b) x-ray  
 c) UV                                         d) visible
- 7) The most important source of electromagnetic energy is \_\_\_\_\_.  
 a) Earth                                      b) Moon  
 c) Atmosphere                            d) Sun
- 8) GLONASS is global position system operated by \_\_\_\_\_ country.  
 a) Russia                                    b) Japan  
 c) Europe                                    d) U.S.A

**B) Fill in the blanks OR True/False**

**04**

- 1) Laser scanner is the example of active sensor in remote sensing.  
 (True/ False)
- 2) Electromagnetic radiation is classified by wavelength into radio wave, microwave, infrared, visible light, ultraviolet, X-rays and gamma rays.  
 (True/ False)
- 3) LIDAR stands for \_\_\_\_\_.
- 4) IRS stands for \_\_\_\_\_.

- Q.2 Answer the following (Any Six) 12**
- a) Define Wavelength.
  - b) What is Relief displacement?
  - c) What is meant by Microwave remote sensing?
  - d) Define Scale
  - e) Components of remote sensing.
  - f) What is photogrammetry?
  - g) Explain in brief Spectral signature of soil and water.
  - h) Types of Scattering
- Q.3 Answer the following (Any Three). 12**
- a) State different applications of remote sensing in Earth Sciences.
  - b) Explain in brief the electromagnetic spectrum of energy.
  - c) Platforms and its types.
  - d) Give comparison between vertical and oblique aerial photography.
- Q.4 Answer the following (Any Two). 12**
- a) Explain the different types of resolutions used in remote sensing.
  - b) What is Remote sensing? Write in detail the history of Remote sensing?
  - c) Explain in detail EMR?
  - d) Write down different types of scattering in atmosphere.
- Q.5 Answer the following (Any Two). 12**
- a) Explain the elements of image interpretation.
  - b) Explain the principles of Satellite Motion. What do you mean by Geosynchronous and geostationary orbit.
  - c) Give the difference between aerial photograph and toposheet.

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**M.Sc. (Semester - I) (New) (NEP CBCS) Examination: Oct/Nov-2023**  
**GEOINFORMATICS**  
**IT for Geoinformatics (2331109)**

Day & Date: Tuesday, 09-01-2024  
 Time: 03:00 PM To 05:30 PM

Max. Marks: 60

**Instructions:** 1) All Questions are compulsory  
 2) Figure to right indicate full marks.

**Q.1 A) Choose the correct alternative**

**08**

- 1) HTML stands for \_\_\_\_\_.
  - a) high text market language
  - b) higher text markup language
  - c) high text markup language
  - d) Hypertext markup language
- 2) There are \_\_\_\_\_ types of memory.
 

a) 2	b) 3
c) 1	d) 4
- 3) The only language which the computer understands is \_\_\_\_\_.
 

a) assembly language	b) binary language
c) Basic	d) c language
- 4) LAN stands for \_\_\_\_\_.
  - a) Local another Network
  - b) Local Area Network
  - c) Low Area network
  - d) Loading Area network
- 5) A data base system is basically just a \_\_\_\_\_ record keeping system.
 

a) Computerized	b) Localized
c) mechanized	d) None of these
- 6) Multiprogramming is technique to execute number of program simultaneously by a \_\_\_\_\_ processor.
 

a) Multi	b) Single
c) Tripple	d) All of these
- 7) There are usually \_\_\_\_\_ keys on the keyboard
 

a) 104	b) 106
c) 110	d) 107
- 8) A \_\_\_\_\_ operating system runs on a server and provides the Server the capability to manage data users.
 

a) Network	b) Batch Processing
c) Actual	d) None of these.

**B) Fill in the blanks OR true /false. 04**

- 1) DBMS is \_\_\_\_\_ designed to define, manipulate, retrieve and Manage, data in a database.
- 2) Digital camera is input device used to take photographs. (True/False)
- 3) \_\_\_\_\_ is responsible for installation, configuration, up gradation, Administration, monitoring and maintenance of database
- 4) Ms word is a hardware. (True/False)

**Q.2 Answer the following. (Any Six) 12**

- a) Write a note on Storage Drive.
- b) What is RAM?
- c) Short note on intersection.
- d) What is Internet?
- e) Write a note on Input devices.
- f) Short note on union.
- g) Normalization data.
- h) Define LULC

**Q.3 Answer the following. (Any Three) 12**

- a) Write a brief account on Power point presentation.
- b) Explain in detail Table relationship.
- c) Explain in detail how computer used in biodiversity studies?
- d) Define DBMS, Explain its advantages and disadvantages.

**Q.4 Answer the following. (Any Two) 12**

- a) Explain types of operating system and advantages of windows operating System.
- b) Describe the following: Network model.
- c) Discuss SQL and its advantages.

**Q.5 Answer the following. (Any Two) 12**

- a) Give difference between Hierarchical and Relational models.
- b) Give different properties of computer.
- c) RDBMS and its component.

