Seat
No.

M.Sc. – I (Semester – II) Examination, 2014
GEOINFORMATICS (Paper – I)
Introduction to Remote Sensing

Day and Date : Tuesday, 22-4-2014   Total Marks : 70
Time : 11.00 a.m. to 2.00 p.m.

Instructions : 1) Answer **five** questions.
 2) **All** questions carry **equal** marks.
 3) Question **I** is **compulsory**.
 4) Answer **any two** questions from question numbers **II, III**
  and **IV**.
 5) Answer **any two** questions from question numbers **V, VI**
  and **VII**.
 6) Draw **neat** and labelled diagrams **wherever** necessary.

I. Fill in the blanks :   **14**

 1) In electromagnetic spectrum visible range starts from _____ nanometres.

  a) 400   b) 40   c) 4   d) 0.4

 2) DN values in image pixel represents _____

  a) Scattering   b) Atmospheric window
  c) Spatial resolution   d) Reflectance

 3) Most of the Earth observation satellites pass an equator between 10.00 to
  11.00 a.m. because of _____

  a) Sun azimuth

  b) Time taken to complete one orbit

  c) Sun elevation angle

  d) Look angle

 4) LIDAR sensor is used to _____

  a) Land observation

  b) Ocean monitoring

  c) Distance and altitude measurement

  d) Navigation

5) Earth observation satellites are mainly having _____ sensors.

a) Active sensor

b) Passive sensor

c) Ground based sensors

d) Microwave radiometer

6) An altitude of Sun synchronous satellite is _____ kilometres.

a) 700-900

b) 1000

c) 2000

d) 6000

7) IRS series satellites are _____ satellites.

a) Israel

b) Japanese

c) Indian

d) Indonesian

8) Which of the following factor plays important role in the determination of photo scale ?

a) Focal length

b) Shadow

c) Displacement

d) Type of camera

9) An example of non-imaging active microwave sensor is _____

a) Radiometer

b) Radar altimetry

c) Light Detection and Ranging

d) SAR

10) Normally an overlap in aerial photographs is required to obtain _____

a) Three dimension

b) Clear photo

c) Scale

d) To remove displacement in an aerial photo

11) Mie scattering occurs when the particle size is _____

a) > 10 micrometre

b) 0.1 to 10 micrometre

c) 5 micrometre

d) < 1 micrometre

12) _____ absorbs thermal radiation.

a) Ozone

b) Water vapour

c) Dust particles

d) CO_2

13) _____ is the ratio of reflected energy to incident energy.

   a) Spectral reflectance   b) Absorbance

   c) Emission   d) Scattering

14) For a black body, at _____° K peak emission occurs at wavelength of 10 micrometre.

   a) 300   b) 800   c) 6000   d) 8000

II. Describe Electromagnetic spectrum.   **14**

III. Explain different types of scattering and their effects.   **14**

IV. What is flight plan ?   **14**

V. Write notes on :   **14**

   a) Geometry of aerial photo

   b) Scale of aerial photo.

VI. Explain in short :   **14**

   a) Stages in remote sensing

   b) Laws of radiation.

VII. Describe in brief :   **14**

   a) Types of remote sensing

   b) Aerial photo interpretation.

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Seat
No.

M.Sc. (Part – II) (Semester – IV) Examination, 2014
GEOINFORMATICS (Paper – I)
Information Technology and Management

Day and Date : Tuesday, 22-4-2014   Max. Marks : 70
Time : 3.00 p.m. to 6.00 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) Draw **neat** and labelled diagrams **wherever** necessary.
     6) Answer **any two** short note questions from **5, 6, 7**.

1. Fill in the blanks :   **14**

   1) Basic, C++ and Java are examples of _____

     a) Programming data   b) Programming device

     c) Programming language   d) All of the above

   2) World Wide Web is accessed through _____ software.

     a) Surfer   b) Browser

     c) Dot Net   d) OS

   3) The Network connecting all the computers in an organisation is called _____

     a) Intranet   b) Internet

     c) Ethernet   d) All of the above

   4) LAN is the abbreviation of _____

     a) Local Area Navigation   b) Location Area Network

     c) Local Area Network   d) Location Area Navigation

   5) CISCO certifications are related to _____

     a) Programming   b) Data management

     c) Communication   d) GIS mapping

6) National Task Force on IT and software development was formulated in the year _____
   - a) 1992
   - b) 1998
   - c) 2000
   - d) 2001

