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**M.Sc. I (Semester – I) (CBCS) Examination, 2015
GEOINFORMATICS (New) (Paper – I)
Introduction to Geography**

Day and Date : Monday, 16-11-2015
Time : 10.30 a.m. to 1.00 p.m.

Max. Marks : 70

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

1. Fill in the blanks with the correct answers :

14

- 1) That which is defined as the total reflectivity of any body is _____
 - a) Black body
 - b) Albedo
 - c) Solar constant
 - d) Radiation
- 2) Highest temperature is found in India at _____
 - a) Jaisalmer
 - b) Ajmer
 - c) Bikaner
 - d) Ganganagar
- 3) What is atmosphere ?
 - a) Composition of gases, vapor and particulates
 - b) Composition of dust particles only
 - c) Composition of gaseous particles only
 - d) Composition of water and winds
- 4) Which is the region of minimum biodiversity ?
 - a) Tropical
 - b) Temperate
 - c) Arctic
 - d) Polar



- 5) Which gas is used by green plants for photosynthesis ?
- a) Oxygen
 - b) Carbon dioxide
 - c) Hydrogen
 - d) Nitrogen
- 6) Which one of the following is a rabi crop ?
- a) Rice
 - b) Millets
 - c) Gram
 - d) Cotton
- 7) The 'slash and burn' agriculture is known as _____ in the North-East region in India.
- a) Jhumming
 - b) Kuruwa
 - c) Podu
 - d) Bewar
- 8) The area of transition between well-recognized urban land uses and the area devoted to agriculture is known as _____
- a) Rural – Urban Fringe
 - b) Urban Sprawl
 - c) Satellite Town
 - d) Green belt
- 9) Which one of the following types of economic activities dominate in all rural settlement ?
- a) Primary
 - b) Secondary
 - c) Tertiary
 - d) Quaternary
- 10) Regional planning is started in India _____
- a) 1950
 - b) 1951
 - c) 1956
 - d) 1961
- 11) In India who worked for the regional planning ?
- a) L.S. Bhatt
 - b) A.T.A. Larmanth
 - c) Sen Gupta
 - d) All of these
- 12) Transport systems model was prepared by _____
- a) E.L. Ullman
 - b) Carl O. Souer
 - c) Ritter
 - d) Weber
- 13) The volume of traffic on the transport links can be measured as _____
- a) Network
 - b) Flow
 - c) Economic distance
 - d) Distance
- 14) When time and distance increase, accessibility _____
- a) Decreases
 - b) Increases
 - c) Same
 - d) None of these



2. Explain the factors affecting the distribution of temperature of the world. **14**
 3. Define the term, hazard. Explain the drought condition in India. **14**
 4. Discuss with examples major types of agriculture in India. **14**
 5. Write short notes on : **14**
 - a) Cloud and its types
 - b) Manmade hazards.
 6. Write brief account on : **14**
 - a) Types of urban settlements
 - b) Regional planning.
 7. Enumerate the following : **14**
 - a) Ecosystem and its function
 - b) Concept of regional hierarchy with examples.
-



- 6) Find the odd one
A) Hade B) Heave C) Throw D) Limb
- 7) Quartz is
A) Strongly magnetic B) Non-magnetic
C) Weakly magnetic D) None of the above
- 8) Sandstone is classified under
A) Arenaceous B) Rudaceous
C) Argillaceous D) None of the above
- 9) Conglomerate and breccias differ in
A) Composition B) Sediment shape
C) Sediment size D) All of the above
- 10) The degree or intensity of metamorphism that has affected a rock, is called as
A) Zone of metamorphism
B) Facies of metamorphism
C) Grade of metamorphism
D) Type of metamorphism
- 11) Which of the following has a highest compressive strength ?
A) Granite B) Quartzite
C) Dunite D) Marble
- 12) Mark the factor that will NOT affect the stability of the dam
A) Groundwater B) Quality of water
C) Type of rock D) Altitude of beds
- 13) Gap between the two formation is called as _____
A) Stratification B) Gap
C) Lamination D) Unconformity
- 14) Amygdaloidal structures are
A) Primary structure
B) Intermediate structure
C) Secondary structure
D) None of the above



2. Explain with examples in detail about the formation of rocks in and on the earth. **14**
 3. Explain in detail about the structures and textures of sedimentary rocks. **14**
 4. Write a detail note on geological considerations of tunnel. **14**
 5. Explain the following : **14**
 - a) Silica and feldspar group with example.
 - b) Define unconformity and explain the different types of unconformity.
 6. Write a note on : **14**
 - a) Grade and textures of metamorphic rocks
 - b) Outcrop and geological map.
 7. Write a note on : **14**
 - a) Products of volcano
 - b) Engineering properties of rocks.
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**M.Sc. I (Semester – I) Examination, 2015
(New – CBCS)
GEOINFORMATICS (Paper – III)
Geomorphology**

Day and Date : Friday, 20-11-2015
Time : 10.30 a.m. to 1.00 p.m.