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M.Sc. (Semester - I) (New) (NEP CBCS) Examination: Oct/Nov-2023

**GEOINFORMATICS**

**Research Methodology (2331103)**

Day & Date: Thursday, 11-01-2024  
Time: 03:00 PM To 05:30 PM

Max. Marks: 60

**Instructions:** 1) All questions are compulsory.  
2) Figures to the right indicate full marks

**Q.1 A) Choose correct alternative.**

**08**

- 1) How is random sampling helpful?
  - a) Reasonably accurate
  - b) An economical method of data collection
  - c) Free from personal biases
  - d) All of the above
- 2) Research can be classified as \_\_\_\_\_.
  - a) Basic, Applied and Action Research
  - b) Quantitative and Qualitative Research
  - c) Philosophical, Historical, Survey and Experimental Research
  - d) All the above
- 3) The first step of research is \_\_\_\_\_.
 

a) Selecting a problem	b) Finding a problem
c) Identifying a problem	d) Searching a problem
- 4) Which of the following is not the method of Research?
 

a) Observation	b) Historical
c) Survey	d) Philosophical
- 5) Which one among the following is the most comprehensive source of population data?
  - a) National Sample Surveys
  - b) Census
  - c) Demographic Health Surveys
  - d) National Family Health Surveys
- 6) The main characteristic of scientific research is \_\_\_\_\_.
 

a) Empirical	b) Theoretical
c) Experimental	d) All of the above
- 7) The research is always \_\_\_\_\_.
  - a) Verifying the old knowledge
  - b) Exploring new knowledge
  - c) Filling the gap between knowledge
  - d) All of these

- 8) What is the first step in the research process?
- a) Data analysis
  - b) Literature review
  - c) Research design
  - d) Hypothesis testing

**B) Fill in the blanks OR Write True/False. 04**

- 1) “One of the methods of logical reasoning process” is called Experiment. (True/False)
- 2) \_\_\_\_\_ is an essential criterion of scientific study.
- 3) \_\_\_\_\_ is an example of primary data.
- 4) Good Research is always systematic. (True/False)

**Q.2 Answer the following. (Any Six) 12**

- a) What is keyword?
- b) Definition of search engines.
- c) What is impact factor?
- d) Objectives of research.
- e) Need of ISBN.
- f) What is coral draw?
- g) Importance of search engines.
- h) Write a note on H-index and I-index.

**Q.3 Answer the following. (Any Three) 12**

- a) Write a note on ISSN.
- b) Explain the different steps involved in writing research report.
- c) Define and explain the term “Research”. Explain its importance and objectives.
- d) Describe the different steps involved in a research process.

**Q.4 Answer the following. (Any Two) 12**

- a) Write a brief account on applications of MS-word in research.
- b) Discuss in brief various types of publications available for research.
- c) Write a note on formulation of research problem.

**Q.5 Answer the following. (Any Two) 12**

- a) Write a note on applications of MS-Excel for analysis of the research data.
- b) Write a note on various search engines available for research.
- c) Write a note on types of researches.



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**M.Sc. (Semester - I) (Old) (CBCS) Examination: OCT/Nov-2023**  
**GEOINFORMATICS**  
**Introduction to Geography (MSC17101)**

Day & Date: Friday, 05-01-2024  
 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) Most cash crops are grown \_\_\_\_\_.  
 a) In the developed world      b) through hydroponics  
 c) through aquaculture      d) on plantations
- 2) Which of the following is the main reason for the land degradation?  
 a) Intensive cultivation      b) Over irrigation  
 c) Deforestation      d) Overgrazing
- 3) Which of the following Indian state is famous for black soil?  
 a) Jammu and Kashmir      b) Rajasthan  
 c) Gujarat      d) Jharkhand
- 4) Which of the following minerals is formed by decomposition of rocks, leaving a residual mass of weathered material?  
 a) Coal      b) Bauxite  
 c) Gold      d) Zinc
- 5) What name is given to the method of growing crops in nutrient solutions rather than in soil?  
 a) Irrigation      b) Collectivization  
 c) Genetic modification      d) Hydroponics
- 6) Which of these statements about intensive farming is false?  
 a) it is common in countries like the United Kingdom and the Netherlands.  
 b) It requires a large amount of labor  
 c) It is carried out in relatively densely populated areas  
 d) None of these
- 7) Troposphere is the hottest part of the atmosphere because \_\_\_\_\_.  
 a) there are charged particles in it  
 b) it is closest to the Sun  
 c) heat is generated in it  
 d) it is heated by the Earth's surface
- 8) The seasonal reversal of winds is the typical characteristic of \_\_\_\_\_.  
 a) Mediterranean climate      b) Equatorial climate  
 c) All of the above climates      d) Monsoon climate



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**M.Sc. (Semester - I) (Old) (CBCS) Examination: Oct/Nov-2023**  
**GEOINFORMATICS**  
**Fundamentals of Geoinformatics (MSC17102)**

Day & Date: Sunday, 07-01-2024  
 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) Figures to the right indicate full marks.

**Q.1 A) Choose correct alternative. 10**

- 1) Data that describe the geometry of spatial features called \_\_\_\_\_.  
 a) External Data                      b) Spatial Data  
 c) Population data                      d) Tabular data
- 2) \_\_\_\_\_ is Art. science and technology of taking aerial photographs from an air-borne platform.  
 a) remote sensing                      b) GIS  
 c) Aerial photography                      d) Geomorphology
- 3) The set of \_\_\_\_\_ is called the electromagnetic spectrum.  
 a) Electric waves                      b) Magnetic waves  
 c) Tsunami waves                      d) Electromagnetic
- 4) 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
- 5) Sensors are devices used for making \_\_\_\_\_.  
 a) scanning                      b) reporting  
 c) editing                      d) observations
- 6) \_\_\_\_\_ is a generic term denoting the use of computers to create and depict digital representations of the Earth's surface.  
 a) GIS                      b) GPS  
 c) Geomorphology                      d) Climatology
- 7) Which of the following is not one of the software's of GIS?  
 a) Arc GIS                      b) RS GIS  
 c) Q GIS                      d) ERDAS
- 8) The principles used in \_\_\_\_\_ facilitate precise measurements related to the length, breadth and height from photographs.  
 a) aerial imagery                      b) photogrammetry  
 c) GPS                      d) MSS
- 9) \_\_\_\_\_ makes it possible to precisely identify locations on the earth by measuring distance from the satellites.  
 a) GPS                      b) GIS  
 c) QGIS                      d) Chronology

- 10) What is meant by study of something without direct contact?
- a) Cartography
  - b) Remote sensing
  - c) Geographic information system
  - d) Geography

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

- 1) The point data feature can be used to represent location. (True/false)
- 2) If the intensity of wavelength decreases, the energy released will decrease. (True false)
- 3) Routes are just a sequence of waypoints (True/ False)
- 4) Blue, green, and red are the \_\_\_\_\_ of the visible spectrum.
- 5) \_\_\_\_\_ is a trace gas in the atmosphere mainly confined to stratospheric heights between 20 and 40 km.
- 6) Hardware, software and spatial data etc are the components of \_\_\_\_\_.

