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**M.Sc. (Semester - I) (New) (CBCS) Examination: Oct/Nov - 2022
(GEOINFORMATICS)
Introduction to Geography**

Day & Date: Monday, 13-02-2023
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 is the highest atmospheric layer?
 - a) Stratosphere
 - b) Lithosphere
 - c) Exosphere
 - d) Troposphere
- 2) Which one of the four regions have ozone layer?
 - a) Mesosphere
 - b) Stratosphere
 - c) Troposphere
 - d) Thermosphere
- 3) What is stated in terms of grams of water vapors per kilogram of moist air?
 - a) Relative humidity
 - b) Specific humidity
 - c) Absolute humidity
 - d) Vapor pressure
- 4) A topographical map with scale 1: 50000 indicates 1 cm to _____.
 - a) 500 m
 - b) 50 km
 - c) 5 km
 - d) 50 m
- 5) Cyclones are caused due to _____.
 - a) high pressure
 - b) low pressure
 - c) high density
 - d) low temperature
- 6) What will happen if the temperature of water is lowered from 8 °C to 3°C?
 - a) Water will not change in volume
 - b) Water will freeze
 - c) The volume will first decrease, then increase
 - d) The volume will first increase, then decrease
- 7) Which of the following reasons is responsible for lack of vegetation in the deserts?
 - a) Absence of B-horizon in the soil
 - b) Heavy volume of sands
 - c) Lack of rainfall
 - d) High temperature
- 8) Which of the following continents has all types of climatic zones?
 - a) North America
 - b) South America
 - c) Asia
 - d) Australia
- 9) Which of the following is a subsistence crop?
 - a) Rubber
 - b) Tobacco
 - c) Papyrus
 - d) Corn

- 10) Which of the following terms best describes the practices of a group of farmers who rely on one or two economically lucrative crops?
- a) Pastoralism
 - b) Aquaculture
 - c) Cash Cropping
 - d) Ranching

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

- 1) _____ dreaminess color, texture, chemical properties, mineral content and permeability of soil.
- 2) The Bhopal gas tragedy is an example of _____.
- 3) The term ecosystem was proposed by _____.
- 4) The part of the earth's surface and atmosphere where plants and animals live is called Biosphere. (True/False)
- 5) _____ plays an important part in completion of hydrological cycle.
- 6) Bajra is cultivated in Northern Indian states during the _____ cropping season.

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

- a) What is Climate?
- b) Types of winds
- c) Difference between Man-made and Natural Hazards
- d) Explain Stratosphere.

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

- a) Composition of Atmosphere
- b) Explain in details Natural hazards. What is Drought?

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

- a) Types of Temperature
- b) What is Soil Profile explain in details?

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

- a) What are the Clouds? Explain the types of clouds.
- b) What are the man-made hazards? Explain Chemical Spills.

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

- a) Precipitation and the types of precipitation.
- b) What is transport? What are the types of transport?

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

- a) Major agricultural types in India.
- b) Explain functional classification of Town.

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**M.Sc. (Semester – I) (New) (CBCS) Examination: Oct/Nov-2022
(GEOINFORMATICS)
Fundamentals of Geoinformatics**

Day & Date: Tuesday, 14-02-2023
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) Each pixel is associated with a number known as _____.
a) Series number b) Account number
c) Band number d) Digital number
- 2) In Remote Sensing, there are _____ type of resolution.
a) Two b) Three
c) Four d) Five
- 3) DGPS stands for _____.
a) Digital Global Positioning System
b) Differential Global Positioning System
c) Defence of Ground Positioning System
d) Different Ground Positioning System
- 4) Data that describe the geometry of spatial feature called as _____.
a) External Data b) Spatial Data
c) Population Data d) Source Data
- 5) The first aerial photograph taken from kite is credited to an English meteorologist _____.
a) E.D. Archibald b) Warner
c) D. Watson d) G. Smith
- 6) The distance between two successive crest or trough is called _____.
a) Amplitude b) Frequency
c) Wave number d) Wavelength
- 7) Components of GIS are _____.
a) Computer system b) GIS software's
c) Data d) All of the above
- 8) Remote sensing can be as basic as _____.
a) Putting cameras on camels
b) TV remotes
c) Putting sensors on satellites
d) Putting cameras on airplanes
- 9) The most important source of electromagnetic energy is _____.
a) Sun b) Moon
c) Atmosphere d) Earth