7) SMART in IT Management stands for _____ , Moral, accountable, responsible and transparent governance.
   - a) Super
   - b) Secured
   - c) Secret
   - d) Simple

8) Banking is a typical example of _____
   - a) MIS
   - b) GIS
   - c) DSS
   - d) TPS

9) INTERNIST is a _____ tool.
   - a) Internet protocol
   - b) GIS
   - c) Mineral exploration
   - d) Medical diagnosis

10) The fundamental components of a DSS architecture are the database, the _____ and the user interface.
   - a) Algorithm
   - b) Attribute
   - c) Model
   - d) Software

11) Cost is a _____ management DSS software.
   - a) Drought
   - b) Forest
   - c) Railway
   - d) None of the above

12) JPEG format is the extention used for _____ files.
   - a) Picture
   - b) Text
   - c) Colour
   - d) Font

13) Online tax accounting for income tax was started by RBI in the year _____
   - a) 2002
   - b) 2004
   - c) 2006
   - d) 2003

14) Office automation system is a part of _____
   - a) TPS
   - b) EIS
   - c) MIS
   - d) DSS

2. Discuss the various types of informations systems. **14**

3. Discuss the main facets of Information Resource Management. **14**

4. Discuss briefly the impact of information technology on societal development. **14**

5. Write short note on : **14**
   a) E-library
   b) Strategic Management.

6. Write briefly about : **14**
   a) E-Governance
   b) Development of information technology in India.

7. Enumerate the following : **14**
   a) Components of Information Technology.
   b) Types of computer networks.

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Seat No.

M.Sc. – II (Semester – IV) Examination, 2014
GEOINFORMATICS (Paper – II)
Application of Remote Sensing and GIS (Part – 1)

Day and Date : Thursday, 24-4-2014   Max Marks : 70
Time : 3.00 p.m. to 6.00 p.m.

N.B. : *1) Answer **any five** questions.*
*2) **All** question carry **equal** marks.*
*3) Question **I** is **compulsory**.*
*4) Draw **neat** and labeled diagram **wherever** necessary.*
*5) Answer **any two** essay questions from **II, III** and **IV**.*
*6) Answer **any two** short note questions from **V, VI** and **VII**.*

I. Fill in the blanks :   **14**

1) NDVI measure of vegation _____

   A) Temperature   B) Greenness   C) Growth   D) All of the above

2) Which satellite sensor give a tree height of up to +/– 15 cm ?

   A) SONAR   B) LIDAR   C) PAN   D) All of the above

3) Water absorb band _____

   A) X-ray   B) Visible   C) Infrared   D) Radiowave

4) _____ color indicate agriculture in FCC image.

   A) Blue   B) Green   C) Red   D) Yellow

5) _____ data got free of cost through internet.

   A) Land sat   B) Resource sat

   C) SPOT   D) Cartosat

6) If reflectance of two crops occur same. How to discriminate using _____ resolution ?

   A) Spatial   B) Spectral   C) Rediometric   D) Temporal

7) Formula of NDVI indices

   A) R/NIR   B) NIR – R/NIR + R

   C) VIR/R   D) SWIR/R

8) _____ band is use for geomorphology and Geological feature mapping and monitoring.

    A) Visible   B) Thermal   C) Microwave   D) Radiowave

9) _____ band is thermal in Land sat – 7, ETM + data sat.

    A) One number   B) Two number C) Six number   D) Seven number

10) _____ spatial resolution in IRS-LISS-I data.

    A) 23.5 m   B) 72 m   C) 36 m   D) 5 m

11) Which is following water parameter measure using remote sensing ?

    A) TDS   B) TSS   C) Color   D) Smell

12) Crop yield is influenced by a larger number of _____ factors.

    A) Biotic   B) Abiotic   C) Natural   D) Manmade

13) IRS LISS-III data support preparation of _____ scale map.

    A) 1 : 2,50,000   B) 1 : 1,00,000 C) 1 : 50,000   D) All of the above

14) Microwave sensor is also used especially during _____ in crop mapping.

