Seat No.

M.Sc. (Semester - I) (CBCS) Examination Oct/Nov-2019
Geoinformatics
INTRODUCTION TO GEOGRAPHY

Day & Date: Monday, 18-11-2019   Max. Marks: 70
Time: 11:30 AM To 02:00 PM

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.
3) Draw neat and labeled diagrams wherever necessary.

Q.1 **Fill in the blanks by choosing correct alternatives given below.** **14**

1) All the weather phenomena occur in which of the following layer?
   a) Stratosphere   b) Thermosphere
   c) Troposphere   d) Mesosphere

2) The lines drawn on maps joining the places of equal temperature reduced to sea level are called _____.
   a) Isobar   b) Isotherm
   c) Isolith   d) Isochron

3) The lower portion of the stratosphere having maximum concentration of _____.
   a) Water vapour   b) Methane
   c) Oxygen   d) Ozone

4) Identify the high FDI State?
   a) Goa   b) Andhra Pradesh
   c) Orissa   d) Rajasthan

5) Arrange the spectrum of electromagnetic wave with increasing frequency.
   a) Gamma ray, X-ray, Visible ray, Radio wave
   b) X-ray, Gamma ray, Visible ray, Radio wave
   c) Radio wave, Visible ray, X-ray, Gamma ray
   d) Visible ray, X-ray, Radio wave, Gamma ray

6) Which of the following surface has the highest albedo?
   a) Thin cloud   b) Water
   c) Forest   d) Snow cover

7) The fall of numerous uniform minute droplets of water having diameter of less than 0.5mm is called _____.
   a) Hail   b) Drizzle
   c) Snowfall   d) Sleet

8) In Mesosphere temperature _____.
   a) Decreases with increasing height
   b) Decreases with decreasing height
   c) Increases with increasing height
   d) Remains constant

9) _____ region consists of the geographical territories of North America and Greenland.
   a) Palaearctic   b) Nearctic
   c) Oriental   d) Ethiopian

10) Soil takes _____ of years to form soil upto a few cm in depth.
   a) Millions
   b) Billions
   c) Thousands
   d) Hundreds

11) A _____ settlement has well defined form in which houses are clustered in small space.
   a) Scattered
   b) Dispersed
   c) Compact
   d) Hamlet

12) BRO the border rod organisation was established in _____ for the development of rods of strategic importance in the northern and north-eastern borders of the country.
   a) 1960
   b) 1950
   c) 1940
   d) 1970

13) Which soils are found in the hilly and mountainous areas where sufficient rain forests are available?
   a) Arid Soils
   b) Black Soil
   c) Alluvial Soils
   d) Forest Soils

14) India has _____ largest rail network in the world.
   a) Second
   b) Third
   c) Fifth
   d) Fourth

Q.2 A) Answer the following question. (Any Four) 08
   1) Factors affecting Inland Waterways?
   2) Circular and semi-circular pattern of rural settlement.
   3) Ferrel cell.
   4) Cities of British period.
   5) Impact of railway on economy and society.

B) Write Notes. (Any Two) 06
   1) Characteristics of soils
   2) Problems of urbanization
   3) Cyclonic or frontal rainfall

Q.3 A) Answer the following questions. (Any Two) 08
   1) Describe composition of atmosphere?
   2) Types of imbalances.
   3) Urban growth and development in India?

B) Answer the followingquestions. (Any One) 06
   1) What is humidity? Explain its type in detail.
   2) World distribution of plants.

Q.4 A) Answer the following questions. (Any Two) 10
   1) Explain fogs in detail?
   2) Koppens classification of climate.
   3) Patterns of rural settlement.

B) Answer the following questions. (Any One) 04
   1) Which factors controlling the Distribution of the Earth's Temperature?
   2) Consequences of regional imbalances in India.

Q.5 Answer the following questions. (Any Two) 14
   1) What is insolation? Explain the factors which are affecting the distribution of insolation?
   2) Agriculture-system of the world.
   3) Define cloud? Give classification of clouds on the basis of its height and describe it?

Seat No.

Set **P**

M.Sc.(Semester - I) (CBCS) Examination Oct/Nov-2019
Geoinformatics
INTRODUCTION TO GEOLOGY

Day & Date: Tuesday, 05-11-2019   Max. Marks: 70
Time: 11:30 AM To 02:00 PM

Instructions: 1) All questions are compulsory.
2) All questions carry equal marks.
3) Draw neat & labeled diagram wherever necessary.

Q.1   Choose the correct answer for the following.   14

1)   Which of the following is not a metamorphic rock?
   a)   Amphibolite   b)   Skarn
   c)   Carbonatite   d)   Schist

2)   Identify the favorable structure for construction of tunnel _____.
   a)   Anticline   b)   Syncline
   c)   Fault   d)   Fracture

3)   Which of the properties is typical for mica?
   a)   composition   b)   structure
   c)   cleavage   d)   all the above

4)   Batholithic form is exhibited by _____.
   a)   basalt   b)   dolerite
   c)   granite   d)   schist

5)   The trend of bedding on the horizontal surface is called as _____.
   a)   dip   b)   strike
   c)   joint   d)   fault

6)   Find the suitable dam on granitic terrain _____.
   a)   Gravity dam   b)   Buttress dam
   c)   Archuate dam   d)   None of these

