

Seat No.	
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Set **P**

**M.Sc. (Semester - I) (CBCS) Examination Oct/Nov-2017**  
**Geoinformatics**  
**INTRODUCTION TO GEOGRAPHY**

Day & Date: Thursday, 16-11-2017  
 Time: 10.30 AM to 01.00 PM

Max. Marks: 70

- Instructions:** 1) Answers any five questions.  
 2) All questions carry equal marks.  
 3) Question 1 is compulsory.  
 4) Answer any two questions from Q.2, 3 & 4.  
 5) Answer any two questions from Q.5, 6 & 7.  
 6) Draw neat and labeled diagrams wherever necessary.

**Q.1 Choose the alternatives given below.****14**

- 1) \_\_\_\_\_ is the layer where most of the weather phenomenon occurs in atmosphere.
  - a) Ozonosphere
  - b) Troposphere
  - c) Mesosphere
  - d) Stratosphere
- 2) \_\_\_\_\_ in India is the area of most extensive mangrove vegetation.
  - a) Sunderbans
  - b) Ran of Kutch
  - c) West coast
  - d) Kerala
- 3) \_\_\_\_\_ introduced the concept of 'precipitation evaporation ratio' in classification of climates.
  - a) Thornbury
  - b) Critch field
  - c) Koeppen
  - d) Blair
- 4) Microscopic organisms feeding on the detrital organic matter from all levels are known as \_\_\_\_\_.
  - a) Herbivores
  - b) Decomposers
  - c) Omnivores
  - d) Carnivores
- 5) \_\_\_\_\_ blow from the sub-tropical high pressure area towards the equatorial low-pressure belt.
  - a) Westerlies
  - b) Trade winds
  - c) Monsoon
  - d) Local winds
- 6) The siting factor/s of rural settlements is/are
  - a) Water supply
  - b) Land attributes
  - c) Defence
  - d) All of these options
- 7) The planning commission has categorized \_\_\_\_\_ agro-climatic zones in India.
  - a) 10
  - b) 20
  - c) 15
  - d) 25
- 8) PMGSY stands for \_\_\_\_\_.
  - a) Pradhan Mantri Gram Sadak Yojana
  - b) Pradhan Mantri Ghat Sadak Yojana
  - c) Pradhan Mantri Galli Sadak Yojana
  - d) None of the above options

- 9) Population density map uses \_\_\_\_\_ type of data.  
 a) Nominal b) Hierarchical  
 c) Differentiated d) Ratio
- 10) In \_\_\_\_\_ type of precipitation the size of drop is less than 0.5 mm.  
 a) Rain b) Drizzle  
 c) Hail d) Snow
- 11) The 1960's approach of geography as spatial science was identified with language and method of \_\_\_\_\_.  
 a) Ecosystem b) Environment  
 c) Landscape d) Geometry
- 12) Global population witnessed accelerated increase approximately 200 years Back due to \_\_\_\_\_.  
 a) Green revolution b) Agricultural revolution  
 c) Industrial revolution d) Medical revolution
- 13) 10 degree channel separates \_\_\_\_\_.  
 a) Indian Peninsula and Sri Lanka Island  
 b) Lakshdweep and Aminidivi Islands  
 c) Andaman and Nicobar Islands  
 d) Nicobar and Indonesia Islands
- 14) Stratosphere lies beyond troposphere up to an altitude of \_\_\_\_\_.  
 a) 18 km b) 50 km  
 c) 85 km d) 400 km

- Q.2** Describe in detail the structure and composition of atmosphere. **14**
- Q.3** Discuss in brief biodiversity and write a note on its causes and importance. **14**
- Q.4** Discuss in brief the types and patterns of rural settlement. Add a note on their function and distribution. **14**
- Q.5** **Write a brief account of:** **14**  
 a) Region concept  
 b) Cyclone and anticyclone
- Q.6** **Write briefly on the following.** **14**  
 a) Ecosystem  
 b) Soil types
- Q.7** **Enumerate the following.** **14**  
 a) Types of modes of transport  
 b) Plant and Animal distribution in aquatic ecosystems.

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Set **P**

**M.Sc. (Semester - I) (CBCS) Examination Oct/Nov-2017**  
**Geoinformatics**  
**INTRODUCTION TO GEOLOGY**

Day & Date: Saturday, 18-11-2017  
 Time: 10.30 AM to 01.00 PM

Max. Marks: 70

- Instructions:** 1) Attempt totally five questions.  
 2) All Questions carry equal marks.  
 3) Question no.1 is compulsory  
 4) Attempt any two questions from Q.NO.2, 3 and 4  
 5) Attempt any two questions from Q.No.5, 6 and 7