- 10) Wavelength ranges of visible spectrum is _____.
 - a) 0.3-0.38
 - b) 0.4 to 0.7
 - c) 0.7-10
 - d) 10-100

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

- 1) IFOV stands for _____.
- 2) _____ makes it possible to precisely identify locations on the earth by measuring distance from the satellites.
- 3) A photograph taken from an air-borne platform using a precision camera is known as aerial photograph.
 - a) True
 - b) False
- 4) Regions of the spectrum where the radiation can pass through the atmosphere are called atmospheric windows.
 - a) True
 - b) False
- 5) The control segment consists of the users and their GPS receivers.
 - a) True
 - b) False
- 6) Sensors are devices used for making observations.
 - a) True
 - b) False

Q.2 Answer the following. 16

- a) Stereoscopic parallax
- b) Components of GIS
- c) Write short note on Total station.
- d) Advantages of remote sensing.

Q.3 Answer the following. 08

- a) Explain in detail point, line and polygon with example. 08
- b) Explain in detail types of aerial photographs on the basis of camera axis. 08

Q.4 Answer the following. 08

- a) Write note on GPS segments. 08
- b) Write in detail geospatial data models. 08

Q.5 Answer the following. 08

- a) Explain in brief Atmospheric window. 08
- b) Write notes on topology. 08

Q.6 Answer the following. 08

- a) Define Aerial Photography and write note on its history in India. 08
- b) Explain in detail spatial and Radiometric Resolution. 08

Q.7 Answer the following. 08

- a) Write note on spatial and non-spatial data. 08
- b) Explain in brief electromagnetic spectrum. 08

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**M.Sc. (Semester - I) (New) (CBCS) Examination: Oct/Nov-2022
(GEOINFORMATICS)**

Computer Applications in Earth Sciences

Day & Date: Wednesday, 15-02-2023
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) Multiple choice questions.

10

- 1) Which of following is an output device?
 - a) Barcode reader
 - b) Electronic whiteboard
 - c) LCD Projection panels
 - d) Gamepad
- 2) Which is measuring unit in computer system?
 - a) Kilobyte
 - b) megabyte
 - c) Gigabyte
 - d) All of the above
- 3) Which of the following system allowing in person electronic meeting between individuals or groups located in different places?
 - a) E-mail
 - b) Videoconferencing system
 - c) Voice- mail Messaging
 - d) Fax Machines
- 4) SQL stands for _____.
 - a) structured query list
 - b) structure query language
 - c) sample query language
 - d) none of these
- 5) Which is not application software?
 - a) Windows NT
 - b) page maker
 - c) Win word XP
 - d) photoshop
- 6) Which of following is both input-output device?
 - a) Touch screen
 - b) Microphone
 - c) Joy stick
 - d) Computer output microfilm
- 7) The _____ refers to the way data is organized in and accessible from DBMS.
 - a) database hierarchy
 - b) data organization
 - c) data sharing
 - d) data model
- 8) _____ is the best description Read-Only Memory (ROM).
 - a) nonvolatile, used store information that changes during system operation
 - b) volatile, used to store information that changes during system operation
 - c) nonvolatile, used to store information that does not change during system operation
 - d) volatile, used to store information that does not change during system operation

- 9) What is the full form of DBMS?
a) data of binary management system
b) database management system
c) database management service
d) data backup management system
- 10) RAM stands for _____.
a) Random access memory b) Random analysis
c) Read able memory d) Random available memory

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

- 1) HTTP stands for _____.
2) Always keep the mouse on the mouse pad. (True/False)
3) Every computer must have an _____.
4) DVD means _____.
5) DBMS is a software for creating and managing database. (True/False)
6) JPEG stand for _____.

Q.2 Answer the following**16**

- a) Software
b) SQL
c) RDBMS
d) MS-Word

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

- a) Advantages and disadvantages of Internet
b) Use of computer in geological study

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

- a) Difference between software and hardware
b) Describe the following:
1) Hierarchical model
2) Relational model

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

- a) Explain in detail in advantages of DBMS in Earth science.
b) Describe in details the type of network.