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

- a) Applications of GIS
- b) Temporal resolution
- c) Stereoscopic parallax
- d) Atmospheric window

**Q.3 Answer the following.**

- a) Write in brief basic elements of image interpretation. 08
- b) Note on types of Aerial Photographs Based on Scale. 08

**Q.4 Answer the following.**

- a) Differentiate active remote sensing and passive remote sensing. 08
- b) Write in detail how GPS works. 08

**Q.5 Answer the following.**

- a) Write a brief component of GIS. 08
- b) Application of Aerial Photography. 08

**Q.6 Answer the following.**

- a) Write short note on The Space segment of GPS. 08
- b) Note on stereoscopic overlap and its advantages. 08

**Q.7 Answer the following.**

- a) Explain in detail point, line and polygon with examples. 08
- b) Write a short note on the history of GIS. 08

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**M.Sc. (Semester - I) (Old) (CBCS) Examination: Oct/Nov-2023  
GEOINFORMATICS**

**Computer Applications in Earth Sciences (MSC17103)**

Day & Date: Tuesday, 09-01-2024  
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) An \_\_\_\_\_ is an interface between computer uses and computer Hardware.
  - a) Operating system
  - b) system software
  - c) Network
  - d) None of these
- 2) LAN stands for \_\_\_\_\_.
  - a) Local another Network
  - b) Local Area Network
  - c) Low Area network
  - d) Loading Area network
- 3) A data base system is basically just a \_\_\_\_\_ record keeping system.
  - a) Computerized
  - b) Localized
  - c) Mechanized
  - d) None of these
- 4) A \_\_\_\_\_ operating system runs on a server and provides the Server the capability to manage data users.
  - a) Network
  - b) Batch Processing
  - c) Actual
  - d) None of these
- 5) The only language which the computer understands is \_\_\_\_\_.
  - a) Assembly language
  - b) Binary language
  - c) Basic
  - d) c language
- 6) we write programs in?
  - a) Low level language
  - b) Middle level language
  - c) High level language
  - d) Decimal format
- 7) There are \_\_\_\_\_ types of memory.
  - a) 2
  - b) 3
  - c) 1
  - d) 4
- 8) Multiprogramming is technique to execute number of program simultaneously by a \_\_\_\_\_ processor.
  - a) Multi
  - b) Single
  - c) Tripple
  - d) All of these
- 9) There are usually \_\_\_\_\_ keys on the keyboard.
  - a) 104
  - b) 106
  - c) 110
  - d) 107
- 10) HTML stands for \_\_\_\_\_.
  - a) high text marker language.
  - b) higher text markup language.
  - c) high text markup language.
  - d) hyper text markup language.

- B) Fill in the blacks OR True / False. 06**
- 1) DBMS is \_\_\_\_\_ designed to define, manipulate, retrieve and Manage, data in a database.
  - 2) Digital camera is input device used to take photographs. (True/false)
  - 3) \_\_\_\_\_ is responsible for installation, configuration, up gradation, Administration, monitoring and maintenance of database.
  - 4) Ms word is a hardware,(true /false)
  - 5) CPU controls only input data of computer(true/false)
  - 6) GIF stands for \_\_\_\_\_.

- Q.2 Answer the following. 16**
- a) Storage Drive.
  - b) RAM
  - c) Mother Board
  - d) Internet

- Q.3 Answer the following.**
- a) Explain in detail how computer used in biodiversity studies? 08
  - b) Define DBMS, Explain its advantages and disadvantages. 08

- Q.4 Answer the following.**
- a) Explain types of operating system and advantages of windows operating System. 08
  - b) Describe the following: Network model 08

- Q.5 Answer the following.**
- a) SQL and its advantages. 08
  - b) RDBMS and its component. 08

- Q.6 Answer the following.**
- a) Give different properties of computer. 08
  - b) Give difference between Hierarchical and Relational models. 08

- Q.7 Write discuss brief:**
- a) Power point presentation. 08
  - b) Table relationship. 08

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**M.Sc. (Semester - I) (Old) (CBCS) Examination: Oct/Nov-2023  
GEOINFORMATICS**

**Introduction to Geology (MSC17109)**

Day & Date: Thursday, 11-01-2024  
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) Rock crystal belongs to which mineral group?
  - a) Quartz group
  - b) Feldspar group
  - c) Carbonate group
  - d) Ferro-magnesium group
- 2) What is the thickness of the crust under the mountainous areas and in particular the Himalayas?
  - a) 50-55 km
  - b) 60-65 km
  - c) 70-75 km
  - d) 30-35 km
- 3) The depth up to which the mantle is said to exist is \_\_\_\_\_.
  - a) 2000 km
  - b) 1500 km
  - c) 2900 km
  - d) 1800 km
- 4) Who was the first person to tell about the Core?
  - a) Graham Bell
  - b) Albert Einstein
  - c) Isaac Newton
  - d) R.D. Oldham
- 5) The layer which does not transmit the S-waves is \_\_\_\_\_.
  - a) Outer core
  - b) Crust
  - c) Mantle
  - d) Inner core
- 6) Angle of dip is measured using which instrument?
  - a) Compass
  - b) Theodolite
  - c) Tacheometer
  - d) Clinometer
- 7) The type of fold in which the limbs dip away from each other at the crest is \_\_\_\_\_.
  - a) Anticline
  - b) Syncline
  - c) Counter cline
  - d) Doesn't exist
- 8) In which direction does the displacement of blocks happen?
  - a) Horizontal
  - b) Vertical
  - c) Inclined
  - d) Any direction
- 9) Which is the longest dam in India?
  - a) Hirakud dam
  - b) Bhakra dam
  - c) Krishnarajasagar dam
  - d) Nagarjun sagar dam
- 10) Subway and tube railways are studied under which type of tunnels?
  - a) Traffic tunnels
  - b) Hydropower tunnels
  - c) Public utility tunnels
  - d) Delivery tunnels