Max. Marks : 70

- N.B. :** 1) Answer **any five** questions.
2) **All** question carry **equal** marks.
3) Question **1** is **compulsory**.
4) Answer **any two** essay questions from **2, 3, 4**.
5) Answer **any two** short note questions from **5, 6, 7**.
6) Draw **neat** and labeled diagrams **wherever** necessary.

1. Fill in the blanks :

14

- 1) _____ is defined as the science of description of various forms of the earth surface.
(Geography, Geology, Geomorphology, Geoinformatics)
- 2) _____ approach to geomorphology that emphasis that shaping of landforms in response to various climatic condition.
(Physical, Geomorphic, Geological, Climatic)
- 3) _____ is defined as the mechanical fracturing of rock by natural agents at the surface of the earth.
(Change, Erosion, Rejuvenation, Weathering)
- 4) _____ are very weak rocks in humid climate.
(Igneous, Metamorphic, Sedimentary, Limestone)



- 5) Karst topography generally develop in _____ topography.
(arid, semi-arid, limestone, plain)
- 6) Cyclic concept first postulated in geology by Scottish geologist _____ -
in 1785.
(J. Hutton, W. Penk, Davis, Johnson)
- 7) The word erosion has been derived from a _____ word.
(Arabic, French, Latin, Roman)
- 8) Drainage _____ refers to the origin and development of streams through
time.
(pattern, system, shape, size)
- 9) Consequent streams are the _____ streams to be originated in a particular
region.
(first, second, third, fourth)
- 10) All the landmasses were united together in the form of one landmass which
Wegner named _____
(Panthalasa, Pangaea, Gondwanaland, Laurasia)
- 11) _____ is the motion of the earths continents over geological time.
(Continental drift, Plate tectonic, Geosynclines, Continental crust)
- 12) Plan is topographically ideal for _____ construction.
(Building, Dam, Road, Tunnel)
- 13) _____ geomorphology provides a strategic tool for informed decision making
in public policy development.
(Climatic, Structural, Applied, Planetary)
- 14) _____ are ridge like depositional features of glacial hills.
(Cirques, Drumlins, Horn, Moraines)



2. Explain fundamental concept of geomorphology with suitable examples. **14**
 3. What is drainage system ? Describe various type of drainage system with suitable diagrams. **14**
 4. What is weathering ? Explain mechanical weathering with examples. **14**
 5. Write short note on : **14**
 - 1) Soil formation.
 - 2) Disaster management
 6. Give small account on : **14**
 - 1) Geomorphology and town planning.
 - 2) Continental drift theory.
 7. Discuss in brief : **14**
 - 1) Classification of coast
 - 2) Depositional landforms of wind.
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M.Sc. – I (Semester – I) Examination, 2015
GEOINFORMATICS (New CBCS)
Paper – IV : Computer Application in Earth Science

Day and Date : Monday, 23-11-2015

Total Marks : 70

Time : 10.30 a.m. to 1.00 p.m

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

1. Fill in the blanks :

14

- 1) Every computer must have an _____
a) Adobe Photoshop
b) Internet Connectivity
c) Operating System
d) None of these
- 2) DVD means _____
a) Digital Versatile Disk
b) Diagonal Versatile Disk
c) Digital Volume Disk
d) None of these
- 3) Another name for software is _____
a) Procedure
b) Data
c) Programs
d) Information
- 4) Which of following is an output device ? _____
a) Barcode reader
b) Electronic Whiteboard
c) LCD Projection Panels
d) Gamepad



- 5) Which are the measuring unit in computer system ?
- a) Yottabyte
 - b) Exabyte
 - c) Zetabyte
 - d) All of above
- 6) Which of the following system allowing in person electronic meeting between individuals or groups located in different places ?
- a) E-mail
 - b) Videoconferencing Systems
 - c) Voice-mail Messaging
 - d) Fax Machines
- 7) Which of the following is the original purpose of SQL ?
- a) To specify the syntax and semantics of SQL data definition language
 - b) To specify the syntax and semantics of SQL manipulation language
 - c) To define the data structures
 - d) All of the above
- 8) _____ type of memory is a PEN drive.
- a) FLASH Memory
 - b) Catch Memory
 - c) Fall Memory
 - d) None of above
- 9) Which is not application software ? _____
- a) Windows NT
 - b) Page Maker
 - c) Win Word XP
 - d) Photoshop
- 10) Which of following is an both input-output device ? _____
- a) Touch Screen
 - b) Microphone
 - c) Joystick
 - d) Computer Output Microfilm
- 11) 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
- 12) _____ is the best description of Read-Only Memory (ROM).
- a) nonvolatile, used to 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