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

- a) Advantages and disadvantages of input and output devices
b) Land use land cover

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

- a) RDBMS -table relationship
b) Role of data base administrator

B) Fill in the blanks**06**

- 1) The field of geology that deals with the form, classification, mechanism, and causes of these rock structures' evolution are known as _____.
- 2) The _____ rocks have a significant stratification.
- 3) The two sides of a fold are called its _____.
- 4) The angle at which a sedimentary bed is inclined from the horizontal is called the _____.
- 5) The father of geology is _____.
- 6) The hardness of quartz is _____.

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

- a) Define rock and write a short note on types of rock.
- b) What are Base Metals?
- c) Describe Clinometer?
- d) Write a note on rock cycle.

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

- a) Explain physical properties of minerals.
- b) Explain in detail the classification of sedimentary rocks.

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

- a) Explain in detail the textures of Igneous rocks.
- b) Define Faults and types of Faults.

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

- a) Define Folds and types of Folds.
- b) Explain silicate structures and its types.

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

- a) What are the processes of formation of Gold deposits?
- b) Feldspar group of minerals.

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

- a) Explain in detail the Pyroxene group of minerals
- b) Explain textures/structures of metamorphic rocks.

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**M.Sc. (Semester – II) (New) (CBCS) Examination: Oct/Nov-2022
(GEOINFORMATICS)
Digital Image Processing**

Day & Date: Monday, 20-02-2023
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) Each Element of the matrix is called _____.
 - a) Cell
 - b) Coordinate
 - c) Value
 - d) Point
- 2) Training sites selected by using a _____ feature.
 - a) Point
 - b) Polygon
 - c) Line
 - d) None of these
- 3) _____ method uses a linear expression to model the relationship between input and output values.
 - a) Non-linear
 - b) Rectification
 - c) Linear
 - d) Noise correction
- 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) Image Enhancement
 - b) Image Rectification
 - c) Image Classification
 - d) None of these
- 5) _____ is the process by which the tonal variations in an image, in selected ranges or frequencies of the pixel values, are enhanced or suppressed.
 - a) Filtering
 - b) Rectify
 - c) Sampling
 - d) Layer stacking
- 6) Enhancement techniques are _____.
 - a) Contrast stretch
 - b) Density slicing
 - c) Edge enhancement
 - d) All of the above
- 7) _____ errors correspond to non-diagonal column elements.
 - a) Commission
 - b) Omission
 - c) Kappa
 - d) All of the above
- 8) _____ is used to make it easier for visual interpretation and inferences.
 - a) Image Enhancement
 - b) Image Rectification
 - c) Image Classification
 - d) None of these
- 9) _____ Classifiers do not utilize training data as the basis for classification.
 - a) Supervised
 - b) Unsupervised
 - c) Error Matrix
 - d) None of these

10) _____ are the specific pixels 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

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

06

- 1) _____ errors are occurring due to mechanical, electrical or communicational failures.
- 2) _____ is represented in a remotely sensed image as a cell in an array of data values.
- 3) In _____ classification technique, the location of land cover types should be known a priori.
- 4) Intensity levels in 8-bit image are _____.
- 5) A kappa value of 1 represents perfect agreement, while a value of 0 represents no agreement.
 - a) True
 - b) False
- 6) Information classes is same as spectral classes.
 - a) True
 - b) False

Q.2 Answer the following.

16

- a) Geometric Errors and their types
- b) Band Combination
- c) Maximum likelihood classifier
- d) Unsupervised classification

Q.3 Answer the following.

16

- a) What is digital image classification? Explain the supervised classification.
- b) Minimum-Maximum Linear Contrast Stretch.

Q.4 Answer the following.

16

- a) Define image enhancement & explain the contrast image enhancement technique.
- b) What is Geometric correction? Explain the geometric errors and corrections.

Q.5 Answer the following.

16

- a) Explain Non-linear Contrast Enhancement with methods.
- b) Write in brief on Maximum likelihood classifier.

Q.6 Answer the following.

16

- a) Advantage and disadvantage of unsupervised classification
- b) Texture classification approach

Q.7 Answer the following.

16

- a) Application of Fuzzy logic in Crop Classification
- b) Standard Deviation

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**M.Sc. (Semester - II) (New) (CBCS) Examination: Oct/Nov-2022
(GEOINFORMATICS)
Spatial Analysis**

Day & Date: Tuesday, 21-02-2023
Time: 11:00 AM To 02:00 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) Multiple choice questions.