    A) Summer season   B) Winter season

    C) Rainy season   D) All of the above

II. Why land sat data useful Geomorphology and Geology studies ? Give the one case study. **14**

III. Explain the GIS and remote sensing application for soil erosion assessment. Give in brief one case study. **14**

IV. What are the of remote sensing for agriculture resource assessment ? **14**

V. Write short on : **14**
    A) Landslide zonation mapping
    B) Watershed mapping.

VI. Write small account on : **14**
    A) Crop Acerayc and production estimation

    B) Soil type identification.

VII. Write brief on : **14**
    A) Spectral characteristic of land ore/land cover
    B) Water resource mapping.

_____

Seat No.

M.Sc. II (Semester – IV) Examination, 2014
GEOINFORMATICS (Paper – III)
Applications of Remote Sensing and GIS (Part – II)

Day and Date: Saturday, 26-4-2014　　　　　　　　　　　Total Marks : 70
Time: 3.00 p.m. to 6.00 p.m.

N.B. :　1) Answer **any five** question.
　　　　2) **All** questions carry **equal** marks.
　　　　3) Question **one** is **compulsory**.
　　　　4) Draw **neat** and labelled diagram **wherever** necessary.

I. Fill in the blanks :

1) SST means
　　A) Sea shallow temperature　　　B) Sea surface temperature
　　C) Shallow surface temperature　　D) None of these

2) _____ are used to measure sea surface temperature.
　　A) GOES　　　　B) NOAA　　　　C) MOD15　　　　D) All of the above

3) _____ beam SONAR provides two kind of data bathymetrics and acoustic back scatter.
　　A) Multiple　　　B) Boom　　　C) Single　　　D) Middle

4) _____ spectral range mostly used in forest cover identification.
　　A) Optical　　　B) Thermal　　　C) Microwave　　　D) X-ray

5) Which sensor data is useful for potential fishing zone management ?
　　A) TM　　　　B) LISS　　　　C) ETM +　　　　D) QCM

6) _____ fine spatial resolution in IRS data.
　　A) LISS-I　　　B) LISS-II　　　C) LISS-III　　　D) LISS-IV

7) Which is following band useful for the measurement of urban heat ?
　　A) Visible　　　B) Microwave　　　C) Thermal　　　D) Infrared

8) _____ % area covered for the forest in India.
　　A) 20%　　　B) 35%　　　C) 25%　　　D) 50%

P.T.O.

9) _____ is data best for the urban mapping and management.

   A) Quick bird   B) Land sat   C) IRS-P6   D) All of the above

10) _____ is spatial resolution in IRS-LISS IV.

   A) 5 m   B) 72 m   C) 36 m   D) 23 m

11) Flood monitoring required higher resolution of

   A) Spectral   B) Spatial   C) Temporal   D) Radiometric

12) Which is not visual interpretation key ?

   A) Association   B) Hue   C) Pattern   D) Shallow

13) When was the forest cover of India mapped for the first time by NRSA ?

   A) 1983   B) 1970   C) 1999   D) 2000

14) Formula of NDVI

   A) $NIR - R$ B) $NIR - R / NIR + VIR$

   C) $NIR + SWIR$ D) $NIR - R/NIR + R$

II. Explain the details application GIS and remote sensing in Forest Resource Management with one case study. **14**

III. Write role of GIS in urban infrasture planning and management. **14**

IV. Describe application of geospatial technology in ocean and coastal zone management. **14**

V. Write note on : **14**

   A) Site selection for waste disposal.

   B) Forest fire mapping.

VI. Write brief on : **14**

   A) Geological hazard.

   B) Potential fishing zone mapping.

VII. Write small account : **14**

   A) Cadastral mapping.

   B) Urban mapping.

_____

Seat No.

M.Sc. (Semester – II) Examination, 2014
GEOINFORMATICS (Paper – II)
Cartography and Map Analysis

Day and Date : Thursday, 24-4-2014   Max. Marks : 70
Time : 11.00 a.m. to 2.00 p.m.

Instructions : 1) Answer **five** questions.
2) **All** questions carry **equal** marks.
3) Question **1** is **compulsory**.
4) **Draw** neat and labeled diagram **wherever** necessary.

I. Fill in the blanks :   **14**

1) _____ colour shown road in survey of India Topo sheet.