13) LCD monitor is also known as

- a) TFT b) CRT c) CFT d) VRT

14) An element in an electronic document that links to another document is called as _____

- a) Hyper links b) Heights
c) Mark text d) Heavy link

2. Explain in detail advantages of DBMS in Earth science. **14**
3. Describe in details the types of network. **14**
4. Explain in detail various application of computer in Geoinformatics. **14**
5. Write a note on : **14**
- i) Internet
 - ii) MS Office
6. Write discuss brief : **14**
- i) Operating Systems
 - ii) RDBMS concept
7. Write a small account on : **14**
- i) SQL
 - ii) Role of data base administrator.
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**M.Sc. – I (Semester – II) Examination, 2015
(New CGPA)
GEOINFORMATICS
Paper – I : Introduction to Remote Sensing**

Day and Date : Tuesday, 17-11-2015
Time : 10.30 a.m. to 1.00 p.m.

Max. Marks : 70

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

1. Fill in the blanks :

14

- 1) _____ is odd one from the others.
A) Emittance of Energy
B) Absorption of Energy
C) Transmission of Energy
D) Electro Magnetic Energy
- 2) Sensors, which sense natural radiations, either emitted or reflected from the earth, are called _____.
A) Passive sensors
B) Active sensors
C) Dead sensors
D) Live sensors
- 3) LIDAR is a _____ type of sensor.
A) Active
B) Live
C) Passive
D) Dead
- 4) After the energy has been scatted by or emitted from the target, we require _____ to collect and record the electromagnetic radiation.
A) Light
B) Sensor
C) High resolution image
D) Full conductivity



- 5) When the sensors work in the region of electromagnetic waves with frequencies between 10^9 and 10^{12} Hz, it is called _____
- A) Optical remote sensing
B) Aerial camera remote sensing
C) Microwave remote sensing
D) Ground-based remote sensing
- 6) Platform can be _____ Observation Platform.
- A) Ground-based
B) Space borne
C) Airborne
D) All the given
- 7) In Remote Sensing, there are _____ type of resolution.
- A) Two
B) Three
C) Four
D) Five
- 8) _____ is not a type resolution.
- A) Spectral Resolution
B) Spatial Resolution
C) Transmitted Resolution
D) Temporal Resolution
- 9) _____ is not a basic step of Image Processing (Digital Image Processing).
- A) Image balancing
B) Image correction/restoration
C) Image enhancing
D) Image classification
- 10) As per the principal characteristics of spectral signature, temporal variations diurnal and/or seasonal changes in _____
- A) Reflectance
B) Angular resolving power
C) Degree of polarization
D) Brightness
- 11) Match the given :
- | Mission | Year of Launch |
|-------------------|-----------------------|
| I) Oceansat 2 | i) 2014 |
| II) Resourcesat 2 | ii) 2012 |
| III) RISAT - 1 | iii) 2011 |
| | iv) 2009 |
- A) I-iii, II-i, III-iv
B) I-i, II-iii, III-ii
C) I-iv, II-i, III-ii
D) I-iv, II-iii, III-ii
- 12) The path followed by a satellite is referred to as its _____
- A) Platform
B) Roadmap
C) Orbit
D) Axis



- 13) The two main branches of aerial photography are those known as _____
aerial photography.
- A) Oblique and Vertical
 - B) Oblique and Parallel
 - C) Rectangular and Straight
 - D) Rectangular and Vertical
- 14) RADAR stands for _____
- A) Radio Detection and Ranging
 - B) Ray Detection Aerial Receiver
 - C) Radio Active Detection and Refection
 - D) Ray Absorbed Data and Ribbon
2. What is Resolution ? Explain the various types of Resolution. **14**
3. What is Sensor ? Explain any one type of sensor in detail. **14**
4. Enlist the various types of uses of Aerial Photography and explain any two in detail. **14**
5. Write notes on : **14**
- a) Camera
 - b) Platform
6. Describe in brief : **14**
- a) Electro Magnetic Radiation.
 - b) Stages of Remote Sensing.
7. Explain in short : **14**
- a) History of Aerial Photography.
 - b) Overlapping Stereo Photography.
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**M.Sc. – I (Semester – II) Examination, 2015
GEOINFORMATICS (Paper – II) (New CGPA)
Cartography and Map Analysis**

Day and Date : Thursday, 19-11-2015
Time : 10.30 a.m. to 1.00 p.m.