10

- 1) The process of using data points with known values to estimate values at known points (in same region or nearby region) is called spatial _____.
 - a) Prediction
 - b) Interpolation
 - c) Adjustment
 - d) Reflection
- 2) The first uses of map based analysis in Dr. John snow of London in _____.
 - a) 1854
 - b) 1754
 - c) 1984
 - d) 1870
- 3) _____ creates a composite map by combining the geometry and attributes of the input data sets.
 - a) Geometry
 - b) Topology
 - c) Overlay operation
 - d) Projection
- 4) Maximum number of link required for complete one circuit _____.
 - a) 2
 - b) 3
 - c) 4
 - d) 5
- 5) The Map Algebra language is a programming language developed to perform _____ modeling.
 - a) geographic
 - b) geologic
 - c) cartographic
 - d) none of these
- 6) _____ is following not Boolean logic operation.
 - a) AND
 - b) OR
 - c) +
 - d) NOT
- 7) In the world of GIS, another term for the property of connectivity is known as _____.
 - a) topology
 - b) proximity
 - c) Boolean
 - d) fuzzy
- 8) Digital representation of the continuous variation of relief over space is known as _____.
 - a) DEM
 - b) TIN
 - c) Fractal
 - d) None of these
- 9) C2 matrix = _____.
 - a) $C1 \times C1$
 - b) $C2 \times C2$
 - c) $C3 \times C3$
 - d) $C4 \times C4$

- 10) DEM stands for _____.
a) Digital Elevation Meter b) Distance Elevation Model
c) Digital Elevation Model d) Distance Elevation Meter

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

- 1) Meta data is data about data. (True/False)
- 2) Key components of 'spatial data' quality include positional accuracy. (True/False)
- 3) Spatial indexes can not be created on NOT NULL spatial column. (True/False)
- 4) Boolean operation has _____ types.
- 5) _____ point pattern is a set of locations generated by some random process.
- 6) Spatial databases are also known as _____.

Q.2 Answer the following 16

- a) Describe DEM and its applications.
- b) Explain in details tool of Geo-processing.
- c) What is 3D analysis? Explain the contents of surface analysis.
- d) What is point pattern analysis? Explain the types of spatial model.

Q.3 Answer the following. 16

- a) Explain in details Network analysis.
- b) Write a note on Normative model.

Q.4 Answer the following. 16

- a) Explain in detail Local & Focal operation.
- b) Discuss in brief Overlay operation.

Q.5 Answer the following. 16

- a) Explain in detail Universal Transverse Mercator (UTM).
- b) History of GIS.

Q.6 Answer the following. 16

- a) Write a note on Hydrological tool.
- b) Discuss in brief Vectorization.

Q.7 Answer the following. 16

- a) What is C3 matrix? Discuss the C3 matrix.
- b) Write a note on Rasterization.

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**M.Sc. (Semester - III) (New) (CBCS) Examination: Oct/Nov -2022
(GEOINFORMATICS)**

Advance Techniques in Remote Sensing

Day & Date: Monday, 13-02-2023
Time: 11:00 AM To 02:00 PM

Max. Marks: 80

- 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 reflection of solar energy is characterised by the water content in the leaf, in the reflectiveoptical infrared:
 - a) Visible (0.4 - 0.7 μm) region
 - b) Near-IR (0.7 - 1.3 μm) region
 - c) Short wave-IR (1.3 - 2.7 μm) region
 - d) None of these
- 2) 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
- 3) 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
- 4) 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
- 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) A perfectly black body:
 - a) Is a diffuse emitter
 - b) Absorbs all the radiations of every wave lengths
 - c) Emits power of every wave length
 - d) All the above
- 7) The object of photo-interpretation is:
 - a) Identification
 - b) Recognition of objects
 - c) Judging the significance of objects
 - d) All 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 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
- 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) Fifi in the blanks OR write true / False.**06**

- 1) The reference for finding the phase of a wave is taken from the previous passage through zero from the negative to the positive direction. (True or False)
- 2) Phase of a wave is expressed as a fraction of a period with respect to a reference. (True or False)
- 3) The solid angle is equal to the ratio of the area on the sphere and the square of the radius of the sphere. (True or False)
- 4) The refractive index of a medium varies according to the wavelength of the radiation. (True or False)
- 5) The first man-made satellite, Sputnik-T was launched on 4th October, 1959. (True or False)
- 6) For the same feature, the photograph taken from the satellite vertically above the aircraft, the height displacement is lesser than the aerial photograph. (True or False)

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

- a) Absorption
- b) Nearest Neighbour Interpolation
- c) Thermal Radiation laws
- d) Landsat

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

- a) Explain role of remote sensing to monitor land use changes.
- b) Explain the stages of remote sensing.