7)   Which of the following is a non - Basemetal mineral?
   a)   Sphalerite   b)   Galina
   c)   Chalcopyrite   d)   Magnetite

8)   Identify the felsic mineral from the following _____.
   a)   olivine   b)   orthoclase
   c)   mica   d)   pyroxene

9)   Orthoclase can be identified by the colour being _____.
   a)   flesh pink   b)   black
   c)   violet   d)   red

10) Which of the following can be used for constructional purpose of dams?
   a)   Limestone   b)   Shale
   c)   Granite   d)   Mudstone

11) The softest mineral of the following _____.
   a)   quartz   b)   soapstone
   c)   feldspar   d)   corundum

12) The suitable rocks on which dams can be constructed is_____.
    a) Marble   b) Shales
    c) Limestone   d) Granite

13) With reference to the mineral quartz, find the odd character _____.
    a) vitreous   b) trigonal
    c) hardness 5   d) grey

14) Find the hypabyssal rock of the following _____.
    a) granite   b) graphite
    c) dolerite   d) sandstone

Q.2 A) Answer the following (Any Four)   **08**
1) Structures of metamorphic rocks.
2) Feldspar minerals.
3) Type of unconformities.
4) Earthen dams.
5) Porphyritic texture.

B) Write Notes on (Any Two)   **06**
1) Minerals of base metals
2) Types of metamorphic rocks
3) Forms of Igneous rocks

Q.3 A) Answer the following (Any two)   **08**
1) Features noticed in toposheet.
2) Geological map interpretation.
3) Joint pattern in basaltic rocks.

B) Answer the following (Any One)   **06**
1) Engineering properties of construction material.
2) Site selection aspects for constructing a dam.

Q.4 A) Answer the following (Any Two)   **10**
1) Physical properties of various minerals.
2) Bauxite deposits of Maharashtra.
3) Types of faults.

B) Answer the following (Any One)   **04**
1) Site suitability of tunnels.
2) Application of clinometer.

Q.5 Answer the following (Any two)   **14**
a) Forms of igneous rocks.
b) Types of folds and faults.
c) Agents of metamorphism.

Seat No.

M.Sc. (Semester - I) (CBCS) Examination Oct/Nov-2019
Geoinformatics
GEOMORPHOLOGY

Day & Date: Thursday, 07-11-2019   Max. Marks: 70
Time: 11:30 AM To 02:00 PM

Instructions: 1) All questions carry equal marks.
           2) All questions are compulsory.
           3) Draw neat labeled diagram wherever necessary.

Q.1 Fill in the blanks by choosing correct alternatives given below.   **14**

1) Cirque are formed by the process of
   a) Navitation   b) Calvation
   c) Ablation   d) Abration

2) The erosive power of a river depend on its velocity. If the velocity is double, the erosive power increase by
   a) two times   b) four times
   c) six times   d) twelve times

3) Flat valley are formed during the _____ stages of river.
   a) initial   b) youth
   c) mature   d) old

4) Flat topped hills or Small Mountain formed by stream action are called _____
   a) Mesa   b) Buttes
   c) Cuestas   d) Steam terraces

5) The sand dunes migrated in the
   a) Leeward direction
   b) Windward direction
   c) Both windward and leeward diction
   d) None of the above

6) Loess is a non stratified, well-sorted Aeolian deposit composed of _____ grade frangments.
   a) Sand   b) Silt
   c) Clay   d) Pebble

7) Mushroom-shaped structure having slender columns and wide tops resulting from the abrasive action of wind are described as _____.
   a) Ventifacts   b) Brazil nuts
   c) Pedestal rocks   d) Draas

8) Exfoliation a dominant physical process, is also assisted by some chemical processes. The most important part is played by _____.
   a) Hydration   b) Oxidation
   c) Hydrolysis   d) Carbonation

9) Physical weathering is NOT characteristics of _____.
   a) Polar region   b) Hot desert
   c) Cold desert   d) None of above

10) A _____ is formed on the margin of an island in continuity with the shore.
   a) Sea mounts
   b) Barrier reef
   c) Fringing reef
   d) Deep ocean trenches

11) A cone shaped pillar of calcium carbonate, hanging from the cavern roof develops such deposits called as
   a) Stylolites
   b) Stalagmite
   c) Caverns
   d) Stalactite

12) Narrow and deep river valley which develop in hard rocks are
   a) Gorges
   b) Oxbow
   c) Ventifacts
   d) Stacks

13) When major stream are parallel and short tributaries join the main stream at near right angle such drainage is termed as
   a) Subsequent stream
   b) Trellis pattern
   c) Parallel pattern
   d) Antecedent stream

14) The scratch and grooves left on bed rock and boulder are called
   a) Striation
   b) Plucking
   c) Cirque
   d) Fiords

Q.2 A) Answer the following question. (Any Four)   08
   1) Alluvial fan
   2) Frost Action
   3) Defination of Exfoliation
   4) Pedestal rocks
   5) Defination of porosity

B) Write Notes. (Any Two)   06
   1) Out wash plain
   2) Hanging valley
   3) Roches mountainee

Q.3 A) Answer the following question. (Any Two)   08
   1) Express origin of Coral reef.
   2) Explain types of streams.
   3) Explain transportation by glacial.