Max. Marks : 70

- Instructions:** 1) Answer **any five** questions.
2) **All** questions carry **equal** marks.
3) Question **1** is **compulsory** and should be answered in the question paper.
4) Answer **any two** essay questions from **2, 3, 4**.
5) Answer **any two** short note questions from **5, 6, 7**.
6) Draw neat and labeled diagrams **wherever** necessary.

I. Fill in the blanks :

14

- 1) _____ is used to prepare a maps of inaccessible areas in modern period.
A) Aerial Photograph B) Computer
C) Plane table surveying D) Triangular surveying
- 2) Conical projection represents _____
A) Whole globe B) A part of the globe
C) Only equator D) All of these
- 3) _____ of the following is large scale map.
A) Topographical map B) Atlas map
C) City map D) Wall map
- 4) _____ is India's well established data center for supplying of image data.
A) Department of Space, Bangalore
B) Indian Institute of Remote Sensing, Deharadun
C) National Remote Sensing Agency, Hyderabad
D) None of these



- 5) The dot method is most suited for showing _____
- A) Distribution of crops on the field
 - B) Distribution of population on the map
 - C) Distribution of mineral and means of communication
 - D) None of these
- 6) Topographical maps in India are prepared by _____
- A) Geological Survey of India
 - B) Survey of India
 - C) Indian Meteorological Department
 - D) Land Revenue Department
- 7) Which one of the following colors used to show the cultivated area in topographical maps of 1 : 50,000 scale ?
- A) Light green
 - B) Brown
 - C) Yellow
 - D) Red
- 8) A survey which is specifically concerned with landed property is known as _____
- A) Geodetic Survey
 - B) Thematic Survey
 - C) Cadastral Survey
 - D) Triangulation Survey
- 9) A map with a scale of 1 cm to 30 km is enlarged nine times in size. The R.F. of the new map will be _____
- A) 1 : 100,000
 - B) 1 : 1,000,000
 - C) 1 : 9000,000
 - D) 1 : 10,000,000
- 10) A representation on a plane surface of the features of the earth or part of the earth's surface, drawn to some specific scale is known as _____
- A) Projection
 - B) Map
 - C) Scale
 - D) None of these
- 11) _____ is used to show maximum information in a fixed place on a map.
- A) Map Projection
 - B) Map Scale
 - C) Signs and symbols
 - D) Direction
- 12) _____ authored book Fundamentals of Cartography.
- A) Keates
 - B) Ramesh
 - C) Rampal
 - D) Keith



- 13) The true North is also called _____
A) Absolute North B) Relative North
C) Geographic North D) Magnetic North
- 14) The science of constructing maps and charts, which includes the making of original survey, selection of suitable map projections and decisions of colors, layer and other visual representation is called _____
A) Photogrammetry B) Topography
C) Cartography D) Planimetry

- II. Explain nature and scope of Cartography. **14**
- III. What is Scale of Map ? Explain with the help of examples types of scales. **14**
- IV. Explain function of color and pattern in map design. **14**
- V. Write note on : **14**
A) Choice of map projection
B) Geographical coordinate system.
- VI. Explain in short : **14**
A) Symbolization
B) Geoids and Datum.
- VII. Describe in brief : **14**
A) Map referencing and indexing
B) Map design.
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**M.Sc. – I (Semester – II) Examination, 2015
GEOINFORMATICS (New CGPA)
Paper – III : Introduction of GIS and GPS**

Day and Date : Saturday, 21-11-2015

Max. Marks : 70

Time : 10.30 a.m. to 1.00 p.m.

- Instructions :**
- I) Answer **any five** questions.
 - II) **All** questions carry **equal** marks.
 - III) Question **1** is **compulsory** and should be answered in the question paper.
 - IV) Answer **any two** essay questions from **2, 3, 4**.
 - V) Answer **any two** short note questions from **5, 6, 7**.
 - VI) Draw **neat** and labeled diagrams **wherever** necessary.

I. Fill in the blanks with the appropriate choice :

14

- 1) By definition GIS must include
 - A) A method for data storage, retrieval and representation
 - B) A method for storing demographic information
 - C) A method for scanning maps to produce raster files
 - D) None of the above
- 2) _____ is the Largest Scale.
 - A) 1 : 24000 B) 1 : 100000 C) 1 : 10000000 D) None of the above
- 3) WGS84 stands for
 - A) World Geographic System 84 B) World Geo-cord System 84
 - C) World Geodatic System 84 D) None of the above
- 4) Layers or levels can be used to
 - A) Group related geographic features by function
 - B) Combine non-spatial and attribute information
 - C) Highlight logical relationships among graphic features
 - D) None of the above