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

- a) Explain different types of platforms.
- b) Thermal infrared data collection (8)

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

- a) Discuss about different types of sensors used in the remote sensing.
- b) Thermal infrared sensing and its application

Q.6 Answer the following.

16

- a) Explain supervised classification.
- b) Explain about EMR's interaction with atmosphere.

Q.7 Answer the following.

16

- a) Discuss the history and development of remote sensing.
- b) Explain electromagnetic spectrum with a neat diagram.

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**M.Sc. (Semester - III) (New) (CBCS) Examination: Oct/Nov-2022
(GEOINFORMATICS)
Web GIS**

Day & Date: Tuesday, 14-02-2023
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) The first web browser was invented in _____.
a) 1990 b) 1988
c) 1987 d) 1996
- 2) The concept of WWW was designed in _____.
a) 1988 b) 1989
c) 1987 d) 1985
- 3) A _____ consists of many web pages linked together in a coherent fashion.
a) Website b) Webserver
c) WWW d) URL
- 4) Internet was formed in the year _____.
a) 1988 b) 1996
c) 1989 d) 1990
- 5) Find out the primary domain name from the example given below:
su.digitaluniversity.ac
a) www b) digitaluniversity
c) ac d) all the above
- 6) What does URL stands for?
a) Universal Resource Locator
b) Universal Resource locate
c) Uniform Resource Locator
d) Uniform Resource locate
- 7) .net represents which types of organization.
a) Internet infrastructure and service provide
b) Non-profit organization
c) Profit organization
d) None of these
- 8) A _____ is a set of rules that govern data communications.
a) UTM b) TCP
c) Protocol d) Spatial analytical tools
- 9) TCP Stands for _____.
a) Transmission Control Protocol
b) Transfer Control Protocol
c) Telecommunication Control Protocol
d) None of these

- 10) WMS Stand for _____.
a) Web Map Series b) Web Map Software
c) Web Map Service d) Website Main Server

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

- 1) Telecommunication Network is application-level protocol that allows a user to log in to another computer from his or her current computer in a network environment.
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 TCP/IP Protocol Architecture, the second layer is the host-to-host or transport layer.
a) True b) False
- 4) Google Earth Engine is open-source WEBGIS Platform.
a) True b) False
- 5) GeoServer was started in 2002 by The Open Planning Project (TOPP), a non-profit technology incubator based in New York.
a) True b) False
- 6) HTTP is an application protocol that runs on top of the TCP/IP suite of protocols.
a) True b) False

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

- a) Write short note IP address system.
- b) Write the difference between IPV4 and IPV6.
- c) What are main key elements of protocol?
- d) Write short note on inter networking layer.

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

- a) Explain in details TCP.
- b) Write a note Domain Name System (DNS).

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

- a) Which are Internet GIS Applications and write about their utilization.
- b) What is the difference between TCP and UDM?

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

- a) Write A procedure Publishing WMS layer using Geoserver.
- b) Write a note Intelligent Transportation System.

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

- a) Write note on Hyper Text Transfer Protocol.
- b) Write a note Data standards and policies.

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

- a) What Internet? Discuss the history and requirements of Internet.
- b) Explain data warehousing and data sharing in GIS.

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**M.Sc. (Semester - III) (New) (CBCS) Examination: Oct/Nov-2022
(GEOINFORMATICS)
Geomorphology**

Day & Date: Wednesday, 15-02-2023
Time: 11:00 AM To 02:00 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) Multiple choice questions.