B) Answer the following question. (Any One)   06
   1) Explain in brief erosional cycle of Davis.
   2) Explain in brief chemical weathering.

Q.4 A) Answer the following question. (Any Two)   10
   1) Explain different types of drainage pattern.
   2) Write different erosinal features of karst topography.
   3) Explain depositional features by sea.

B) Answer the following question. (Any One)   04
   1) Explain different types of sand dunes.
   2) Define different stages of valley formation.

Q.5 Answer the following question. (Any Two)   14
   1) Depositional land form by wind.
   2) Explain different horizons of soil and its nomenclatures with different chemical components.
   3) Explain in brief plate tectonic theory.

Seat No.

M.Sc. (Semester - I) (CBCS) Examination Oct/Nov-2019
Geoinformatics
COMPUTER APPLICATION IN EARTH SCIENCE

Day & Date: Saturday, 09-11-2019   Max. Marks: 70
Time: 11:30 AM To 02:00 PM

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

Q.1 **Fill in the blanks by choosing correct alternative given below.**   **14**

1) In the context of computing and internet, identify the correct pair from the following.
   a) TB–Memory Storage Unit   b) Playstore –Operating system
   c) Pixel–Colour enhancing facility   d) USB–Antivirus

2) Identify the correct pair from the following.
   a) Google – Bill gates   b) Wikipedia – jimmy wales
   c) Hotmail – Tim Cook   d) YouTube – Richard Stallman

3) A CPU contains _____.
   a) a card reader and a printing device
   b) an analytical engine and a control unit
   c) a control unit and an arithmetic logic unit
   d) an arithmetic logic unit and a card reader

4) In the context of computer generated (typed) text, identify the odd non-verbal clue form the following.
   a) Bold   b) Italic
   c) Emoticon   d) Underline

5) Which of the following is not a binary number?
   a) 001   b) 101
   b) 202   d) 110

6) Help menu is available at which button?
   a) End   b) Start
   c) Turn off   d) Restart

7) Which of the following is the correct chronology of internet facilities?
   a) Amazon, Google, Snapchat, Facebook
   b) Google, Facebook, Amazon, Snapchat
   c) Google, Amazon, Facebook, Snapchat
   d) Amazon, Google, Facebook, Snapchat

8) Which of the following statements is true?
   a) Microcomputer works faster than Minicomputer
   b) Speed of both the computers is the same
   c) Minicomputer works faster than Microcomputer
   d) The speeds of both these computers cannot be compared with the speed of advanced.

9) CD-ROM stands for_____.
   a) Compactable Read Only Memory
   b) Compact Data Read Only Memory
   c) Compactable Disk Read Only Memory
   d) Compact Disk Read Only Memory

10) Which of the following is a part of the Central Processing Unit?
   a) Printer   b) Mouse
   c) Keyboard   d) Arithmetic & Logic Unit

11) All of the following are examples of storage devices EXCEPT.
   a) hard disk drives   b) floppy disk drives
   c) printers   d) CD drives

12) To access properties of an object, the mouse technique to use is _____.
   a) Dragging   b) Right-clicking
   c) Dropping   d) Shift-Clicking

13) Which of the following contains permanent data and gets updated during the processing of transactions?
   a) Operating System File   b) Software File
   c) Transaction File   d) Master File

14) To prevent the loss of data during power failures, use a (n):
   a) UPS   b) Surge protector
   c) Encryption program   d) Firewall

Q.2 A) Answer the following questions. (Any Four)   **08**
   1) Type of Printers?
   2) Hierarchical Models
   3) Natural joints
   4) Internet
   5) Data Storage

B) Write Notes. (Any Two)   **06**
   1) CPU? Hardware of system
   2) Many to many design model with example
   3) Normalization data

Q.3 A) Answer the following questions. (Any Two)   **08**
   1) MS Office
   2) Query processing theory in SQL
   3) Use GIS Application in Agriculture

B) Answer the following questions. (Any One)   **06**
   1) What is Operating System? Explain Windows operating system.
   2) Forestry? Explain computer application in Forestry.

Q.4 A) Answer the following questions. (Any Two)   **10**
   1) Software and hardware of Computers.
   2) Explain the role of Administrator in DBMS.
   3) What are the applications of computer in Earth Sciences?

B) Answer the following questions. (Any One)   **04**
   1) Advantages and disadvantages of Network models.
   2) SQL? Short note on SQL?

Q.5 Answer the following questions. (Any Two)   **14**
   1) What is computer? Explain development and history of computer.
   2) What is DBMS Models? Write in details about Relational Models.
   3) Write an essay on computers application in GIS?

Seat No.

M.Sc. (Semester - II) (CBCS) Examination Oct/Nov-2019
Geoinformatics
INTRODUCTIONS TO REMOTE SENSING

Day & Date: Monday, 04-11-2019   Max. Marks: 70
Time: 11:30 AM To 02:00 PM

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.
3) Draw neat & labeled diagrams wherever necessary.