   A) Brown   B) Red   C) Green   D) Gray

2) _____ is official list of property owners and their land holding
   with marking boundary.

   A) Topo map   B) Thematic map
   C) Cadastral map   D) Elevation map

3) WGS stand for _____

   A) World Geodetic System   B) World Group Survey
   C) World General Survey   D) All of the above

4) The imaginary network of parallels and meridians of the earth is called as

   A) Equator   B) Graticule   C) Scale   D) Projection

5) What type of a symbol is a contour ?

   A) Line qualitative   B) Point quantitative
   C) Area qualitative   D) None of these

6) The Dot method is most suited for showing

   A) Rainfall   B) Temperature
   C) Population   D) Crops

P.T.O.

7) Topographic maps are _____

   A) Small scale maps

   B) Large scale maps

   C) Intermediate between small and large scale map

   D) None of the above

8) Which is the smallest scale ?

   A) 1 : 50,000   B) 1 : 1,00,000

   C) 1 : 2,50,000   D) 1 : 10,00,000

9) In the setting of a map North point should correspond to _____

   A) North pole   B) Magnetic North

   C) The true North   D) None of these

10) The standard colour for forest is

   A) Green   B) Yellow   C) Brown   D) Gold

11) Which of the following has the largest scale ?

   A) A wall map of India   B) A map of India in an Atlas

   C) A town map of Solapur   D) A map of Solapur District

12) _____ wrote book element of cartography.

   A) Steers   B) Bowyer

   C) Robinson   D) Bygott

13) Which projection would be more suitable for equatorial area ?

   A) Conicals   B) Cylindricals

   C) Zenithals   D) Equal area

14) _____ datum suitable for Indian region digital mapping.

   A) WRS 80   B) WGS 84

   C) Clark 1866   D) NAD 20

II. What is cartography ? And explain its role in digital mapping in GIS. **14**

III. Write nature and scope of cartography. **14**

IV. Write function of color and pattern in map design. **14**

V. Write note on : **14**

   A) Type of scale

   B) Co-ordinate system.

VI. Explain in short. **14**

   A) Projection

   B) Map Reading.

VII. Describe in brief : **14**

   A) Symbolization

   B) Map design.

_____

SLR-VG – 7

Seat No.	

M.Sc. (Semester – II) Examination, 2014
GEOINFORMATICS (Paper – III)
Introduction to GIS & GPS

Day and Date : Saturday, 26-4-2014　　　　　　　　　　Max. Marks : 70
Time : 11.00 a.m. to 2.00 p.m.

Instructions : 1) Answer **any five** questions.
　　　　　　　2) **All** questions carry **equal** marks.
　　　　　　　3) Question **1** is **compulsory**.
　　　　　　　4) Draw **neat** and **labelled** diagram **wherever** necessary.

I. Filling the blanks with appropriate word :　　　　　　　　　　　**14**

　　1) Digitization Error may be create

　　　　A) Vertex　　　　　　　　　　B) Node

　　　　C) Stream　　　　　　　　　　D) Undershoot

　　2) Father of GIS

　　　　A) Roger Tomlinson　　　　　B) Vijay Batakar

　　　　C) Vikram Sorabhai　　　　　D) None of these

　　3) GLONASS stands for

　　　　A) Global Navigation Satellite System

　　　　B) Global Navey System

　　　　C) Global Network Satellite System

　　　　D) All of the above

　　4) Which is following proposed Indian Navigation System ?

　　　　A) Indian Rapid Navigation System

　　　　B) Indian Regional Navigation System

　　　　C) Indian Regional Narsastar System

　　　　D) None of these

P.T.O.

5) Indian GPS System always follow _____ datum.