- 5) Father of GIS
- A) Roger Tamlison B) John France
C) Roger Gonce D) Roger Tamgo
- 6) Following is the open source software for GIS
- A) GRASS B) Q-GIS
C) ESRI ArcGIS D) Both A) and B)
- 7) GIS can be used in the following departments
- A) Election Commission B) Crime Department
C) Health Department D) All of the above
- 8) Following are the components of GIS
- A) Methods B) Hardware
C) Both A) and B) D) None of the above
- 9) A raster data structure that used square blocks to represents a region called as
- A) Block code B) Ran length code
C) Chain code D) None of the above
- 10) Space segment of GPS involves _____ number satellites.
- A) 32 B) 33 C) 42 D) 43
- 11) GIS involves
- A) Linking spatial and non-spatial data
B) Map making and generating output
C) Both A) and B)
D) None of the above
- 12) Digitization error may create
- A) Overshoot B) Strim C) Starch D) Line strip
- 13) Which of the following is a GIS terminology ?
- A) Edge detection B) Contrast stretching
C) Digitization D) All of the above
- 14) DGPS means
- A) Differential Global Positioning System
B) Different Global Positioning System
C) Differential Geodatic Position System
D) None of the above



- II. Applications of GIS in the field of forestry and land management. **14**
 - III. Explain the concept of Arc, Node and vertices and their applications. **14**
 - IV. Explain the steps involved in DEM. Discuss the use of DEM. **14**
 - V. Describe in brief : **14**
 - a) Nature and sources of errors in GPS Signal .
 - b) Trilateration in GPS.
 - VI. Enumerate the following : **14**
 - a) Components of GPS.
 - b) History of GIS.
 - VII. Write short note on : **14**
 - a) Components of GIS
 - b) Vector data model.
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**M.Sc. – I (Semester – II) Examination, 2015
GEOINFORMATICS (Paper – IV) (CGPA New)
Digital Image Processing**

Day and Date : Tuesday, 24-11-2015

Total Marks : 70

Time : 10.30 a.m. to 1.00 p.m.

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

1. Fill in the blanks :

14

- 1) _____ Classifiers do not utilize training data as the basis for classification.
a) Unsupervised b) Supervised c) Error Matrix d) None of these
- 2) _____ is a widely used decision rule based on simple Boolean “and/or” logic.
a) Maximum Likelihood Classifier
b) Minimum Distance to Means Classifier
c) Parallelepiped Classifier Algorithm
d) None of these
- 3) _____ errors correspond to non diagonal column elements.
a) Commission b) Omission c) Kappa d) All of the above
- 4) Error matrix known as
a) Kappa coefficient b) RMS
c) Contingency table d) All of the above



- 5) _____ method uses a linear expression to model the relationship between input and output values.
a) Non-linear b) Rectification c) Linear d) Noise correction
- 6) Distortions whose effects are systematic in nature and are constant and can be predicted in advance are called
a) Non-systematic distortion b) Radiometric Correction
c) Systematic distortion d) Noise correction
- 7) The transformation of a remotely sensed image so that it has a scale and projections of a map is called
a) Geometric Corrections b) Radiometric Correction
c) Atmospheric Correction d) Noise correction
- 8) _____ interpolation simply chooses the actual pixel that has its centre nearest the point located in the image.
a) Nearest neighbour b) Bilinear
c) Cubic convolution d) None of these
- 9) _____ enhancement techniques expand the range of brightness values in an image.
a) Contrast b) Histogram equalization
c) Density Slicing d) None of these
- 10) _____ is a pictorial representation of an object or a scene.
a) Image b) Photo c) Data d) None of these
- 11) _____ format maintains all data for a single band covering entire scene as one file.
a) BIL b) BSQ c) BIP d) Geo-TIFF
- 12) _____ operations aim to correct distorted or degraded image data to create a faithful representation of the original scene.
a) Image Enhancement b) Image Rectification
c) Image Classification d) None of these



- 13) _____ is displayed by placing the infrared, red, green in the red, green and blue frame buffer memory.
- a) FCC
 - b) Standard FCC
 - c) Colour Composition
 - d) None of these
- 14) _____ errors are caused by detector imbalance and atmospheric deficiencies.
- a) Radiometric
 - b) Geometric
 - c) FCC
 - d) None of these

2. What is digital image ? Explain digital image data formats. **14**
3. What is image enhancement ? Explain the contrast enhancement. **14**
4. What is image classification ? Explain the supervised classification. **14**
5. Write a short note on : **14**
- a) Radiometric correction
 - b) Density slicing.
6. Write in brief on : **14**
- a) Error matrix
 - b) Band Combination.
7. Write small account on : **14**
- a) Histogram equalization
 - b) Edge Enhancement.
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Seat No.	
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M.Sc. – II (Semester – III) (New-CGPA) Examination, 2015
GEOINFORMATICS (Paper – I)
Spatial Analysis

Day and Date : Monday, 16-11-2015
Time : 2.30 p.m. to 5.00 p.m.