Q.1   Fill in the blanks by choosing correct alternatives given below.   14

1)   Arrange the spectrum of electromagnetic wave with increasing wave length.
a)   Gamma ray, x-ray, UV ray, visible
b)   X-ray, gamma ray, visible, UV ray
c)   Gamma ray, x-ray, visible, UV ray
d)   Gamma ray, UV ray, x-ray, visible

2)   Shadows in a satellite image often _____ to calculate height of an object.
a)   Assist   b)   Hinder
c)   Do not affect   d)   Aggravate

3)   Which colour is having largest wavelength in visible spectrum?
a)   Red   b)   Blue
c)   Green   d)   Yellow

4)   Along-track scanners are relatively better than across-track scanners in terms of _____.
a)   Image quality   b)   Spatial resolution
c)   Radiometric resolution   d)   All of above

5)   RADAR system is an example of _____.
a)   Passive remote sensor   b)   Active remote sensor
c)   Thermal sensor   d)   None of Above

6)   Leaf reflectance depends primarily on _____.
a)   The pigment   b)   Internal cell structure
c)   Equivalent water content   d)   All of these

7)   A thermal sensor can acquire "cloud-free" images of an area when it is covered under cloud.
a)   True   b)   False

8)   The main difference between multispectral and hyperspectral is the _____ of bands and how _____ the bands are.
a)   Number, narrow   b)   Sum, wide
c)   Number, wide   d)   Sum, extensive

9)   In a standard False Colour Composite (FCC) red colour is assigned to _____.
a)   Visible band   b)   Infrared band
c)   Ultra violet band   d)   Thermal infrared band

10) First ever aerial photograph taken from hot air balloon in _____.
a)   1864   b)   1858
c)   1850   d)   1867

11) Repetitive observations of the same area at equal interval of time are useful to monitor the dynamic phenomena of _____.
    a) Lithology
    b) Vegetative cover
    c) Buildings
    d) Groundwater

12) The distance measured between two points on a map is 2 cm. and the scale of the map is 1:50,000. The corresponding distance on an aerial photograph is 10 cm. Calculate the scale of the photograph.
    a) 1:25000
    b) 1:10000
    c) 1:50000
    d) 1:15000

13) How many total shades of grey or colours of 8-bits image?
    a) 64
    b) 128
    c) 256
    d) 257

14) Which band of TM is useful for determining vegetation types?
    a) Band 1
    b) Band 3
    c) Band 5
    d) Band 4

Q.2 A) Attempt any four of the following question.   **08**
    1) Define Nadir point.
    2) Write about FCC image.
    3) What is photogrammetry?
    4) Make a list of stages involved during remote sensing.
    5) Define Atmospheric window.

B) Write Notes on (Any Two)   **06**
    1) Types of scattering
    2) IFOV
    3) Multispectral scanner

Q.3 A) Attempt any two of the following question.   **08**
    1) Explain different types of aerial cameras.
    2) State applications of remote sensing.
    3) Explain different types of satellite orbits.

B) Answer the following (Any One)   **06**
    1) Explain in brief the electromagnetic spectrum of energy.
    2) State the orbital characteristics of Landsat system.

Q.4 A) Answer the following (Any Two)   **10**
    1) Give comparison between vertical and oblique aerial photography.
    2) Explain types of platforms used in remote sensing.
    3) Explain spectral signature of soil.

B) Answer the following (Any One)   **04**
    1) Explain the interaction of EM spectrum with vegetation.
    2) Discuss different types of discrepancies in aerial photography.

Q.5 Answer the following (Any two)   **14**
    a) Explain the different photo recognition elements.
    b) Discuss the history of Indian remote sensing satellite.
    c) Explain the different types of resolutions used in remote sensing.

Seat No.

M.Sc. (Semester - II) (CBCS) Examination Oct/Nov-2019
Geoinformatics
INTRODUCTION TO GIS AND GPS

Day & Date: Wednesday, 06-11-2019   Max. Marks: 70
Time: 11:30 AM To 02:00 PM

Instructions: 1) All questions are compulsory.
               2) Figures to the right indicate full marks.
               3) Draw neat and labeled diagram wherever necessary.

Q.1 **Fill in the blanks by choosing correct alternatives given below.**   **14**

1) The history of GIS is started in _____.
   a) 1955   b) 1854
   c) 1960   d) None of the above

2) Vector data model generate from in _____.
   a) Image   b) Photo
   c) Polygon   d) None of these

3) _____ format is the popular geospatial vector data format in GIS.
   a) .tiff   b) .shp
   c) .jpg   d) .bmp

4) DEM means _____.
   a) Data Enhance Model   b) Digital Extension Model
   c) Digital Elevation Model   d) None of these

5) The beginning or end point of a line is _____.
   a) Node   b) Arc
   c) Vertex   d) None of these

6) Orbital altitude of GPS satellite from earth surface is _____.
   a) 20200 km   b) 15600 km
   c) 10200 km   d) None of these

7) NOAA stands for _____.
   a) National Overall And Area
   b) Navigation Oceanic and Atmospheric Administration
   c) National Ozone and Atmosphere
   d) None of these

8) _____ Is the name of Russian equivalent of GPS.
   a) GLASNOST   b) IKONOS
   c) GPESKI   d) GLONASS

9) The GPS system Controlled by _____.
   a) England Army   b) US Army
   c) France Army   d) Indian Army

10) _____ is a open source GIS software.
   a) ArcGIS   b) MapInfo
   c) QGIS   d) Erdas

11) Digitization error may create _____.
   a) Overshoot
   b) Stream
   c) Starch
   d) Line Strip

12) Conversion of vector data to raster data called as _____.
   a) Rectorization
   b) Vectorization
   c) Rasterization
   d) None of these

13) TIN stands for _____.
   a) Triangular Irregular Network
   b) Triple Irregular Network
   c) both A and B
   d) None of these

14) The role of interpolation in GIS is to fill the gap between the _____ data point.
   a) Continuous
   b) Vector
   c) Raster
   d) Observed

Q.2 A) Answer the following questions. (Any Four) 08
   1) Define the Projection.
   2) Write concept of Arc.
   3) Define the Raster data?
   4) Write the advantages of topology.
   5) Write concept of Node.