- B) Fill in the blanks** **06**
- 1) The granite layer in the crust is also referred to as \_\_\_\_\_.
  - 2) The type of fold which is actually a group of folds is \_\_\_\_\_ fold.
  - 3) Heave of the fault is \_\_\_\_\_ displacement.
  - 4) An arch dam having a curvature both in horizontal and vertical alignment is called \_\_\_\_\_ dam.
  - 5) Method of placing tubes in public utility tunnels is called \_\_\_\_\_ method.
- Q.2 Answer the following.** **16**
- a) Applications of clinometers.
  - b) Copper group of minerals.
  - c) Explain silicate structures.
  - d) Write a short note on columnar joints.
- Q.3 Answer the following.**
- a) Explain in detail the Classification of minerals. Write a note on silicate group of minerals. **08**
  - b) Write in detail the physical properties of any 2 Amphibole group of minerals. **08**
- Q.4 Answer the following.**
- a) Explain the physical properties of any 2 Pyroxene group of minerals. **08**
  - b) Explain the physical properties of any 2 Mica group of minerals. **08**
- Q.5 Answer the following.**
- a) What are different textures of sedimentary rocks? Explain with neat labeled diagrams. **08**
  - b) Explain various types of Dams. **08**
- Q.6 Answer the following.**
- a) Define Faults and types of Faults. **08**
  - b) Write a note on topographic maps and geological maps in detail. **08**
- Q.7 Answer the following.**
- a) Explain Various stages of engineering geological investigation for civil engineering projects. **08**
  - b) Explain in detail site selection aspects for construction of Tunnels. **08**



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**M.Sc. (Semester - II) (New) (CBCS) Examination: Oct/Nov-2023**  
**GEOINFORMATICS**  
**Digital Image Processing (MSC17201)**

Day & Date: Monday, 18-12-2023  
 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) \_\_\_\_\_ is not a satellite image format.
  - a) .shp
  - b) .tiff
  - c) .img
  - d) .LAN
- 2) \_\_\_\_\_ is the process in which the pixel values are sliced into different ranges and for each range a single value or colour is assigned in the output image.
  - a) Spatial filtering
  - b) Density slicing
  - c) Piece-wise linear stretch
  - d) Thresholding
- 3) \_\_\_\_\_ is the technique by which real world objects/land covers are identified within Remotely sensed imagery.
  - a) Enhancement
  - b) Georeferencing
  - c) Classification
  - d) Layer stacking
- 4) \_\_\_\_\_ is a process of geometrically correcting an image so that it can be represented on a planar surface, conform to other images or conform to a map.
  - a) Rectification
  - b) Digitization
  - c) Classification
  - d) None of these
- 5) Which of the following effect NOT result in geometrical errors/distortion in satellite images.
  - a) Earth Curvature
  - b) Atmospheric absorption
  - c) Scan skew
  - d) Platform velocity
- 6) \_\_\_\_\_ is a pre-processing operation.
  - a) Image rectification
  - b) Image restoration
  - c) Image enhancement
  - d) Both A and B
- 7) Following is an image Classification technique.
  - a) Maximum Likelihood
  - b) Parallelepiped
  - c) Minimum distance to mean Classifier
  - d) all of these
- 8) In the literature on Fuzzy classification methods, the \_\_\_\_\_ algorithm is the most popular method.
  - a) Fuzzy c-mean (FCM)
  - b) ISODATA
  - c) Euclidian distance
  - d) Fuzzy Gaussian Maximum Likelihood (FGML)

- 9) Low pass filters are also called \_\_\_\_\_ as the filter output is the average pixel value of all the pixels in the neighbourhood.
- a) High pass filters                      b) Convolution filters  
c) Averaging filters                      d) Kernel
- 10) Digital image contains \_\_\_\_\_.
- a) CN Value                                      b) DN Value  
c) PN Value                                      d) None of these

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

- 1) Aligning your data with a location on the Earth's surface is known as \_\_\_\_\_.
- 2) Training sites are used in \_\_\_\_\_ Classification.
- 3) \_\_\_\_\_ also known as confusion or contingency table.
- 4) Any image in which individual detectors appear lighter or darker than their neighbouring detectors is said to have \_\_\_\_\_.
- 5) Radiometric correction is to avoid geometric errors or distortions, while radiometric correction is to remove geometric distortion.
- a) True    b) False
- 6) ERDAS Imagine is raster-based software that is specifically designed for information extraction from images.
- a) True    b) False

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

- a) Error matrix.  
b) Edge enhancement.  
c) Linear Contrast Stretching.  
d) Texture classification approach.

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

- a) Define image enhancement & Discuss the importance of image Enhancement?  
b) Write short note on atmospheric Correction.

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

- a) What is image Classification? Explain the methods of Image Classification.  
b) Explain the sources of radiometric errors? Discuss the various methods for removing radiometric errors.