10

- 1) Soil is composed of _____.
 - a) Organic matter produced by organisms
 - b) Fragments of bedrocks
 - c) Clay minerals formed by the chemical alteration
 - d) All of these
- 2) When water, Ice and wind move particles of rock and soil from one place to another _____.
 - a) Sediment
 - b) Weathering
 - c) Erosion
 - d) Deposition
- 3) The Father of Geomorphology is _____.
 - a) King
 - b) W. M. Davis
 - c) Crickmay
 - d) Walther penk
- 4) When the Rivers discharge their waters from all directions into a lake or depression, the pattern is known as _____.
 - a) Trellis
 - b) Dendritic
 - c) Radial
 - d) Centripatel
- 5) _____ topography is formed due to the weathering of soluble rocks such as limestone and dolomite.
 - a) Desert
 - b) Deposition
 - c) Karst
 - d) Glacial
- 6) Sandstone is an example of _____.
 - a) Non- Foliated rock
 - b) Sedimentary rock
 - c) Igneous rock
 - d) Metamorphic rock
- 7) India is divided into how many earthquake zone (Seismic zone)?
 - a) 4
 - b) 2
 - c) 6
 - d) 5
- 8) Ultimate maximum relief is the result of _____.
 - a) Old stage
 - b) Youthful stage
 - c) Mature stage
 - d) None of these
- 9) What causes all mass movement?
 - a) Rain
 - b) Snow
 - c) Gravity
 - d) Deforestation
- 10) Which soil component makes up about 5%.
 - a) Water
 - b) Organic matter
 - c) Air
 - d) Minerals

B) Write true or false.**06**

- 1) Continental drift theory was proposed in 1912 by Alfred Wegener.
(True/False)
- 2) The outer core is responsible for earth's magnetic field. (True/False)
- 3) Geomorphology is concerned with the study of landforms.
(True/False)
- 4) Drip stone found in _____ topography.
- 5) Ox-bow lake is a characteristic feature _____.
- 6) Yardangs are formed due to _____ erosion.

Q.2 Answer the following**16**

- a) Explain stalactite and stalagmite.
- b) Glaciers
- c) Horton method
- d) Plate tectonic theory

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

- a) Discuss types of weathering.
- b) Explain the texture of soil.

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

- a) Explain Horton and Strehler methods of stream ordering.
- b) Types of Landslide

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

- a) Describe the drainage system and Explain major drainage system.
- b) Explain the erosional land forms associated with rivers.

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

- a) Explain the development of rivers valleys.
- b) Soil formation

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

- a) Describe nature and scope of Geomorphology.
- b) Cycle of erosion: Devis

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**M.Sc. (Semester – IV) (New) (CBCS) Examination: Oct/Nov-2022
(GEOINFORMATICS)**

Geoinformatics Approach for Natural Resource Management

Day & Date: Monday, 20-02-2023
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 correct alternative.

10

- 1) Geostationary satellites are ideal for _____.
a) Land mapping b) Meteorology
c) Communication d) None of these
- 2) Full form of TIN is _____.
a) Triangulated Irregular Net b) Triangulated Irregular Network
c) Triple Irregular Network d) None of the above
- 3) _____ wavelength can penetrate clouds.
a) Microwave b) Thermal
c) Optical d) All the above
- 4) Spatial resolution of LISS IV _____.
a) 0.5 m b) 23.5 m
c) 5.8 m d) 72.5 m
- 5) Which of the following has the lowest albedo (%)?
a) Vegetation b) Desert
c) Bare Soil d) Calm Water
- 6) _____ band is used for geomorphological and geological feature mapping and monitoring.
a) Visible b) Thermal
c) Microwave d) Radiowave
- 7) SST is stand for _____.
a) Surface Skin Temperature
b) Solar Space Telecome
c) Sea Surface Temperature
d) Satellite to Satellite Tracking
- 8) What is metadata?
a) It is 'data about data'
b) It is 'metrological' data
c) It is 'Oceanic' data
d) It is 'Contour' data
- 9) _____ is an important parameter for many natural resource applications such as hydrological modeling, stream flow forecasting, and flood forecasting.
a) Soil moisture b) Parameter
c) Water resources d) None of these