B) Write Notes. (Any Two) 06
   1) Concept of connectivity
   2) Steps involved in geo-referencing
   3) UTM

Q.3 A) Answer the following questions. (Any Two) 08
   1) Vector Data format.
   2) Sources of errors in GPS.
   3) DBMS

B) Answer the following questions. (Any One) 06
   1) Non spatial data.
   2) Objectives of GIS.

Q.4 A) Answer the following questions. (Any Two) 10
   1) Write application of GIS.
   2) Explain different types of projection.
   3) History of GIS.

B) Answer the following questions. (Any One) 04
   1) Space segment of GPS.
   2) Function of GIS.

Q.5 Answer the following questions. (Any Two) 14
   a) Write the raster data structure.
   b) Define GPS and give its application in details.
   c) Define the GIS? Write the component of GIS.

Seat No.

M.Sc. (Semester - II) (CBCS) Examination Oct/Nov-2019
Geoinformatics
DIGITAL IMAGE PROCESSING

Day & Date: Friday, 08-11-2019   Max. Marks: 70
Time: 11:30 AM To 02:00 PM

Instructions: 1) All questions are compulsory.
               2) Figures to the right indicate full marks.
               3) Draw neat and labeled diagram whenever necessary.

Q.1 **Fill in the blanks by choosing correct alternatives given below.**   **14**

1) Digital image contain _____.
   a) CN Value   b) DN Value
   c) PN Value   d) None of these

2) In study of sea level change mapping _____will be will helpful.
   a) Radiometric   b) Spectral
   c) Temporal   d) Both A and C

3) DPI means.
   a) Distance per inch   b) Digitally processed image
   c) DOT Per Inch   d) None of these

4) _____is not a satellite image format.
   a) .shp   b) .tiff
   c) .img   d) .LAN

5) What is georeferencing?
   a) Converting data to a feature class
   b) Aligning your data with a location on the Earth's surface
   c) Projecting your data so that it has no distortion
   d) None of these

6) Which is the fundamental step in image processing?
   a) Filtration   b) Image restroration
   c) Image Enhacment   d) Image Acquisition

7) Training sites are used in ____Classification.
   a) Unsupervised   b) Supervised
   c) Both A and B   d) None of the above

8) Following is a image enhancement Technique.
   a) Linear Contrast Stretch   b) Contrast Enhancement
   c) Non-Linear Contrast Stretch   d) All of the above

9) Low pass filter promotes.
   a) Low Intensity components   b) High Intensity components
   c) Mid Intensity components   d) None of the above

10) Which software is used for image processing.
   a) ERDAS 9.3   b) Q-GIS
   c) Both A & B   d) None of the above

11) Level Slicing means _____.
   a) Dividing the objects along X axis based on user specified intervals
   b) Dividing the DN values along X axis based on user specified intervals
   c) Dividing the grey-levels along X axis based on user specified intervals
   d) All of the above

12) Which of the following effect do NOT result in geometrical erors/distortion in satellite images.
   a) Earth Curventure
   b) Atmospheric absorption
   c) Earth Rotation
   d) None of the above

13) Removal of cloud cover from the images will not disturb the objects in the images.
   a) True
   b) False

14) Geometric corrections will correct the _____.
   a) Zero pixels form image
   b) Shape of the objects
   c) Directions of the image
   d) None of the above

Q.2 A) Answer the following questions.(Any Four) 08
   1) Error Corrections
   2) GCP
   3) Digital image processing
   4) Supervised classification
   5) Errors of classification

B) Write Notes on (Any Two) 06
   1) Digital images
   2) Contrast Enhancement
   3) Fuzzy logic

Q.3 A) Answer the following questions.(Any Two) 08
   1) Error matrix
   2) Density slicing
   3) Discriminate functions

B) Answer the following questions.(Any One) 06
   1) Sources of errors in DIP
   2) Spatial Filtering

Q.4 A) Answer the following questions.(Any Two) 10
   1) Exponential contrast enhancement
   2) Noise removal
   3) Band Combination

B) Answer the following questions.(Any One) 04
   1) Mahalanobis Distance
   2) Machine approach for hybrid classification

Q.5 Answer the following questions.(Any Two) 14
   a) Geometric correction
   b) Radiometric corrections
   c) Textural classification approach

Seat No.

M.Sc. (Semester - III) (CBCS) Examination Oct/Nov-2019
Geoinformatics
SPATIAL ANALYSIS

Day & Date: Monday, 18-11-2019   Max. Marks: 70
Time: 03:00 PM To 05:30 PM

Instructions: 1) All questions are compulsory.
2) Figures to the right indicate full marks.
3) Draw neat and labeled diagram wherever necessary.