Total Marks : 70

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

1. Fill in the blanks with appropriate choice : 14

- 1) _____ deals with the spatial distribution of surface information in terms of a three dimensional structure.
a) Network Analysis b) Spatial Analysis
c) Site Suitability Analysis d) Surface Analysis
- 2) _____ is a high level computational language used for performing cartographic spatial analysis using raster data.
a) C b) CPP
c) Map algebra d) All of above
- 3) C2 matrix = _____
a) C1 × C1 b) C2 × C2 c) C3 × C3 d) C4 × C4
- 4) _____ operations are procedures, which correspond to queries and alterations of data that operates on a single data layer.
a) Multiple Layer b) Single Layer
c) Overlay d) None of these



- 5) _____ functions that works on every single cell.
- a) Focal
 - b) Global
 - c) Local
 - d) Zonal
- 6) MAT stands for _____
- a) Medial Axis Transformation
 - b) Mean Axis Transition
 - c) Mode Axis Transformation
 - d) Median Axis Transmitter
- 7) _____ requires the processing of attribute data exclusive of spatial information.
- a) Spatial query
 - b) Attribute query
 - c) GPS query
 - d) Surface query
- 8) _____ involves the construction explanatory and predictive models for statistical testing.
- a) Numerical modeling
 - b) Spatial modeling
 - c) Band modeling
 - d) None of these
- 9) Smaller NNI value represented by _____
- a) Scattered Pattern
 - b) Clustered pattern
 - c) Random Pattern
 - d) None of these
- 10) _____ approximates the surface with a series of non overlapping triangles.
- a) DEM
 - b) TIN
 - c) DTM
 - d) None of these
- 11) The _____ is based on the time it takes to traverse each route.
- a) Shortest Path
 - b) Fastest Path
 - c) Optimal Path
 - d) Source Destination Path
- 12) DEM stands for _____
- a) Digital Elevation Meter
 - b) Distance Elevation Model
 - c) Digital Elevation Model
 - d) Distance Elevation Meter
- 13) Maximum number of link required for complete one circuit _____
- a) 2
 - b) 3
 - c) 4
 - d) 5
- 14) _____ is following not Boolean logic operation.
- a) AND
 - b) OR
 - c) +
 - d) NOT



2. What is point pattern analysis ? Explain the types of point pattern. **14**
 3. What is meant by surface analysis ? Explain the details of TIN. **14**
 4. Describe the overview tool of spatial analysis. **14**
 5. Write a short note on : **14**
 - a) Union and Intersection
 - b) DEM.
 6. Write in brief on : **14**
 - a) Explain Interpolation method.
 - b) Global and focal functions.
 7. Write small account on : **14**
 - a) C Matrices
 - b) Gamma index.
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Seat No.	
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**M.Sc. – II (Semester – III) Examination, 2015
GEOINFORMATICS (New– CGPA)
Advanced Techniques in Remote Sensing (Paper — II)**

Day and Date : Wednesday, 18-11-2015

Total Marks : 70

Time : 2.30 p.m. to 5.00 p.m.

- Instructions:**
- 1) Answer **any Five** questions.
 - 2) **All** questions carry **equal** marks.
 - 3) Question 1 is **compulsory**.
 - 4) Answer any **two** essay questions from **2, 3, 4**.
 - 5) Answer any **two** short note questions from **5, 6, 7**.
 - 6) Draw **neat and labelled** diagrams **wherever** necessary.

1. Fill in the blanks with appropriate choice :

14

- 1) Microwave portion of the spectrum includes wavelength within the approximate range of _____
 - a) 2 mm to 5 m
 - b) 2.5 mm to 4 m
 - c) 5 mm to 7 m
 - d) 1 mm to 1 m
- 2) Energy reflected from the terrain to the radar antenna is called _____
 - a) RADAR return
 - b) LIDAR return
 - c) SONAR return
 - d) All of these
- 3) _____ is a technique that is useful for the compression and classification of data.
 - a) PCA
 - b) IHS
 - c) Supervised
 - d) Unsupervised