- 10) Which of the following is responsible for desertification?
a) Deforestation b) Mining
c) Overgrazing d) All of the above
- B) Fill in the blanks:** **06**
- 1) _____ data is useful for ocean monitoring.
2) _____ band is useful measurement of urban heat.
3) The area to which a species is biologically adapted to live is known as _____.
4) Land cover" is distinct from _____.
5) MSS, TM and LISS-I sensors are _____ type of sensors.
6) The most appropriate method of rain water harvesting is rise of _____ level.
- Q.2 Answer the following.** **16**
- a) What is ASTER?
b) What is Phytoplankton?
c) What is Scale of the map?
d) What is Natural Gas?
- Q.3 Answer the following.** **16**
- a) Explain the details application of Remote sensing and G.I.S. in forest studies.
b) Which satellite data is useful for SST mapping and explain with the help of case studies.
- Q.4 Answer the following.** **16**
- a) Write a note on Ocean color mapping.
b) Explain in detail Ground water zone mapping.
- Q.5 Answer the following.** **16**
- a) What is DGPS? Explain applications and Advantages of DGPS.
b) Explain in detail the use of remote sensing and GIS in Marine ecology.
- Q.6 Answer the following.** **16**
- a) What is Watershed management? Explain in detail the use of remote sensing and GIS in Watershed management.
b) Explain in detail the use of remote sensing and GIS in Potential fishing zone.
- Q.7 Answer the following.** **16**
- a) Explain different parameters of morphometric analysis.
b) Explain various types of soils.

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**M.Sc. (Semester – IV) (New) (CBCS) Examination: Oct/Nov-2022
GEOINFORMATICS**

Application of Rs And GIS In Disaster Management

Day & Date: Tuesday, 21-02-2023
Time: 03:00 PM To 06:00 PM

Max. Marks: 80

- Instructions:** 1) Question 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 Choose correct alternative.

10

- 1) Powerful tsunami is produced by _____.
a) Volcanic eruptions b) Cyclone
c) Tornados d) Earthquake
- 2) Where is the hole in the Ozone Layer?
a) Arctica b) America
c) Antarctica d) Africa
- 3) In preparation for an emergency, employees should become familiar with ____.
a) Emergency equipment
b) Exits and evacuation routes
c) Storm shelters
d) All of the above
- 4) The Tropical Cyclones of hurricane force in the western North Pacific are known as _____.
a) Thunderstorm b) Typhoons
c) Tornadoes d) All the above
- 5) Exposed to a hazardous 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
- 6) Typically, the best course of action to take during 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) Leave the area immediately
- 7) _____ only confirmed active volcano in South Asia.
a) Sant merry's Island b) Lakshadweep islands
c) Sindudurge Island d) Barren Island
- 8) _____ factor responsible for Sea Level Change.
a) High precipitation b) Melting Glaciers
c) Silting of rivers d) Decrease in aquatic life
- 9) What type of disaster is most prominent in India?
a) Flood b) Draught
c) Cyclone d) Earthquake

- 10) Which of the following disasters can be triggered by an earthquake?
- a) Tsunami
 - b) Intense ground shaking
 - c) A landslide
 - d) All of the above

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

- 1) Disasters can be broadly termed as _____ types.
- 2) What devices are used to track minute changes in volcanoes' ground slope and shape?
- 3) India's total cyclone-prone area is _____.
- 4) Disaster management is important to avoid serious circumstances, (True/False)
- 5) Bhuj Earthquake took place in 2001. (True/False)
- 6) Fukushima Daiichi nuclear disaster took place in India. (True/False)

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

- a) Write note on Vegetation index.
- b) Describe the Drought and its types.
- c) What is Cyclone, and its advantages and disadvantages.
- d) Write note on Acid rain.
- e) What is Desertification?
- f) Chemical hazards.

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

- a) Write note on Volcanic prone zone of India.
- b) Describe the Effect of land slide.

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

- a) What is hazard? explain in brief Types of Hazards.
- b) Write note on Risk prone assessment of disaster.

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

- a) Write note on Disaster and sea level rise.
- b) Explain the causes of ozone layer depletion.

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

- a) Write a note on flood plan area analysis and management.
- b) What is earthquake? Discuss causes and effects of earthquake.

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

- a) What is Global warming effect, and its advantages and disadvantages.
- b) Describe in brief Industrial disaster causes.