Q.1   Fill in the blanks by choosing correct alternatives given below.   14

1)   Cubic Convolution is part of _____.
   a)   Unsupervised classification   b)   Network Analysis
   c)   Cluster analysis   d)   None of these

2)   Buffer analysis belongs to _____.
   a)   Proximity   b)   Extract
   c)   Overlay   d)   None

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)   Supervised classification can be done on Vector features.
   a)   True   b)   False

5)   Overlay operation contain _____.
   a)   Extract   b)   Clip
   c)   Mask   d)   Dissolve

6)   Following is the open source software for GIS _____.
   a)   GRASS   b)   Q-GIS
   c)   ESRI ArcGIS   d)   Both A & B

7)   Point entity belongs to _____.
   a)   Raster   b)   Vector
   c)   Both A and B   d)   None

8)   UTM Stands for _____.
   a)   Universal Transverse Mercator
   b)   Universal Transverse Measurement
   c)   Universal Transit Mercator
   d)   Universal Transverse Meter

9)   Overlay operation can be done on Single layer _____.
   a)   True   b)   False

10) Road Distance analysis can be performed using _____.
   a)   Classification   b)   Buffer analysis
   c)   Network analysis   d)   Join analysis

11) Evolution of Network complexity is done using _____.
   a)   Alpha Indices   b)   Algebra Indices
   c)   Altimeter Indices   d)   Anatomy Indices

12) Digitization error may create _____.
    a) Overshoot   b) Strim
    c) Strach   d) Line strip

13) _____ Is a spatial model.
    a) Cluster   b) Spatial Join
    c) Spatial query   d) Line strip

14) Change detection can be done using.
    a) Network analysis   b) Cluster analysis
    c) Cost surface analysis   d) None

Q.2 A) Attempt any four of the following question.   **08**
    1) Spatial analysis
    2) Union
    3) C3 Matrix
    4) Erase
    5) Unsupervised Classification

B) Answer the following questions. (Any Two)   **06**
    1) Network Accessibility
    2) Alpha Indices
    3) Predictive Model

Q.3 A) Answer the following questions. (Any Two)   **08**
    1) Map Algebra
    2) Dissolve and Eliminate.
    3) Zonal Functions.

B) Answer the following questions. (Any One)   **06**
    1) Difference between Zonal and Local Function.
    2) Line in Polygon.

Q.4 A) Answer the following questions. (Any Two)   **10**
    1) Difference between Cluster and Random distribution Role model.
    2) Significance of Geostatistical analysis.
    3) Multilayer operations.

B) Answer the following questions. (Any One)   **04**
    1) Network connectivity.
    2) Explanatory model.

Q.5 Answer the following questions. (Any Two)   **14**
    a) Method of Evaluating point pattern.
    b) Overlay operations.
    c) Case study on Network analysis.

Seat No.

M.Sc. (Semester - III) (CBCS) Examination Oct/Nov-2019
Geoinformatics
ADVANCED TECHNIQUES IN REMOTE SENSING

Day & Date: Tuesday, 05-11-2019   Max. Marks: 70
Time: 03:00 PM To 05:30 PM

Instructions: 1) All questions are compulsory.
              2) Question 1 is compulsory and should be answered in the question paper.
              3) Draw neat and labeled diagrams wherever necessary.

Q.1 Fill in the blanks by choosing correct alternatives given below.   **14**

1) _____ can penetrate clouds, fog and rain.
    a) Visible waves   b) Thermal waves
    c) Microwave   d) All of these

2) Mention the different services of satellite system.
    a) Broadcasting satellite services   b) Signal transmission
    c) Information transmission   d) None of the above

3) For applications like missile fire control, bistatic radar are used.
    a) True   b) False

4) One of the application of Radarsat is _____.
    a) Oil pollution monitoring   b) Iceberg detection
    c) Crop monitoring   d) All of these

5) A major challenge in designing a radiometer is _____.
    a) Design complexity
    b) High cost
    c) Requirement of highly sensitive receivers
    d) All of these

6) JERS Stands for _____.
    a) Japanese electromagnetic remote sensing
    b) Japanese earth radar system
    c) Japanese earth resource satellite
    d) None of these

7) For radar system, antennas with a large beam width are preferred over narrow beam antennas.
    a) True   b) False

8) What is meant by azimuth angle?
    a) It is defined as the angle produced by intersection of local horizontal plane & the plane passing through the earth station, the satellite & center of earth.
    b) It is define as the angle produced by intersection of local vertical plane passing through the station, the satellite & center of earth.
    c) It defined as the angle produced by intersection of horizontal plane & center of earth.
    d) None of these

9) 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) 1mm to 1m

10) What is the name of the following equation? : NIR + Red/ NIR – Red.
   a) Enhanced Vegetation Index
   b) Normalized Difference Vegetation Index
   c) Vegetation Index
   d) Plant Stress Index

11) _____ is thermal band in Landsat 7 ETM + data.
   a) One band   b) Two band
   c) Six band   d) Four band

12) _____ and radar systems have become established in many technical areas such as military, civil and industrial purposes.
   a) Microwave techniques   b) NIR
   c) Thermal remote sensing   d) None of these

13) C band is useful for space born _____.
   a) SAR   b) ALMAZ
   c) Commercial   d) None of these

14) The term radar cross section defines the _____.
   a) Scattering ability of the target.
   b) Power radiating ability of the radar
   c) Amount of energy scattered by unwanted objects
   d) Cross section of radar area through which energy is transmitted.