**Q.1 A) Choose the alternatives given below.****08**

- 1) Kimberlite indicates the possibility of the presence of which of the following?
  - a) Rubies
  - b) Diamonds
  - c) Sapphires
  - d) Opals
- 2) Which out of the following minerals is formed by the decomposition of surface rocks and leaves a residual mass of weathered material?
  - a) Gold
  - b) Bauxite
  - c) Zinc
  - d) Coal
- 3) Ore minerals of iron is \_\_\_\_\_.
  - a) Siderite
  - b) Limonite
  - c) Magnetite
  - d) All of these
- 4) Concentrations of copper mineralization have been found in veins around the granite intrusion on the geological map. Which process is most likely responsible for the copper mineralization?
  - a) Evaporation
  - b) Assimilation
  - c) Placer deposition
  - d) Hydrothermal deposition
- 5) The planer surface of fracture along which displacement of the blocks takes place is known as \_\_\_\_\_.
  - a) Joint
  - b) Fracture
  - c) Fault
  - d) None of the above
- 6) An igneous structure that cuts across the bedding plane is called as \_\_\_\_\_.
  - a) Laccolith
  - b) Phacolith
  - c) Dyke
  - d) Sill
- 7) The mineral, quartz, is an example of \_\_\_\_\_.
  - a) A single-chain silicate
  - b) A framework silicate
  - c) A sheet silicate
  - d) A double-chain silicate
- 8) Which of the following is NOT considered a physical property of minerals?
  - a) Hardness
  - b) Luster
  - c) Streak
  - d) Silicate structure
- 9) Stresses produce strains in Earth materials. What are strains?
  - a) Distortions or changes in shapes
  - b) Force
  - c) Folds
  - d) Faults



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**M.Sc. (Semester - I) (CBCS) Examination Oct/Nov-2017**  
**Geoinformatics**  
**GEOMORPHOLOGY**

Day & Date: Tuesday, 21-11-2017  
 Time: 10.30 AM to 01.00 PM

Max. Marks: 70

- Instructions:** 1) All questions carry equal marks.  
 2) Objective question is compulsory.  
 3) Answer any two questions from Q.2, 3 & 4.  
 3) Answer any two questions from Q.5, 6 & 7.

**Q.1 A) Choose the alternatives given below.**

**14**

- 1) Weathering may be defined as the \_\_\_\_\_ fracturing or chemical decomposition of rock by natural agents at the surface of the earth.
  - a) Physical
  - b) Mechanical
  - c) Both a & b
  - d) None of the above
- 2) Geomorphology as the interpretative description of \_\_\_\_\_ fracture of the earth surface.
  - a) Relief
  - b) Land
  - c) Coastal
  - d) Fluvial
- 3) Structure, \_\_\_\_\_ and process are called as 'Trio of Davis'
  - a) Geology
  - b) Time
  - c) Space
  - d) Lithology
- 4) Meanders and pot holes are \_\_\_\_\_ erosional land forms.
  - a) River
  - b) Sea
  - c) Wind
  - d) Dug well
- 5) Head ward erosion occurs by \_\_\_\_\_.
  - a) Wind
  - b) Glacier
  - c) River
  - d) All the above
- 6) According to \_\_\_\_\_ 'present is the Key to the past'
  - a) W. M. Davis
  - b) James Hutton
  - c) Charles Darwin
  - d) All the above
- 7) Lapias, Poljes, ponores are the erosional landforms of \_\_\_\_\_.
  - a) River
  - b) Wind
  - c) Karsf
  - d) Sea
- 8) Drainage \_\_\_\_\_ refer to the origin and development of streams through time.
  - a) System
  - b) Pattern
  - c) Shape
  - d) Frequency
- 9) Which ocean is spreading due to plate tectonic movement.
  - a) Pacific
  - b) Atlantic
  - c) Indian
  - d) Arctic
- 10) The \_\_\_\_\_ is defined as the line where land and water meet.
  - a) Offshore
  - b) Fore shore
  - c) Shoreline
  - d) Near shore

11) \_\_\_\_\_ geomorphology provides a strategic tool for informed decision making in public policy development.

- a) Climatic
- b) Structural
- c) Applied
- d) Planetary

12) The sand dunes migrate in the \_\_\_\_\_.

- a) Leeward direction
- b) Windward direction
- c) Both a & b
- d) None of these

13) \_\_\_\_\_ is the motion of the earth's continents over geological time.

- a) Continental drift
- b) Plate tectonic
- c) Geosynclines
- d) None of these

14) Plain is topographically ideal for \_\_\_\_\_ construction.

- a) Dam
- b) Tunnel
- c) Road
- d) Building

**Q.2** Explain fundamental concept of geomorphology with suitable example. **14**

**Q.3** What is drainage system? Describe various types of drainage systems. **14**

**Q.4** Discuss erosional and depositional landform of river. **14**

**Q.5** **Write short notes on:** **14**

- a) Plate tectonic
- b) Types of coast

**Q.6** **Write briefly on the following.** **14**

- a) Normal cycle of erosion
- b) Soil formation

**Q.7** **Discuss in brief.** **14**

- a) Physical weathering
- b) Erosional landforms formed by wind.

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Set **P**

**M.Sc. (Semester - I) (CBCS) Examination Oct/Nov-2017**  
**Geoinformatics**  
**COMPUTER APPLICATION IN EARTH SCIENCE**

Day & Date: Thursday, 23-11-2017  
 Time: 10.30 AM to 01.00 PM

Max. Marks: 70

- Instructions:** 1) Answers any five questions.  
 2) All questions carry equal marks.  
 3) Question 1 is compulsory.  
 4) Answer any two questions from Q.2, 3 & 4.  
 5) Answer any two short notes questions from Q.5, 6 & 7.  
 6) Draw neat and labeled diagrams wherever necessary.