   A) Clark 1886   B) WGS 8G

   C) WGS 80   D) All of the above

6) Conversion of raw analog from data to digital form data

   A) Rasterization   B) Vectorization

   C) Digitization   D) All of the above

7) The beginning point and end point of the any line called as

   A) Node   B) Vertex

   C) Arc   D) None of these

8) A common field used in joining or linking tables

   A) Key   B) Union   C) OR   D) Tuple

9) In vector data generate from in

   A) Point   B) Line

   C) Polygon   D) All of the above

10) Minimum number of Satellite required to got position in GPS

   A) 2   B) 4   C) 5   D) 1

11) Satellite orbits are inclined at an angle of 55° from

   A) Equator   B) North Pole

   C) South Pole   D) Specific latitude

12) Autocad software natire file format

   A) .shp   B) .dwq   C) .BMP   D) .JPEG

13) DEM means

   A) Digital Elevation Model   B) Digital Elevan model

   C) Data Enhance Model   D) All of the above

14) The arrangement and composition of map element on a map

   A) Layout   B) Map Design

   C) Thematic Map   D) All of the above

   II. What are component of GIS ? **14**

  III. What is the Raster data structure and its advantages ? **14**

  IV. What are role Topological data in GIS Mapping ? **14**

   V. Write short notes on : **14**

     A) Vector

     B) Errors in GIS database.

  VI. Write brief on : **14**

     A) GPS

     B) Thematic Maps.

 VII. Write note on : **14**

     A) DBMS

     B) History of GIS.

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Seat No.

M.Sc. (Semester – II) Examination, 2014
GEOINFORMATICS
Digital Image Processing (Paper – IV)

Day and Date : Tuesday, 29-4-2014　　　　　　　　　　　　Max. Marks : 70

Time : 11.00 a.m. to 2.00 p.m.

Instructions :　1) Answer **any five** questions.

　　　　　　　　2) **All** questions carry **equal** marks.

　　　　　　　　3) Question **one** is **compulsory**.

　　　　　　　　4) Draw **neat** and **labelled** diagrams **wherever** necessary.

I.　Fill in the blank with appropriate word.　　　　　　　　　　　　　　**14**

　1)　The data for the band are written line by line into same page in _____

　　　a) BIL　　　　　　b) BIF　　　　　　c) BIP　　　　　　d) BSQ

　2)　The image data acquired form remote sensing systems are stored in

　　　a) Digital image format　　　　　b) Digital data format

　　　c) Digital image data format　　　d) All of the above

　3)　The heart of any digital computer is the

　　　a) CPU　　　　　　　　　　　　b) Monitor

　　　c) CD Drive　　　　　　　　　　d) All of the above

　4)　Histogram equalization is a techniques of _____

　　　a) Contract　　　　　　　　　　b) Spatial filtering

　　　c) Band rationing　　　　　　　d) Band combination

　5)　The process of determining what digital numbers values is to be assign to the new pixels is known as _____

　　　a) Rectify　　　　b) Resample　　　　c) Clip　　　　d) Extract

　6)　Number of pixel, uniformity location are the key characteristics of

　　　a) Training sites　　　　　　　b) Classes

　　　c) Features　　　　　　　　　d) Training area

P.T.O.

7) _____ is any unwanted disturbance in image data is due to limitations in the sensing signal distribution.

   a) Atmospheric Haze

   b) Sun angle

   c) Noise

   d) Sky light

8) _____ from the training samples are polygonised to discriminant function which assign each pixel to a class in the feature space.

   a) Pixel

   b) Polygon

   c) AOI

   d) All of the above

9) ____ are the most common and convenient means of conveying or transmitting information.

   a) Picture

   b) Photo

   c) Image

   d) Drawing

10) Associated with each pixels a number known as

   a) Digital number

   b) Brightness value

   c) Both a and b

   d) None of these

11) Replacement by either the preceding or succeeding line is the method of

   a) Classification

   b) Radiometric correction

   c) Noise removal

   d) Geometric correction

12) _____ is parametric classification stage.

   a) Maximum likelihood

   b) Nearest neighbour

   c) Parallel piped

   d) J48

13) _____ known as confusion or contingency table.

   a) Error matrix

   b) Kappa-Co-efficient

   c) RMS

   d) All of the above

14) Enhancement techniques are ____

   a) Contract starch

   b) Density slicing

   c) Edge enhancement

   d) All of the above

II. What is digital image ? Explain digital image data format. **14**

III. Explain the detail supervised and unsupervised classification process. **14**

IV. What is enhancement ? Explain band combination and its importance. **14**

V. Write note on : **14**

   a) Radiometric correction.

   b) Noise removal.

VI. Write small account on : **14**
   a) Band ratio.
   b) Spatial filtering.

VII. Explain brief on : **14**
   a) Geometric correction.
   b) Kappa coefficient.

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