Q.2 A) Answer the following Questions. (Any Four)   **08**
   1) Electromagnetic spectrum
   2) Thermal Remote Sensing
   3) Altimeter
   4) Radiometers
   5) Microwave Remote sensing

B) Write Short Notes. (Any Two)   **06**
   1) ERS - 1
   2) SIR - 2
   3) Colour Transformation

Q.3 A) Answer the following Questions. (Any Two)   **08**
   1) What are sensors and types of sensors?
   2) Explain terrain properties of RADAR.
   3) System properties.

B) Answer the following Questions. (Any One)   **06**
   1) PCA in detail.
   2) Explain thermal properties of material.

Q.4 A) Answer the following Questions. (Any Two)   **10**
   1) Image Fusion Techniques.
   2) Explain the Wien's Displacement law.
   3) Landsat

B) Answer the following Questions. (Any One)   **04**
   1) SEASAT
   2) Describe the SLR.

Q.5 **Answer the following questions. (Any Two)** **14**
  a) Explain the RADAR and radar principal in detail.
  b) Describe Stefan - Boltzmann Law and Plank Radiation (Blackbody) law.
  c) What is SAR and explain SIR-2.

Seat No.	

M.Sc. (Semester - III) (CBCS) Examination Oct/Nov-2019
Geoinformatics
ADVANCED TECHNIQUES IN GIS

Day & Date: Thursday, 07-11-2019   Max. Marks: 70
Time: 03:00 PM To 05:30 PM

Instructions: 1) All questions are compulsory.
                       2) Figures to the right indicate full marks.
                       3) Draw neat and labeled diagrams wherever necessary.

Q.1   Fill in the blanks by choosing correct alternatives given below.   14

1) The _____ operation in fuzzy set theory is equal to the AND operation in boolean algebra.
   a) overlay   b) Krigging
   c) Boolean   d) Intersect

2) Microwave portion of EMR lies between _____.
   a) 0.4 - 0.7mm   b) 0.1 - 100cm
   c) 0.7 - 1.3mm   d) 5 - 1m

3) _____ is the thermal band in Landsat & ETM +.
   a) First   b) Second
   c) Fifth   d) Sixth

4) ANN is used for _____.
   a) System identification and control
   b) Quantum Chemistry
   c) Game playing & decision making
   d) All of these

5) Father of GIS: Roger Tomlinson from _____.
   a) Russia   b) U. S. A
   c) Canada   d) France

6) GML represents _____ information in the form of _____.
   a) Geological, .shp   b) Geographical, .shp
   c) Geographical, .text   d) Geological, .text

7) ANN is developed based on _____ method.
   a) Physical   b) Biological
   c) Political   d) None

8) Thiessen polygon is a _____ method of interpolation.
   a) Global   b) Inaccurate
   c) Local   d) None

9) The union operation in fuzzy set theory is equivalent to _____ in boolean algebra.
   a) NOT   b) OR
   c) AND   d) XOR

10) AHP stands for _____.
    a) Analytic High Parameter   b) Analytic Hierarchy Process
    c) Analysis High Process   d) Analysis Hammer Process

11) _____ is the spatial resolution for Sentinel 2 data.
    a) 10m   b) 23.5m
    c) 30m   d) 40m

12) _____ is not a tool of Geostatistical analysis.
    a) Spline   b) IDW
    c) Krigging   d) georeferancing

13) Map algebra, Groundwater, Extraction and Hydrology are the tools in the _____ toolbox.
    a) Network analysis   b) Geostatistical Analysis
    c) Data management   d) Spatial Analysis

14) Band 8th is the PAN (Panchromatic) data is present in _____.
    a) ASTER   b) CARTOSAT
    c) Landsat 7 ETM+   d) LISS III

Q.2 A) Answer the following questions: (Any Four)   **08**
1) Define Projection
2) Symbology
3) Buffer
4) Diagram of Sol model
5) Union

B) Write Notes. (Any Two)   **06**
1) Arc SDE
2) GML
3) Intersection

Q.3 A) Answer the following questions. (Any Two)   **08**
1) TIN
2) Thissen polygon
3) Kernel Density

B) Answer the following questions. (Any One)   **06**
1) Surface analysis
2) Global Spatial data infrastructure

Q.4 A) Answer the following questions. (Any Two)   **10**
1) National Spatial data infrastructure
2) 3D GIS
3) Spatial Data Mining

B) Answer the following questions. (Any One)   **04**
1) Tool based approach (Architecture)
2) Spatial Classification

Q.5 Answer the following (Any Two)   **14**
a) Functional Approach
b) Components of DSS
c) Spatial Clustering

Seat No.