**Q.1 A) Choose the alternatives given below.****14**

- 1) \_\_\_\_\_ company is the biggest market in the microprocessor industry.
  - a) Motorola
  - b) IBM
  - c) Intel
  - d) AMD
- 2) The MS-operating system is originally developed by Microsoft for \_\_\_\_\_.
  - a) IBM
  - b) IAM
  - c) ICM
  - d) IRS
- 3) \_\_\_\_\_ is not a logical data base structure.
  - a) Tree
  - b) Relational
  - c) Network
  - d) Chain
- 4) ROM stands for \_\_\_\_\_.
  - a) Read only memory
  - b) Record only memory
  - c) Re –readable memory
  - d) Re – Readable only memory
- 5) International business machine announced in \_\_\_\_\_.
  - a) 15 August 1976
  - b) 12 August 1981
  - c) 20 September 2000
  - d) 15 August 1875
- 6) WWW stands for \_\_\_\_\_.
  - a) World wide web
  - b) World wild web
  - c) World wing web
  - d) None of the above
- 7) GUI stands for \_\_\_\_\_.
  - a) Graphical user interface
  - b) Multiused interface
  - c) Single user interface
  - d) Geographical user interface
- 8) RAM stands for \_\_\_\_\_.
  - a) Random Access memory
  - b) Raster Access memory
  - c) Read Access memory
  - d) None of these
- 9) \_\_\_\_\_ is not a valid relation database.
  - a) SYBASE
  - b) ORACLE
  - c) IMS
  - d) UNIFY
- 10) Hybrid schemes defined as a dimension table is shared by \_\_\_\_\_ fact tables.
  - a) One or two
  - b) Two or more
  - c) More to more
  - d) All of these

- 11) IBM stands for \_\_\_\_\_.
- a) International Business marks
  - b) Inter Business Mechanics
  - c) International Business Machine
  - d) All of the above
- 12) Blaise Pascal originally called \_\_\_\_\_ or the “pascaline”.
- a) Wording wheel
  - b) Adding wheel
  - c) Numerical wheel
  - d) Star wheel
- 13) MS-DOS was first introduced by Microsoft in August \_\_\_\_\_.
- a) 1982
  - b) 1980
  - c) 1981
  - d) 1983
- 14) \_\_\_\_\_ is the part of the computer used for calculating and comparing.
- a) Disc unit
  - b) Control unit
  - c) ALU
  - d) Modem

- Q.2** What is SQL? Explain Query processing. **14**
- Q.3** What is detail RDBMS. **14**
- Q.4** Define computer and state its applications in Earth sciences. **14**
- Q.5 Write short notes on:** **14**
- a) Geological mapping using computer applications
  - b) Operating system
- Q.6 Write briefly on the following.** **14**
- a) Programming language
  - b) Natural joins
- Q.7 Write short notes on:** **14**
- a) Data base security
  - b) Storage devices.



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Set **P**

**M.Sc. (Semester - II) (New) (CBCS) Examination Oct/Nov-2017  
Geoinformatics**

**INTRODUCTION TO GIS AND GPS**

Day & Date: Monday, 20-11-2017  
Time: 10.30 AM to 01.00 PM

Max. Marks: 70

- Instructions:** 1) Answers any five questions.  
2) All questions carry equal marks.  
3) Question 1 is compulsory.  
4) Answer any two from Q.2, 3 & 4.  
5) Answer any two questions from Q.5, 6 & 7.

**Q.1 Choose the alternatives given below.**

14

- 1) The \_\_\_\_\_ uses points and their X, Y coordinates to contrast spatial feature of point, line and areas.
  - a) Vector data model
  - b) Raster data model
  - c) None of these
  - d) All of the above
- 2) NAD stands for \_\_\_\_\_.
  - a) North American data
  - b) New American datum
  - c) North American Datum
  - d) None of these
- 3) \_\_\_\_\_ is a computer system for capturing, storing, analyzing and displaying geographical entities.
  - a) Remote Sensing
  - b) GPS
  - c) DGPS
  - d) Geographic information system
- 4) Components of GIS are \_\_\_\_\_.
  - a) Computer system
  - b) GIS software's
  - c) Data
  - d) All of the above
- 5) WGS stands for \_\_\_\_\_.
  - a) World Geologic System
  - b) World Geodetic System
  - c) Wide Geodetic System
  - d) World Geographic System
- 6) GIS deal with which kind of data \_\_\_\_\_.
  - a) Numeric data
  - b) Binary data
  - c) Spatial data
  - d) Complex data
- 7) What is meta data
  - a) It is data about data
  - b) It is oceanic data
  - c) It is contour data
  - d) It is metrological
- 8) DBMS stand for \_\_\_\_\_.
  - a) Database monitoring system
  - b) Database management system
  - c) Database manufacturing system
  - d) All of the above