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

- a) Explain in details random bad pixel.  
b) Write short note on histogram Equalization.

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

- a) Explain the various image enhancement techniques.  
b) Write note on spatial filtering.

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

- a) Write note on hybrid classification.  
b) Non- Systematic Errors.

Seat No.	
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**M.Sc. (Semester - II) (New) (CBCS) Examination: Oct/Nov-2023**  
**GEOINFORMATICS**  
**Spatial Analysis (MSC17202)**

Day & Date: Tuesday, 19-12-2023  
 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) Key components of 'spatial data' quality include \_\_\_\_\_.  
 a) Positional accuracy                      b) Temporal accuracy  
 c) Lineage and completeness            d) All of the above
- 2) SDI stands for \_\_\_\_\_.  
 a) Spatial Data Interface  
 b) Spatial Data Infrastructure  
 c) Spatial Data Intention  
 d) Spatial Data International
- 3) TIN stands for \_\_\_\_\_.  
 a) Temperature Interface Node  
 b) Temporal Interest Network  
 c) Triangulated Irregular Network  
 d) Traffic Internet Network
- 4) \_\_\_\_\_ of the following are full-fledged GIS packages.  
 a) ILWIS    b) GeoMedia  
 c) ArcGIS    d) All of the above
- 5) 'Spatial databases' are also known as \_\_\_\_\_.  
 a) Geodatabases                                  b) Monodatabases  
 c) Concurrent databases                      d) None of the above
- 6) Lines of latitude that measure locations in the N-S direction on the geographic coordinate system.  
 a) Perpendicular                                  b) Intersects  
 c) Crosses    d) Parallels
- 7) Interpolation is made possible by a principle called \_\_\_\_\_.  
 a) Spatial Autocorrelation                      b) Spatial auto-correction  
 c) Thematic Autocorrelation                      d) Thematic auto-correction
- 8) An ESRI data format for topological vector data \_\_\_\_\_.  
 a) coordinate system                              b) Coverage  
 c) Segmentation model                              d) None of the above
- 9) A computer system for capturing, storing, querying, analyzing, and displaying geographically referenced data.  
 a) GPS    b) MIS  
 c) GIS    d) DSS

- 10) The process of using GIS in building models with spatial data.
- a) DSS modelling
  - b) GIS modelling
  - c) Data modelling
  - d) MIS modelling

**B) Fill in the blanks 06**

- 1) \_\_\_\_\_ method is used to align an unreferenced dataset with one that has spatial reference information?
- 2) GIS differs from surveying and mapping by introducing \_\_\_\_\_.
- 3) \_\_\_\_\_ cell size is a description of raster data structure \_\_\_\_\_.
- 4) Overlay analysis is based on \_\_\_\_\_ logic.
- 5) When a GIS dataset for a given project is constantly revised, accessed, and manipulated by multiple users the best practice approach for storing the data is \_\_\_\_\_ geodatabase.
- 6) \_\_\_\_\_ appends together layers of adjoining area.

**Q.2 Answer the following 16**

- a) Explain point pattern analysis.
- b) What is meant by surface analysis?
- c) Write the overview on tool of spatial analysis
- d) Explain Union and Intersection.

**Q.3 Answer the following 08**

- a) Explain Global and focal functions. 08
- b) Explain C Matrices in detail. 08

**Q.4 Answer the following 10**

- a) Explain in detail about surface analysis. 10
- b) Explain Clip and Intersect operation in detail. 06

**Q.5 Answer the following 08**

- a) Explain in details the hydrology tool. 08
- b) What are Alpha index and Gamma index? 08

**Q.6 Answer the following 08**

- a) What is Network connectivity? 08
- b) What are Explanatory models? 08

**Q.7 Answer the following 08**

- a) Explain one Case study on Network analysis. 08
- b) Explain Multilayer operations with diagram. 08

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**M.Sc. (Semester - II) (New) (CBCS) Examination: Oct/Nov-2023  
GEOINFORMATICS**

**Advanced Techniques in GIS (MSC17206)**

Day & Date: Wednesday, 20-12-2023  
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 alternatives. 10**

- 1) \_\_\_\_\_ technique is used to create a shaded relief map by simulating the effects of illumination on a terrain surface.
  - a) Variance Filter
  - b) Slope and Aspect
  - c) Relief
  - d) Hill Shading
- 2) ANNs are commonly used for tasks such as \_\_\_\_\_.
  - a) Image recognition
  - b) Data classification
  - c) Speech synthesis
  - d) All of the above
- 3) Which spatial mining task focuses on grouping similar spatial objects together?
  - a) Spatial Classification
  - b) Spatial Indexing
  - c) Spatial Clustering
  - d) Spatial Regression
- 4) \_\_\_\_\_ is geofencing in the context of Location Based Services.
  - a) A method for securing wireless networks
  - b) A technique for tracking stolen mobile devices
  - c) A virtual boundary defined around a real-world geographical area
  - d) An algorithm for predicting traffic congestion
- 5) \_\_\_\_\_ of the following best describes the purpose of Enterprise Resource Planning (ERP) in GIS.
  - a) Managing and integrating geographical data within an organization
  - b) Optimizing the routing and navigation of vehicles in a geographic area
  - c) Analysing and visualizing spatial patterns and relationships
  - d) Monitoring and controlling natural resources within an enterprise
- 6) \_\_\_\_\_ statements best describe the Open Geospatial Consortium (OGC).
  - a) A global organization that develops and promotes open standards for geospatial data and services.
  - b) A research institute dedicated to geospatial mapping technologies.
  - c) A commercial company specializing in satellite imagery and remote sensing.
  - d) An international regulatory body for geographic information systems.
- 7) \_\_\_\_\_ is the Geographic Markup Language (GML).
  - a) A programming language used for website development.
  - b) A markup language used to describe geographical features and their attributes.
  - c) A database management system for storing geographic data.
  - d) A file format for compressing and sharing geographic data.