- 4) SAR stands for _____
- a) Signal aperture radar
 - b) Synthetic aperture radar
 - c) Sound aperture radar
 - d) Systematic aperture radar
- 5) An imaging device consisting of a fixed linear array of many sensors which is swept across an area by the motion of the platform is termed as _____
- a) Electro-optical scanner
 - b) Pushbroom scanner
 - c) Mechanical scanner
 - d) Stereo-scanner
- 6) In radar imaging, the direction of orientation in which the electrical field vector of electromagnetic radiation vibrates is called _____
- a) Foreshortening
 - b) Layover
 - c) Speckle
 - d) Polarization
- 7) Electromagnetic radiation _____.
- a) produces a time varying magnetic field and vice versa
 - b) consists of magnetic and electric fields
 - c) is capable to travel across space
 - d) once generated, remains self-propagating
 - e) All of these
- 8) Satellites travelling at the angular velocity at which the earth rotates; as a result, they remain above the same point on earth at all times is a _____
- a) Polar Orbiting Satellite
 - b) GPS satellite
 - c) Geo-stationary satellite
 - d) High resolution satellite
- 9) The arrangement of terrain features which provides attributes : the shape, size and texture of objects, is called _____
- a) Spectral variation
 - b) Spatial variation
 - c) Temporal variation
 - d) Terrain variations



10) _____ is the process in which electromagnetic energy is converted in an object or medium into other forms of energy or causing chemical reaction.

- a) Absorption b) Radiation c) Reflectance d) Diffusion

11) An aerial photograph may be assumed as _____.

- a) Central projection b) Parallel projection
c) Orthogonal projection d) Polyconic projection

12) From space borne platforms, the _____ is mainly used to measure the ocean surface wind speed and direction.

- a) Scatterometer b) Radiometer
c) Thermometer d) Micrometer

13) MODIS stands for _____.

- a) Morphed-image Revolving Spectroradiometer
b) Multi-Image Resolution Spectroradiometer
c) Multiple Optical Resolution Spectroradiometer
d) Moderate Resolution imaging Spectroradiometer

14) A two or three dimensional graph in which observations made in different bands are plotted against each other is called _____.

- a) Histogram b) Feature space plot
c) Pie diagram d) Scatterplot

2. Digital frame cameras based on area arrays and linear arrays. **14**

3. Describe the film types, photographic resolution and radiometric characters of aerial photographs. **14**



- 4. Explain system and terrain properties of RADAR. **14**

 - 5. Write short note on : **14**
 - a) Landsat ETM+
 - b) History of active microwave remote sensing.

 - 6. Give a brief account on : **14**
 - a) Planks radiation law.
 - b) Characteristic of SWIR.

 - 7. Write brief on : **14**
 - a) Active and passive remote sensing.
 - b) SEASAT.
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**M.Sc. – II (Semester – III) Examination, 2015
GEOINFORMATICS (New - CGPA)
Advanced Techniques in GIS (Paper – III)**

Day and Date : Friday, 20-11-2015

Total Marks : 70

Time : 2.30 p.m. to 5.00 p.m.

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

1. Fill in the blanks :

14

- 1) _____ is the first stage of decision making which involves identifying a decision problem.
A) Choice B) Design C) Intelligence D) Ranking
- 2) Boolean logic operation is
A) AND B) OR C) XOR D) All of the above
- 3) Extraction of interesting pattern or knowledge from huge amount of data known as
A) Data analysis B) Data mining
C) Data generation D) Data process
- 4) AHP stands for
A) Analytical Hierarchy Process B) Analysis High Program
C) Analytic High Parameters D) All of the above
- 5) _____ is considered as an open sources software.
A) ArcGIS B) ERDAS C) QGIS D) AutoCAD
- 6) _____ problem involves a set of alternative that are evaluated on the basis of conflicting criteria.
A) ANN B) AHP C) MCDM D) All of the above



- 7) _____ is a collection of element or objects without a well defined boundary.
A) Fuzzy B) ANN C) Design D) AHP
- 8) Evaluation criterion maps are also referred to as
A) Attribute map B) Vector map C) Thematic map D) Raster map
- 9) Indian GPS system always follow _____ datum.
A) Clark 1866 B) WGS 84 C) WRS 80 D) None of these
- 10) _____ is a standard for judgement or rule to test desirability of alternative decision.
A) Value B) Constraint C) Criterion D) None of the above
- 11) DSS stands for
A) Department of Sciences and space
B) Decision Support System
C) Both A) and B)
D) None of these
- 12) Which is best open source software for Decision Support System ?
A) Expert choice B) Oracle C) ERDAS D) Surfer
- 13) _____ is proposed to be Indian navigation system equivalent to GPS.
A) IRNSS B) GNSS C) IRCC D) All of the above
- 14) Artificial Neural Network development is based on
A) Historical B) Political C) Biological D) Cultural
2. Explain in detail the web GIS. **14**
3. Write details recent trend in GIS and remote sensing with example. **14**
4. Write the important of multi-criteria decision analysis for geospatial sciences. **14**
5. Write short note on : **14**
a) Internet GIS
b) Give list of open sources software
6. Discuss briefly on : **14**
a) Cloud computing.
b) Data mining
7. Write small account on : **14**
a) Data into information
b) Artificial Neural Network.
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Seat No.	
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M.Sc. – II (Semester – III) (New-CGPA) Examination, 2015
GEO-INFORMATICS (Paper – IV)
Introduction to Statistical Methods

Day and Date : Monday, 23-11-2015
Time : 2.30 p.m. to 5.00 p.m.