- 9) Key component of spatial data quality include \_\_\_\_\_.
- a) Positional and temporal accuracy
  - b) Lineage and completeness
  - c) Logical consistency
  - d) All of the above
- 10) \_\_\_\_\_ of the following belong to the eight spatial relationship.
- a) Disjoint meets, equal
  - b) Content cover overlap
  - c) Inside covered by
  - d) All of the above
- 11) Minimum \_\_\_\_\_ numbers of satellites required to get position in GPS.
- a) 2
  - b) 4
  - c) 5
  - d) 6
- 12) GLONASS stand for \_\_\_\_\_.
- a) Global navigation satellite system
  - b) Global navy system
  - c) Global network satellite system
  - d) All of these
- 13) \_\_\_\_\_ is the Father of GIS
- a) Vikram sarabhai
  - b) Vijay bhatarak
  - c) Roger Tomlinson
  - d) None of these
- 14) DEM stands for \_\_\_\_\_.
- a) Digital Enhance Model
  - b) Digital Eleven Model
  - c) District Elevation Model
  - d) Digital Elevation Model

- Q.2** Describe components and advantages of GIS. **14**
- Q.3** Explain Raster and Vector data structure. **14**
- Q.4** Define GIS? Describe its history and applications. **14**
- Q.5** **Write short notes on:** **14**
- a) Topology
  - b) Hardware and software of GIS
- Q.6** **Write briefly on the following.** **14**
- a) Advantages of GPS
  - b) Map projection
- Q.7** **Write small accounts on:** **14**
- a) DGPS
  - b) DBMS

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**M.Sc. (Semester - II) (New) (CBCS) Examination Oct/Nov-2017**  
**Geoinformatics**  
**DIGITAL IMAGE PROCESSING**

Day & Date: Wednesday, 22-11-2017  
Time: 10.30 AM to 01.00 PM

Max. Marks: 70

- Instructions:** 1) All questions carry equal marks.  
2) Q. 1 is compulsory.  
3) Answer any two questions from Q.2, 3 & 4.  
4) Answer any two questions from Q.5, 6 & 7.  
5) Answer any five questions.

**Q.1 A) Choose the alternatives given below. 14**

- 1) \_\_\_\_\_ is the remote sensing satellite series of U.S.A.
  - a) IRS
  - b) SPOT
  - c) Landsat
  - d) PSLV
- 2) “K-means” approach for clustering the spectral group is also called as \_\_\_\_\_.
  - a) Kappa
  - b) ISODATA
  - c) BSQ
  - d) Matrix
- 3) In digital image, the intersection of each row, I and column, J is called as \_\_\_\_\_.
  - a) Picture
  - b) Photo
  - c) FCC
  - d) Pixel
- 4) In \_\_\_\_\_ image file format, data store or data written line by line.
  - a) BIL
  - b) Metadata
  - c) BIP
  - d) BSQ
- 5) Errors in the image Matrix known as \_\_\_\_\_.
  - a) RMS error
  - b) Kappa Coefficient
  - c) Rectification
  - d) Geometric Error
- 6) \_\_\_\_\_ is displayed by placing the infrared, red, green in the red, green and blue frame buffer money.
  - a) False color composition (FCC)
  - b) True color Composition (TCC)
  - c) Color composition
  - d) None the above
- 7) Histogram minimum method is also known as \_\_\_\_\_ technique.
  - a) Averaging
  - b) Linear
  - c) Dark pixel subtraction
  - d) Non – Linear
- 8) \_\_\_\_\_ errors correspond to non diagonal column elements.
  - a) Commission
  - b) Omission
  - c) Kappa
  - d) All of the above
- 9) Following method is not belongs to image rectification step.
  - a) Density slicing
  - b) Atmospheric error
  - c) Geometric error
  - d) Radiometric error

- 10) Image \_\_\_\_\_ technique improve the quality of image for effective visual interpretation of the various objects in the image.
  - a) Classification
  - b) Enhancement
  - c) Rectification
  - d) Modification
- 11) \_\_\_\_\_ are the features of the known ground locations can be accurately located on the digital image used for removing geometric error.
  - a) Map
  - b) Pixel
  - c) GCP's
  - d) GPS
- 12) In \_\_\_\_\_ classification method the sample of the training sites is required.
  - a) Supervised
  - b) Unsupervised
  - c) Image
  - d) None of these
- 13) \_\_\_\_\_ is the technique that convert the continuous gray tone of an image into a series of density for each corresponding digital image.
  - a) Contrast stretch
  - b) Band ratio
  - c) Density slicing
  - d) Spatial filtering
- 14) \_\_\_\_\_ is a widely used decision rule based on simple Boolean “and/or” logic.
  - a) Maximum likelihood Classifier
  - b) Parallelepiped Classifier Algorithm
  - c) Minimum Distance to means classifier
  - d) None of these

**Q.2** What is image? Explain the types of digital image file storage formats? **14**

**Q.3** Explain the sources of radiometric errors? Discuss the various methods for removing radiometric errors. **14**

**Q.4** What is contrast stretch? Apply linear contrast stretching method and rearrange the DN value of the following image. **14**