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**M.Sc. (Semester – IV) (New) (CBCS) Examination: Oct/Nov-2022
(GEOINFORMATICS)**

Applications of Global Positioning System

Day & Date: Wednesday, 22-02-2023
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 process of getting digital equivalent of analogue signals for processing?
 - a) Data acquisition
 - b) Data processing
 - c) Image recognition
 - d) Pattern recognition
- 2) Which segment of GPS consists of satellite?
 - a) Control
 - b) Space
 - c) User
 - d) Navigation
- 3) What is meant by GPS?
 - a) Global Processing System
 - b) Global Positioning System
 - c) Geographic Positional System
 - d) Geographic Processing System
- 4) Which is an application of GPS for visually impaired in India?
 - a) Marine GOS
 - b) Drishti
 - c) Ranchers
 - d) GIS
- 5) Which country developed the GPS?
 - a) USA
 - b) India
 - c) Russia
 - d) Italy
- 6) Which of the following can be affected by atmospheric path disturbances?
 - a) Modern GPS surveying
 - b) Conventional GPS
 - c) Absolute positioning
 - d) Resection method
- 7) Which of the following doesn't belong to the relative positioning techniques?
 - a) Real-time kinematic technique
 - b) Viscous GPS technique
 - c) Kinematic GPS surveying technique
 - d) Differential GPS technique
- 8) Which of the following is considered as modern GPS technology?
 - a) GIS
 - b) GPS mode
 - c) Instantaneous mode
 - d) Kinematic positioning technique

- 9) _____ tracks the satellites as they are passed over.
a) Master Control Stations b) Monitor stations
c) Both a) and b) d) None of above
- 10) Global Positioning Service (GPS) uses 24 satellites in _____.
a) 5 Orbit b) 6 Orbit
c) 8 Orbit d) 24 Orbit

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

- 1) Modified version of GPS used to approach precision in the military applications is known as _____.
- 2) The components partitioned in GPS are known as _____.
- 3) _____ is present on the satellites of GPS to contribute the accurate time information.
- 4) Minimum _____ satellites are operational in the constellation of GPS.
- 5) The two satellites and its extensions connecting line forming the axis of _____.
- 6) During _____ year the project on GPS was launched?

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

- a) Stop & go technique of GPS.
- b) Static Positioning
- c) NAVSTAR GPS
- d) What is Geo positioning?

Q.3 Answer the following.

- a) Define GPS and give applications of GPS in Vehicle tracking.
- b) Explain in detail the segment of GPS.

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

- a) Basic modes of GPS surveying.
- b) Write in details about GLONASS.

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

- a) What is DGPS? explain applications and advantages of DGPS.
- b) GPS receivers based on: data type and yield.

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

- a) Data transfer and analysis in GPS.
- b) Navigational application.

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

- a) Explain different military application of GPS.
- b) Explain advantages and limitations of GPS.

08**08**

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**M.Sc. (Semester – IV) (New) (CBCS) Examination: Oct/Nov-2022
(GEOINFORMATICS)**

Applications of RS & GIS in Land Evaluation

Day & Date: Thursday, 23-02-2023
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 is the main causative factor for desertification?
 - a) Hilly areas
 - b) Plains
 - c) Reverine areas
 - d) Desert areas
- 2) Soil conservation means: _____.
 - a) To check soil erosion by afforestation
 - b) Prevention of spread of desert
 - c) To check soil erosion by wind and rain
 - d) All of these
- 3) The terms and definitions used in watershed management are _____.
 - a) Albedo
 - b) Alluvium fans
 - c) Aquiclude
 - d) All of these
- 4) A geologic formation which contains water and transmits it from one point to another in quantities sufficient to permit economic development is called _____.
 - a) Alluvial fan
 - b) Albedo
 - c) Aquifer
 - d) Aquiclude
- 5) Improvement techniques of arable lands are: _____.
 - a) Sub soiling
 - b) Contour cultivation
 - c) Mulch tillage
 - d) All of these
- 6) According to land capability classification, the soils, which are not suitable for crop cultivation, belong to _____.
 - a) VIII
 - b) III
 - c) VII
 - d) I
- 7) Alkali soils are generally found in _____.
 - a) Sub-humid climate
 - b) Arid and semi-arid climate
 - c) Temperate climate
 - d) None of these
- 8) The percentage of land which is habitable and arable is _____.
 - a) 20%
 - b) 40 %
 - c) 50%
 - d) 60%
- 9) The percentage of land surface of earth which is covered with hot deserts us _____.
 - a) 13%
 - b) 23%
 - c) 33%
 - d) 43%