Total Marks : 70

- Instructions :** 1) Answer **any five** questions.
2) **All** questions carry **equal** marks.
3) Question **1** is **compulsory**.
4) Answer **any two** essay question from **2, 3, 4**.
5) Answer **any two** short note questions from **5, 6, 7**.
6) Draw **neat and labelled** diagrams **wherever** necessary.

1. Fill in the blanks :

14

- 1) The fundamental statistical indicators are _____
 - A) Mean and standard deviation
 - B) Median and mode
 - C) Variance and mode
 - D) Median and variance
- 2) The correlation coefficient values lie between
 - A) 0 to 1
 - B) 0 to -1
 - C) -1 to 1
 - D) 1 – 10
- 3) The correlation between two variables is called as _____
 - A) Multiple correlation
 - B) Partial correlation
 - C) Total correlation
 - D) Simple correlation
- 4) Standard deviation is _____
 - A) Is the square root of variance
 - B) Is measured using the unit of the data
 - C) Is measured using squared unit of the variable
 - D) Has values generally comparable with the single value



- 5) Variables whose values can be expressed numerically are called as
- A) Quantitative Variables
 - B) Qualitative Variables
 - C) Absolute Variables
 - D) Continuous Variables
- 6) The coefficient of correlation is computed to be -0.95 means that
- A) The relation between two variables is weak
 - B) The relation between two variables is strong and positive
 - C) The relation between two variables is strong but negative
 - D) The correlation coefficient cannot have this value
- 7) Most frequently occurring number in a set of values is called as _____
- A) Mean
 - B) Mode
 - C) Median
 - D) Range
- 8) Find out the range from given data : 19, 29, 40, 29, 27, 32, 32, 32, 36, 37, 21.
- A) 32
 - B) 40
 - C) 37
 - D) 21
- 9) Census reports used as a source of data _____
- A) Primary
 - B) Raw data
 - C) Secondary
 - D) None
- 10) The sum of the deviations about the mean is always _____
- A) Range
 - B) Zero
 - C) Positive
 - D) Negative
- 11) Chi square value is zero when _____
- A) Expected frequency is lesser than observed frequency
 - B) Expected frequency is equal to the observed frequency
 - C) Expected frequency is double that of the observed frequency
 - D) Expected frequency is greater than observed frequency



- 12) To determine variation in wing length of butterfly from five different places _____ would be the best statistical test.
- A) F test
 - B) Students t test
 - C) Regression analysis
 - D) Chi square test
- 13) _____ does the shape of the *t* distribution changes as the sample size increases.
- A) It becomes broader
 - B) It becomes skewed
 - C) It becomes flatter
 - D) It becomes more normal looking
- 14) The median of a series of numerical values is _____
- A) Equal to the average
 - B) A graph or hart
 - C) A number
 - D) A frequency table

2. Find the standard deviation for the following data on the age of patient suffering from pulmonary disease. 14

Age in years	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50	50 – 60	60 – 70
No. of patients	6	14	10	8	1	3	8

Write a brief note on merits, demerits and uses of standard deviation.

3. What are different types of correlation ? Calculate the correlation coefficient between x and y from the following data : 14

(x)	5	9	13	17	21
(y)	12	20	25	33	35

4. Write a brief note on the measures of central tendency. Calculate the Arithmetic mean of the number of florets on sunflower as given below. 14

Class Interval	10 – 20	20 – 30	30 – 40	40 – 50	50 – 60	60 – 70	70 – 80	80 – 90	90 – 100
Frequency	2	7	17	29	29	10	3	2	1



5. Write short note on : 14
- A) Hypothesis testing and its significance.
- B) Differentiate between Dispersion and Skewness with suitable example.

6. Enumerate the following : 14
- A) Types of data.
- B) A tobacco company claims that there is no relationship between smoking and lung ailments. To investigate the claims random sample of 300 males in the range group of 40 to 50 is given medical test. The observed sample results are tabulated below. On the basis of given information, can it be calculated that the smoking and lung ailment are independent ?
(At 5% level of significance the value of $X^2 = 3.841$ for 1 d.f.)

	Lung ailment	No Lung ailment	Total
Smokers	75	105	180
Non Smokers	25	95	120
Total	100	200	300

7. Explain briefly : 14
- A) Absolute and relative measures of dispersion.
- B) Explain the concept of probability and theorems associated with it.
-