80	15	25	65	10
35	20	30	45	85
70	55	10	65	95
40	60	50	35	100
105	30	90	45	75

**Q.5 Write short notes on:** **14**  
a) Edge Enhancement  
b) Atmospheric Correction

**Q.6 Write briefly on the following.** **14**  
a) Minimum Distance to Means Classifier  
b) Maximum Likelihood Classifier

**Q.7 Write small account on:** **14**  
a) Unsupervised Classification  
b) Random Noise correction

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**M.Sc. (Semester - III) (New) (CBCS) Examination Oct/Nov-2017**  
**Geoinformatics**  
**SPATIAL ANALYSIS**

Day & Date: Thursday, 16-11-2017  
 Time: 02.30 PM to 05.00 PM

Max. Marks: 70

- Instructions:** 1) Attempt any five questions.  
 2) Questions No.1 Compulsory.  
 3) Attempt any two questions from Question No. 2 to 4.  
 4) Attempt any two questions from Question No. 5 to 7.  
 5) Figures to the right indicate full marks.  
 6) Draw neat and labeled diagrams wherever necessary.

**Q.1 Choose the correct alternative given in the bracket.****14**

- 1) Local functions that works on every \_\_\_\_\_ cell.
  - a) Single
  - b) Double
  - c) Multi
  - d) All of these
- 2) In order to represent the spatial information and their attributes, a data model-a set of logical definitions or rules of characterizing the \_\_\_\_\_ is adopted.
  - a) Geological data
  - b) Tabular data
  - c) Raster data
  - d) Geographical data
- 3) The \_\_\_\_\_ overlay operation is similar to the point-in-polygon overlay, with that obvious exception that a line layer is used instead of a point input layer.
  - a) Line-in-polygon
  - b) Polygon-in-polygon
  - c) Area-in-polygon
  - d) Intersection
- 4) Single layer operation is also known as \_\_\_\_\_.
  - a) Vertical operation
  - b) Overlay operation
  - c) Horizontal operation
  - d) Spatial operation
- 5) \_\_\_\_\_ system is first time designed by Peucker.
  - a) DTM
  - b) DEM
  - c) TIN
  - d) All of these
- 6) To build a new object or objects by identifying all areas that are within a certain specified distance of the original objects is called \_\_\_\_\_.
  - a) Extraction
  - b) Stream ordering
  - c) Buffering
  - d) Mosaic
- 7) \_\_\_\_\_ approximates the surface with a series of non overlapping triangles.
  - a) DEM
  - b) TIN
  - c) DTM
  - d) None of these
- 8) DTM stands for \_\_\_\_\_.
  - a) Digital Terrain Model
  - b) Datum Terrain Model
  - c) Digital Terrain Mapping
  - d) Digital Elevation Model

- 9) Source of spatial data.  
 a) GPS data  
 b) Topographic data  
 c) Aerial photograph  
 d) All of these
- 10) The \_\_\_\_\_ operation is used to determine whether a point lies inside or outside a polygon.  
 a) Polygon-in-polygon  
 b) Point-in-polygon  
 c) Line-in-polygon  
 d) Intersection
- 11) \_\_\_\_\_ is the type of grid based operation.  
 a) Network  
 b) Surface  
 c) Spatial  
 d) Local
- 12) Spatial analysis is the technique applied to structure at the human scale, most notably in the analysis of \_\_\_\_\_ data.  
 a) Raster  
 b) Vector  
 c) Spatial  
 d) Geographic
- 13) The result of \_\_\_\_\_ are dependent on the locations of the objects being analysis.  
 a) Analysis  
 b) Phenomena  
 c) Spatial analysis  
 d) None of these
- 14) A spatial network is a graph in which the vertices or edges are spatial elements associated with \_\_\_\_\_ object.  
 a) Geometric  
 b) Geographic  
 c) Geological  
 d) None of these

- Q.2** Write in detail about surface analysis. **14**
- Q.3** Explain in details tools of hydrology? **14**
- Q.4** Explain in detail DTM and its application? **14**
- Q.5** Write short note on. **14**  
 a) Multilayer operation  
 b) Geoprocessing
- Q.6** Describe in brief : **14**  
 a) C matrix  
 b) Global and focal operation
- Q.7** Write an account on: **14**  
 a) DEM  
 b) Alpha index

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**M.Sc. (Semester - III) (New) (CBCS) Examination Oct/Nov-2017  
Geoinformatics**

**ADVANCED TECHNIQUES IN REMOTE SENSING**

Day & Date: Saturday, 18-11-2017  
Time: 02.30 PM to 05.00 PM

Max. Marks: 70

- Instructions:** 1) Attempt total five questions.  
2) Questions NO.1 Compulsory.  
3) Attempt any two questions from Question.NO.2 to 4.  
4) Attempt any two questions from Question NO.5 to 7.  
5) Figures to the right indicate full marks.  
6) Draw neat and labeled diagrams wherever necessary.