- 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 are 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) Interpolation methods are used to estimate values at unmeasured locations within a dataset.
- 2) DEM stands for Digital Elevation Map, which is a 2D representation of elevation data.
- 3) Location Based Services (LBS) utilize geographical information to provide personalized and context-aware services to users.
- 4) Virtual Globe refers to a 3D representation of the Earth's surface, often used for visualization and navigation purposes.
- 5) Keyhole Markup Language (KML) is primarily used for creating interactive user interfaces.
- 6) The components of spatial data mining include spatial classification, spatial clustering, and association rules.

**Q.2 Answer the following**

**16**

- a) Write a short note on DEM
- b) Location Based Services
- c) Web GIS
- d) Components of Spatial Multicriteria Decision Analysis

**Q.3 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**

**Q.4 Answer the following**

- a) Discuss the introduction and evolution of the Internet in the context of GIS. **08**
- b) What is the history of GIS and how has it evolved over time? **08**

**Q.5 Answer the following**

- a) What is spatial decision making and how does it differ from general decision making? **08**
- b) Explain the process of spatial decision making and its key components. **08**

**Q.6 Answer the following**

- a) What are the future trends and advancements expected in spatial data mining? **08**
- b) Discuss the future trends and advancements in GIS and spatial data mining. **08**

**Q.7 Answer the following**

- a) Compare and contrast fuzzy logic and Boolean logic. **08**
- b) How does Triangulated Irregular Network (TIN) differ from regular grid-based elevation models? **08**

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**M.Sc. (Semester - III) (New) (CBCS) Examination: Oct/Nov-2023  
GEOINFORMATICS**

**Advance Techniques in Remote Sensing (MSC017301)**

Day &amp; Date: Friday, 05-01-2024

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) The reflectance from a surface is called specular reflection if it follows:
  - a) Snells Law
  - b) Lambert's cosine law
  - c) Planktan's law
  - d) All of these
- 2) Pick up the correct statement from the following:
  - a) Frequency is the number of wave crests passing a fixed point in one second
  - b) Frequency of a wave is measured in Hertz (Hz)
  - c) Amplitude of a wave is the height of its crust from the mid-point
  - d) All of these
- 3) The object of photo-interpretation is:
  - a) Identification
  - b) Recognition of objects
  - c) Judging the significance of objects
  - d) All of these
- 4) Remote sensing techniques make use of the properties of emitted, reflected or diffracted by the sensed objects:
  - a) Electric waves
  - b) Sound waves
  - c) Electromagnetic waves
  - d) Wind waves.
- 5) The changes in the reflectivity/emissivity with time, is called:
  - a) Spectral variation
  - b) Spatial variation
  - c) Temporal variation
  - d) None of these
- 6) Due to perturbation of the orbit, satellite orbit parameters are frequently updated on measurements carried out by its
  - a) Six ground stations
  - b) Five ground stations
  - c) Four ground stations
  - d) Three ground stations
- 7) Which one of the following helps to identify the objects on the earth surface?
  - a) Atmospheric window
  - b) Signature
  - c) Radiometric error
  - d) None of these





- Q.4 Answer the following.**
- a) SEASAT **08**
  - b) Thermal infrared data collection **08**
- Q.5 Answer the following.**
- a) LIDAR **08**
  - b) SPOT **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**

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**M.Sc. (Semester - III) (New) (CBCS) Examination: Oct/Nov-2023**  
**GEOINFORMATICS**  
**Web GIS (MSC017302)**

Day & Date: Sunday, 07-01-2024  
 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) What is 'Metadata'?
  - a) It is 'data about data'
  - b) It is 'meteorological data'
  - c) It is 'oceanic data'
  - d) It is 'contour data'
- 2) \_\_\_\_\_ physically or logically connect together multiple workstations, terminals, and peripheral devices via a single cable or shared medium.
  - a) LAN
  - b) MAN
  - c) WAN
  - d) Computer network
- 3) URL stands for \_\_\_\_\_.
  - a) Universal resource locator
  - b) United resource locator
  - c) Universal range location
  - d) None of these
- 4) TCP stands for \_\_\_\_\_.
  - a) Telephone control protocols
  - b) Transmission control protocols.
  - c) Tree shaped control protocols.
  - d) None of these
- 5) The physical connection between networked computing devices is an established method using either \_\_\_\_\_.
  - a) Cable media or wireless media
  - b) Web GIS
  - c) Computer networking
  - d) 3D analysis
- 6) A \_\_\_\_\_ enables field - based personnel to capture, store, update, manipulate, Analyze and display geographic information.
  - a) QGIS
  - b) Arc GIS
  - c) Web GIS
  - d) Mobile GIS
- 7) Voice mail, E-mail, Online service, the Internet and the WWW are all example of \_\_\_\_\_.
  - a) Computer categories
  - b) Connectivity
  - c) Telecommunicating
  - d) None of the above
- 8) WWW stands for: \_\_\_\_\_.
  - a) World Wide Web
  - b) World Wide Wildlife
  - c) World Wide Women's
  - d) None of these



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**M.Sc. (Semester - III) (New) (CBCS) Examination: Oct/Nov-2023**  
**GEOINFORMATICS**  
**Geomorphology (MSC017306)**