**Q.1 Choose the correct alternative given in the bracket.**

**14**

- 1) \_\_\_\_\_of the following errors is produced by platform characteristics of the sensor.
 

a) Orbit drift	b) Altitude variation
c) Altitude	d) All of the above
- 2) Land sat program began in
 

a) 1972	b) 2003
c) 1973	d) 1937
- 3) First satellite of NASA was launched\_\_\_\_\_
 

a) Sputnik 2	b) Explorer 1
c) Sputnik 1	d) Terra 1
- 4) Remote sensing can be as basic as\_\_\_\_\_
 

a) Putting cameras on camels	b) TV remotes
c) Putting cameras on airplanes	d) Putting sensors on satellites
- 5) \_\_\_\_\_is the first ESA program in Earth observation with the overall objectives to provide environment monitoring in particular in the microwave spectrum.
 

a) ERS	b) JERS
c) ALMAZ	d) SEASAT
- 6) \_\_\_\_\_collected more information about the oceans than had been acquired in the previous 100 years of shipboard research.
 

a) Shuttle-SIR B	b) ALMAZ
c) Sea Sat	d) JERS-1
- 7) PEM stands for\_\_\_\_\_
 

a) Payload Electronics Module	b) Payload elementary module
c) Pentium elementary Module	d) Payload elevation module
- 8) \_\_\_\_\_is typically mounted on a moving platform, such as an aircraft or spacecraft.
 

a) Radar	b) Synthetic aperture radar
c) Satellite	d) None of these

- 9) Synthetic Aperture Radar (SAR) has entered into a \_\_\_\_\_
  - a) Golden age
  - b) Dark Age
  - c) Silver age
  - d) None of this
- 10) The launch the first SAR satellite, Seasat, in \_\_\_\_\_ a huge development has been achieved in technology, techniques and information retrieval algorithms.
  - a) 1977
  - b) 1987
  - c) 1979
  - d) 1978
- 11) In synthetic aperture radar (SAR) imaging, are transmitted by \_\_\_\_\_ an antenna towards the earth surface.
  - a) Microwave pulses
  - b) Microwave signals
  - c) Backscattered signals
  - d) None of these
- 12) The range direction is \_\_\_\_\_ to flight track and \_\_\_\_\_ to azimuth direction.
  - a) Parallel, perpendicular
  - b) Vertical, horizontal
  - c) Both a & b
  - d) None of these
- 13) An aerial photograph may be assumed as \_\_\_\_\_.
  - a) Central projection
  - b) Parallel projection
  - c) Orthogonal projection
  - d) Poly conic projection
- 14) MODIS stands for \_\_\_\_\_.
  - a) Morphed-image Revolving Spectroradiometer
  - b) Multi-Image Resolution Spectroradiometer
  - c) Multiple Optical Resolution Spectroradiometer
  - d) Moderate Resolution imaging Spectroradiometer

- Q.2** What is multispectral remote sensing? Explain its applications? **14**
- Q.3** Define polarization? Explain the difference between HV and VH polarization. **14**
- Q.4** Explain the thermal remote sensing and Describe thermal Stefan's Boltzmann law. **14**
- Q.5 Write short note on.** **14**
  - a) ALMAZ
  - b) JERS-1
- Q.6 Describe in brief :** **14**
  - a) Terrain properties of RADAR
  - b) Active and passive remote sensing
- Q.7 Write an account on:** **14**
  - a) Synthetic aperture radar
  - b) SEASAT.



Seat  
No.Set **P**

**M.Sc. (Semester - III) (New) (CBCS) Examination Oct/Nov-2017**  
**Geoinformatics**  
**ADVANCED TECHNIQUES IN GIS**

Day & Date: Tuesday, 21-11-2017  
 Time: 02.30 PM to 05.00 PM

Max. Marks: 70

- Instructions:** 1) Attempt total five questions.  
 2) Questions No.1 Compulsory and should be answered in the question paper  
 3) Attempt any two questions from Question.No.2 to 4.  
 4) Attempt any two questions from Question No.5 to 7.  
 5) All question carry equal marks.  
 6) Draw neat and labeled diagrams wherever necessary.

**Q.1 Choose the correct alternative given in the bracket.****14**

- 1) The reflectance from a surface is called specular reflection if it follows \_\_\_\_\_  
 a) Snells law  
 b) Lambertans law  
 c) Planktons law  
 d) All of these
- 2) \_\_\_\_\_ is one of the following attributes is not associated with digital map.  
 a) Color  
 b) Symbology  
 c) Legends  
 d) North arrow
- 3) If electric permittivity and magnetic permeability of the medium are respectively  $\epsilon$  and  $\mu$  then the velocity ( $C_m$ ) of the electromagnetic wave in the medium is given by:  
 a)  $C_m = \frac{1}{\epsilon \mu}$   
 b)  $C_m = \frac{1}{\sqrt{8\mu}}$   
 c)  $C_m = \frac{5}{\sqrt{\epsilon\mu}}$   
 d) None of these
- 4) Which one of the following geometric errors of satellites sensors is random?  
 a) Scan skew  
 b) Panoramic distortion  
 c) Earth rotation  
 d) Altitude variation
- 5) For C band Synthetic Aperture Radar (SAR) with Doppler band width of 1300 Hz, the coherence length  $l_{coh}$  is \_\_\_\_\_  
 a) 130 km  
 b) 230 km  
 c) 330 km  
 d) 430 km
- 6) The infrared portion of EMR lies between \_\_\_\_\_  
 a)  $0.4 - 0.7 \mu m$   
 b)  $5 - 1 m$   
 c)  $0.7 - 1.3 \mu m$   
 d)  $0.7 - 14 \mu m$
- 7) \_\_\_\_\_ can be defined as any GIS that uses web technology to communicate between a server and a client.  
 a) Geoserver  
 b) Web GIS  
 c) Desktop GIS  
 d) Arc GIS

- 8) A \_\_\_\_\_is a standard protocol for serving (over the Internet) georeferenced map images which a map server generates using data from a GIS database.
- |                           |                        |
|---------------------------|------------------------|
| a) Web map Service        | b) Web Spatial Service |
| c) Online spatial service | d) Web mapping info    |
- 9) \_\_\_\_\_sensor is used for ocean?
- |        |         |
|--------|---------|
| a) OCM | b) SPOT |
| c) ETM | d) LISS |
- 10) Formula for NDVI\_\_\_\_\_
- |   |                              |
|---|------------------------------|
| a) $\text{NIR-R} / \text{NIR} + \text{R}$ | b) $\text{NIR} / \text{R}$   |
| c) $\text{VIR} / \text{R}$                | d) $\text{MIR} / \text{NIR}$ |
- 11) One type of digitizing error that results in an overextended Arc called as\_\_\_\_\_
- |              |               |
|--------------|---------------|
| a) Dangle    | b) Undershoot |
| c) Overshoot | d) Pseudo     |
- 12) Out of following which do not manipulate feature boundaries
- |           |          |
|-----------|----------|
| a) Clip   | b) Erase |
| c) Update | d) Union |
- 13) \_\_\_\_\_of the following is a GIS terminology?
- |                     |                        |
|---------------------|------------------------|
| a) Edge enhancement | b) Contrast stretoning |
| c) Digitizing       | d) All of the above    |
- 14) The standard non-topological data format used in Arc GIS is called as\_\_\_\_\_
- |         |                  |
|---------|------------------|
| a) .dwg | b) .shp          |
| c) .bmt | d) None of these |
- Q.2** Describe architecture of DSS. Add a note on Spatial DSS and Expert System **14**
- Q.3** Explain in detail Boolean logic operation for site suitability analysis. **14**
- Q.4** Write in detail the recent trends of GIS technology **14**
- Q.5 Write short note on.** **14**
- |                      |
|----------------------|
| a) Internet & GIS    |
| b) Web map services. |
- Q.6 Describe in brief :** **14**
- |                               |
|-------------------------------|
| a) Open Geospatial Consortium |
| b) Ranking method             |
- Q.7 Write an account on:** **14**
- |                        |
|------------------------|
| a) Surface analysis    |
| b) Spatial Clustering. |

<b>Seat No.</b>	
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Set **P**

**M.Sc. (Semester - III) (CBCS) Examination Oct/Nov-2017**  
**Geoinformatics**  
**SPATIAL ANALYSIS**

Day & Date: Thursday, 16-11-2017  
 Time: 02.30 PM to 05.00 PM

Max. Marks: 70

- Instructions:** 1) Answers any five questions.  
 2) All questions carry equal marks.  
 3) Question 1 is compulsory and should answer in the questions papers.  
 4) Answer any two essay questions from Q.2, 3 & 4.  
 5) Answer any two short notes questions from Q.5, 6 & 7.  
 6) Draw neat and labeled diagrams wherever necessary.

**Q.1 Choose the alternatives given below.****14**

- 1) If the elevation values are changing rapidly from place to place is called as \_\_\_\_\_.
- a) Smooth surface    b) Rough surface  
 c) Random    d) None of these
- 2) \_\_\_\_\_ is to determine the optimal path after visiting a specified set of links in the network.
- a) Optimal cyclic path    b) Fastest path  
 c) Optimal path    d) Source destination path
- 3) \_\_\_\_\_ method organizes the data into classes according to their attributes.
- a) Feature classification    b) Feature extraction  
 c) Feature manipulation    d) None of these
- 4) T matrix = \_\_\_\_\_.
- a)  $C_1 - C_2 + C_3$     b)  $C - C + C$   
 c)  $C_1 + C_2 + C_3$     d)  $C_1 - C_2 - C_3$
- 5) Number of point features occurring on the map means \_\_\_\_\_.
- a) Density    b) Frequency  
 c) NNI    d) Spatial dispersion
- 6) The \_\_\_\_\_ is based on the length of the route.
- a) Shortest path    b) Fastest path  
 c) Optimal path    d) Source destination path
- 7) \_\_\_\_\_ is the resolution of cartodem.
- a) 10 mt.    b) 20 mt.  
 c) 30 mt.    d) 40 mt.
- 8) \_\_\_\_\_ is the extension of Arc GIS.
- a) .dug    b) .shp  
 c) .img    d) None of these
- 9) \_\_\_\_\_ are used to communicate and convey overwhelmingly large amounts of information in an organized way.
- a) Maps    b) Path  
 c) Operations    d) Vector data