Day & Date: Tuesday, 09-01-2024  
 Time: 11:00 AM To 02:00 PM

Max. Marks: 80

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

**Q.1 A) Choose the correct alternative (MCQ) 10**

- 1) Mass movement's other name is \_\_\_\_\_.  
 a) Mass wasting                      b) Landslide  
 c) Bothe A and B                      d) Name of these
- 2) Why is soil on important natural resource?  
 a) Soil is used to make building.  
 b) Soil can grow crops.  
 c) Soil Come from bedrock.  
 d) Soil comes from of microbes.
- 3) Theory of Plate Tectonics explains \_\_\_\_\_.  
 a) Formation of Mountains.      b) Sea Floor Spreading  
 c) Origin of Earthquake              d) All of the above
- 4) What are most important landforms in desert areas?  
 a) Chardong                              b) Interbedded rocks  
 c) Sand dunes                            d) Valleys
- 5) Which of the following represents a process of chemical weathering?  
 a) Thermal expansion and Contraction.  
 b) Mass exfoliation  
 c) Hydration and Hydrolysis  
 d) Frost action and crystal growth
- 6) Laurasia & Gondwana land were separated by \_\_\_\_\_.  
 a) Black sea                              b) Red sea  
 c) Pacific Ocean                        d) Tethys sea
- 7) Which of the following is type of channel pattern?  
 a) Floodplains                            b) Deltas  
 c) Meander                                d) Alluvial fans
- 8) Normal cycle of erosion is related with \_\_\_\_\_.  
 a) Glacial erosion                        b) Wind erosion  
 c) Fluvial erosion                        d) Marine
- 9) \_\_\_\_\_ Draining pattern are developed in the area of simple folds characterized by parallel anticlinal ridges alternated by parallel synclinal valleys.  
 a) Dendritic                                b) Rectangular  
 c) Radial                                    d) Trellised

- 10) Which of the following is created by soil erosion by the rivers.
- a) V-shaped Valley
  - b) Water fall
  - c) Delta
  - d) Sand dunes

**B) Fill in the blanks.****06**

- 1) A deep valley characterized by steep-step-like slopes is known as \_\_\_\_\_
- 2) The very top layer of soil is mostly made of \_\_\_\_\_.
- 3) \_\_\_\_\_ father of Geomorphology \_\_\_\_\_.
- 4) In \_\_\_\_\_ stage of erosional cycle maximum changes occur.
- 5) Geomorphology is concerned with the study of landforms (true/False)
- 6) A Fast moving mix of water, soil & rocks would be mudflows (True/False)

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

- 1) Concept of erosion
- 2) Classification of river valleys
- 3) Hill slope
- 4) Biological Weathering.

**Q.3 Answer the following questions.**

- a) Explain the Continental drift Theory.
- b) Give full account on Horton Method.

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

- a) Write a full note on river Rejuvenation and associated features.
- b) Polycyclic Relief.

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

- a) Describe the mass Movement.
- b) Give different Types of chemical weathering.

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

- a) Soil formation.
- b) Plate tectonic theory.

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

- a) Nature of Geomorphology.
- b) Explain the type of Drainage pattern\_

**08****08**

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**M.Sc. (Semester - IV) (New) (CBCS) Examination: Oct/Nov-2023**  
**GEOINFORMATICS**  
**Geoinformatics Approach for Natural Resource Management**  
**(MSC017401)**

Day & Date: Monday, 18-12-2023  
 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) \_\_\_\_\_ can be estimated based on Normalized Difference Vegetation Index (NDVI) and land surface temperature (LST).
  - a) Surface soil moisture content
  - b) Surface soil moisture contamination
  - c) Surface slope moisture content
  - d) Surface soil mixture content
- 2) Which of following water parameter measured using remote sensing?
  - a) TDS
  - b) TSS
  - c) Colour
  - d) Smell
- 3) \_\_\_\_\_ is often associated with prolonged wetness and lack of surface cover and therefore increases the vulnerability of soils to erosion.
  - a) water logging
  - b) fractures in rocks
  - c) Salinity
  - d) soil degradation
- 4) The NDVI value varies from \_\_\_\_\_.
  - a) -1 to 10
  - b) -1 to 1
  - c) -10 to 1
  - d) -1 to -11
- 5) In Landsat 8, \_\_\_\_\_ band can be extremely useful in delineating structural features, such as folds, faults etc.
  - a) NIR
  - b) TIR
  - c) SWIT
  - d) Blue
- 6) \_\_\_\_\_ of the water on the Earth is salt water and only three percent is fresh water; slightly over two-thirds of this is frozen in glaciers and polar ice caps.
  - a) 96%
  - b) 97%
  - c) 93%
  - d) 98 %
- 7) 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
- 8) If PH of water is 7, then it is \_\_\_\_\_.
  - a) Acidic
  - b) Basic (Alkaline)
  - c) Neutral
  - d) None of above

- 9) It is also possible to differentiate between some soil texture using \_\_\_\_\_ backscatter characteristics.
- |          |            |
|----------|------------|
| a) RADAR | b) LANDSAT |
| c) MODIS | d) ASTER   |
- 10) Tropical fish are most healthy in the range of \_\_\_\_\_.
- |            |            |
|------------|------------|
| a) 20-27°C | b) 24-27°C |
| c) 24-37°C | d) 14-27°C |

**B) Fill in the blanks OR write True/ False.**

**06**

- 1) Remote sensing estimation of surface water quality is based on mapping the relationship between remote sensing multi-spectral signatures and measurements of ground truth data.
 

a) True	b) False
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- 2) NDWI in comparison with NDVI is more accurate indicator of plant humidity.
 

a) True	b) False
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- 3) \_\_\_\_\_ is the process of planning and implementing practices for the stewardship and use of forests to meet specific environmental, economic, social and cultural objectives.
- 4) Sustainable watershed management involves the use of \_\_\_\_\_ and \_\_\_\_\_ to monitor and analyse water resources and ecosystems.
- 5) Soil type identification using GIS and remote sensing involves the analysis of spatial and spectral data to determine the composition and characteristics of the soil
 

a) True	b) False
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- 6) Coastal bathymetry can be accurately assessed using GIS and remote sensing techniques, such as satellite imagery.
 