- 10) \_\_\_\_\_ is the open source GIS software.
- a) Arc GIS
  - b) ERDAS
  - c) ILWIS
  - d) QGIS
- 11) \_\_\_\_\_ is the one of most powerful features of a GIS is the ability to join tables based on common geographic location.
- a) Spatial join
  - b) Spatial buffer
  - c) Clip
  - d) Dissolve
- 12) IDW stands for \_\_\_\_\_.
- a) Inverse Distance Weight
  - b) Intense Distance Weight
  - c) Inverse Double Weight
  - d) Inverse Drought Weight
- 13) TIN stands for \_\_\_\_\_.
- a) Triangulation Irregular Network
  - b) Tangent Irregular network
  - c) Triangular Intense Network
  - d) Tradition intense Network
- 14) \_\_\_\_\_ approximates the surface with a series of non overlapping triangles.
- a) DEM
  - b) TIN
  - c) DIM
  - d) None of these

- Q.2** Define spatial analysis? Describe types of geodatabase? **14**
- Q.3** Describe single layer operations and multi layer operation? **14**
- Q.4** Describe Interpolation techniques. **14**
- Q.5** **Write short notes on:** **14**
- a) TIN
  - b) C Matrics
- Q.6** **Write briefly on the following.** **14**
- a) Krigging
  - b) Cost Surface Analysis.
- Q.7** **Write small account of:** **14**
- a) Types of Geographical entities.
  - b) Normative model.

Seat No.	
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**M.Sc. (Semester - IV) (Old) (CGPA) Examination Oct/Nov-2017  
Geoinformatics**

**APPLICATIONS OF REMOTE SENSING & GIS**

Day & Date: Wednesday, 22-11-2017  
Time: 02.30 PM to 05.00 PM

Max. Marks: 70

- Instructions:** 1) All questions carry equal marks.  
2) Q.1 is compulsory.  
3) Answer any two questions from Q.2, 3 & 4.  
4) Answer any two questions from Q.5, 6 & 7.  
5) Draw neat and labeled diagrams wherever necessary.

**Q.1 Choose the alternatives given below.**

**14**

- 1) Who modified the crop-combination method propounded by J. C. Weaver?
  - a) Doi
  - b) S. S. Bhatia
  - c) S. M. Rafiullah
  - d) Jasbir Singh
- 2) The Yarlung Zangbo River, in India is known as \_\_\_\_\_.
  - a) Ganga
  - b) Indus
  - c) Mahanandi
  - d) Brahmaputra
- 3) Which of the following soils is most suitable for the cultivation of cotton in India?
  - a) Red soil
  - b) Laterite soil
  - c) Alluvial soil
  - d) Regur soil
- 4) Landslides often occur in \_\_\_\_\_.
  - a) Desert Region
  - b) Tundra Region
  - c) Hilly Region
  - d) Forest soil
- 5) \_\_\_\_\_ is not a natural disaster.
  - a) Deforestation
  - b) Nuclear Explosion
  - c) Forest Fire
  - d) Lighting
- 6) The word Tsunami has been derived from \_\_\_\_\_.
  - a) Japanese
  - b) Sanskrit
  - c) French
  - d) Latin
- 7) NDMA stands for \_\_\_\_\_.
  - a) National District Management Authority
  - b) National Disaster Management Authority
  - c) National Disaster Manpower Authority
  - d) National District Manpower Authority
- 8) The term 'disaster is derived from which of the following language?
  - a) Greek
  - b) Latin
  - c) French
  - d) Arabic
- 9) NRCP stands for \_\_\_\_\_.
  - a) National River Conservation Project
  - b) National River Conservation Plan
  - c) National River Conversation Project
  - d) None of the above

- 10) In the final stage before meeting the seas and ocean, river breakup into various streams called as \_\_\_\_\_.  
 a) Tributaries b) Deltas  
 c) Estuaries d) Distributaries
- 11) Based on the Agro-climatic Zones, India is divided into \_\_\_\_\_ parts.  
 a) 10 b) 15  
 c) 20 d) 25
- 12) India has \_\_\_\_\_ Ecological Zones.  
 a) 5 b) 10  
 c) 15 d) 20
- 13) Which group does the black cotton soil of India belong?  
 a) Chernozem b) Laterite  
 c) Podzol d) Sierozem
- 14) The trembling of the earth's crust is known as \_\_\_\_\_.  
 a) Volcano b) Earthquake  
 c) Flood d) Cyclone

- Q.2** Describe application of remote sensing and geographical information system in watershed management. **14**
- Q.3** What is role of Geospatial Technology in agriculture development? **14**
- Q.4** Write a full note on case study related to geosciences and urban planning. **14**
- Q.5 Write short notes on:** **14**  
 a) Cartosat DEM  
 b) Human induced geological hazard
- Q.6 Write briefly on the following.** **14**  
 a) Soil type identification  
 b) Identification of drainage basin and river morphometry.
- Q.7 Discuss in brief.** **14**  
 a) Crop inventory  
 b) Land slide hazard mapping