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

**16**

- a) What are some key objectives of forest management?
- b) Sea Surface Temperature mapping.
- c) Soil mapping.
- d) Water Salinity.

**Q.3 Answer the following.**

**16**

- a) What are bioresources. Give its importance and applications in various fields with suitable example?
- b) What is the purpose of mapping forest inventory, and what methods are commonly used to collect data for forest inventory mapping?

**Q.4 Answer the following.**

**16**

- a) How can GIS-based wildlife habitat suitability analysis inform conservation planning and decision-making?
- b) Discuss the importance of accurate growing stock estimation in forest management and planning.

**Q.5 Answer the following.**

**16**

- a) How can GIS and remote sensing techniques be utilized for the detection of water pollution?
- b) Write a note on fundamentals of Marine ecology.



- Q.6 Answer the following.** **16**
- a) Fishery potential zone mapping using Remote sensing and GIS.
  - b) Describe in details types of soils.
- Q.7 Answer the following.** **16**
- a) Write full note on ocean colour mapping.
  - b) Discuss wildlife habit suitability analysis.

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

**Application of Rs and GIS in Disaster Management (MSC017402)**

Day & Date: Tuesday, 19-12-2023  
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) Devasting tsunamis are produced by \_\_\_\_\_.  
a) Volcanic eruptions                      b) Cyclone  
c) Tornados                                      d) Earthquake
- 2) Avalanches are common in the \_\_\_\_\_ regions.  
a) High altitudes                              b) Low latitudes  
c) Ground level                                d) beneath the ocean
- 3) Which one of the following is not a Natural Disaster?  
a) Volcano eruption                          b) Flood  
c) Blow-out                                        d) Tsunami
- 4) In preparation for emergency, employees should become familiar with  
a) Emergency equipment  
b) Exits and evacuation routes  
c) Storm shelters  
d) All of the above
- 5) Characteristically, the best course of action to take through a medical emergency is to \_\_\_\_\_.  
a) Begin first aid immediately  
b) Activate the emergency plan for reporting injuries  
c) Notify the person's family about the situation  
d) Both answers a and b
- 6) Exposed to a dangerous chemical, the affected area should be flushed for \_\_\_\_\_ minutes.  
a) 5 to 10    b) 10 to 15  
c) 15 to 20                                        d) 20 to 25
- 7) Disaster management includes \_\_\_\_\_.  
a) Mitigation                                      b) Reconstruction  
c) Rehabilitation                                d) All of the above
- 8) Disasters can be broadly classified as \_\_\_\_\_ types.  
a) 2    b) 4  
c) 5    d) 3
- 9) Maps that form an significant part of a disaster manager's resources include:  
a) Topographic maps                              b) land-use maps  
c) Vegetation maps                                d) All of the above



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**M.Sc. (Semester - IV) (New) (CBCS) Examination: Oct/Nov-2023  
GEOINFORMATICS**

**Applications of Global Positioning System (MSC017403)**

Day & Date: Wednesday, 20-12-2023  
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 alternatives. 10**

- 1) During which year the project on GPS was launched?
  - a) 1970
  - b) 1971
  - c) 1972
  - d) 1973
- 2) 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
- 3) How many minimum satellites are operational in the constellation of GPS?
  - a) 24
  - b) 25
  - c) 26
  - d) 27
- 4) Galileo system for Navigation is operated by \_\_\_\_\_.
  - a) China
  - b) India
  - c) Europe
  - d) Russia
- 5) Which of the following is having same principle as that of determining the position in GPS?
  - a) Compass
  - b) Traversing
  - c) Trisection
  - d) Resection
- 6) The satellites placed in the constellation of GPS arranged into \_\_\_\_\_ orbital are surrounded to Earth?
  - a) Five
  - b) Six
  - c) Seven
  - d) Eight
- 7) How many satellites on the surface of Earth are used so that the location can be produced?
  - a) Three
  - b) Four
  - c) Five
  - d) Six
- 8) How many satellites are required to measure 2-D position i.e., the longitude and the latitude?
  - a) One
  - b) Two
  - c) Three
  - d) Four
- 9) The Engineering projects which require surveying continuously over a longer duration prefer which technique?
  - a) Static GPS baseline
  - b) Real time Kinematic (RTK) observations
  - c) Continuously operating reference stations
  - d) All the above

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

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

- 1) Compass satellite system of navigation is operated under Russian government. (True /False)
- 2) The current GPS consists of three major segments. (True /False)
- 3) The GPS operated by Indians is \_\_\_\_\_.
- 4) A device altitude can be measured using fourth satellite. (True /False)
- 5) The components partitioned in GPS are known as \_\_\_\_\_.
- 6) The US Space Forces maintains, develops and operates \_\_\_\_\_ segments.

**Q.2 Answer the following 16**

- a) NAVSTAR GPS
- b) Segments of GPS
- c) location of GPS receiver
- d) Write advantages of GPS.

**Q.3 Answer the following**

- a) Differential GPS surveying vs static GPS surveying. 08
- b) History of GPS. 08

**Q.4 Answer the following**

- a) How will plan effective sitting and routing by GPS? 08
- b) Military application. 08

**Q.5 Answer the following**

- a) Types of positioning technique. 08
- b) Write a note on NAVSTAR GPS 08

**Q.6 Answer the following**

- a) Describe in detail vehicle tracking. 08
- b) Write a data transfer and analysis. 08

**Q.7 Answer the following**

- a) Difference between GPS and GNSS. 08
- b) Discuss GALILEO. 08