M.Sc. (Semester - IV) (CBCS) Examination Oct/Nov-2019
Geoinformatics
GEOINFORMATICS APPROACH FOR NATURAL RESOURCE MANAGEMENT

Day & Date: Monday, 04-11-2019   Max. Marks: 70
Time: 03:00 PM To 05:30 PM

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

Q.1 Fill in the blanks by choosing correct alternatives given below.   14

1) _____ beam SONAR provides two kinds of data: Bathymetric & Acoustic back scatter.
    a) Single   b) Multiple
    c) Side   d) Middle

2) Water absorbs band _____.
    a) X-ray   b) Visible
    c) Infrared   d) Radiowave

3) _____ colour indicates agriculture in FCC image.
    a) Blue   b) Green
    c) Red   d) Yellow

4) Spatial resolution of LISS IV _____.
    a) 0.5 m   b) 23.5 m
    c) 5.8 m   d) 72.5 m

5) _____ band is used for geomorphological and geological feature mapping and monitoring.
    a) Visible   b) Thermal
    c) Microwave   d) Radiowave

6) IRS LISS III data support preparation of _____ scale map.
    a) 1 : 2,50,555   b) 1 : 50,000
    c) 1 : 1,100,000   d) all of these

7) Crop yield is influenced by a large number of _____ factor.
    a) Natural   b) Biotic
    c) Abiotic   d) Manmade

8) Which of following water parameter measured using remote sensing?
    a) TDS   b) TSS
    c) Colour   d) Smell

9) The Mississippi river is _____ kilometres long.
    a) 40   b) 400
    c) 4000   d) 40000

10) What that has a pH of 4 is _____.
    a) Acidic   b) Basic (Alkaline)
    c) Neutral   d) None of above

11) The Atlantic Ocean resembles the letter in shape _____.
    a) A   b) V
    c) U   d) S

12) Which of the following has the lowest albedo (%)?
    a) Vegetation   b) Desert
    c) Bare Soil   d) Calm Water

13) Microwave sensor is also used especially during _____ in crop mapping.
    a) Summer   b) Rainy
    c) Winter   d) All of these

14) Tropical rain forest are found near the _____.
    a) Equator   b) North pole
    c) South pole   d) None of these

Q.2 A) Answer the following questions. (Any Four)   **08**
    1) What is ASTER?
    2) Define Coral?
    3) What is Phytoplankton?
    4) What is Scale?
    5) What is Natural Gas?

B) Write short notes. (Any Two)   **06**
    1) SONAR
    2) IRS P6 LISS III sensor
    3) Advantages of LIDAR

Q.3 A) Answer the following questions. (Any Two)   **08**
    1) Advantages DGPS
    2) Soil moisture mapping
    3) Explain ocean salinity.

B) Answer the following questions. (Any One)   **06**
    1) Explain different parameters of morphometric analysis.
    2) What are the applications of CartoSat-DEM?

Q.4 A) Answer the following questions. (Any Two)   **10**
    1) Describe different types of soil.
    2) PFZ
    3) Write a detail note on Ocean colour monitoring.

B) Answer the following questions. (Any One)   **04**
    1) A Wifs
    2) Water cycle

Q.5 Answer the following questions. (Any Two)   **14**
    a) Explain the role of RS and GIS in Forest fire mapping.
    b) Explain the role of RS and GIS in Soil texture mapping.
    c) Explain the role of RS and GIS in Watershed management.

Seat No.

Set **P**

M.Sc. (Semester - IV) (CBCS) Examination Oct/Nov-2019
Geoinformatics
APPLICATION OF RS AND GIS IN DISASTER MANAGEMENT

Day & Date: Wednesday, 06-11-2019   Max. Marks: 70
Time: 03:00 PM To 05:30 PM

Instructions: 1) All questions carry equal marks.
         2) All questions are compulsory.
         3) Draw neat labeled diagram wherever necessary.

Q.1   **Fill in the blanks by choosing correct alternatives given below.**   **14**

1)   Powerful tsunami are produced by
    a)   Volcanic eruptions   b)   Cyclone
    c)   Tornados   d)   Earthquake

2)   Avalanches take place in _____.
    a)   High altitudes   b)   Low latitudes
    c)   Ground level   d)   beneath the ocean

3)   Why don't many coastal communities try to educate visitors and new residents about natural hazards in their areas? They view such information as _____.
    a)   Bad for business
    b)   Too difficult for most people to understand
    c)   A national security issue
    d)   Information an insurance company might use to their advantage

4)   In preparation for an emergency, employees should become familiar with _____.
    a)   Emergency equipment   b)   Exits and evacuation routes
    c)   Storm shelters   d)   All of the above

5)   Typically, the best course of action to take during a medical emergency is to _____.
    a)   Begin first aid immediately
    b)   Activate the emergency plan for reporting injuries
    c)   Notify the person's family about the situation
    d)   Both answers a and b

6)   Exposed to a hazardous chemical, the affected area should be flushed for _____ minutes.
    a)   5 to 10   b)   10 to 15
    c)   15 to 20   d)   20 to 25

7)   Typically, the best course of action to take during a medical emergency is to _____.
    a)   Begin first aid immediately
    b)   Activate the emergency plan for reporting injuries
    c)   Notify the person's family about the situation
    d)   Leave the area immediately

8)   Disasters can be broadly termed as _____ types.
    a)   2   b)   4
    c)   5   d)   3

9) Maps that form an important part of a disaster manager's resources include:
   a) Topographic maps
   b) land-use maps
   c) Vegetation maps
   d) All of the above

10) People live in dangerous areas for what reasons?
    a) For the views
    b) Because of cheap land
    c) Because the land is fertile
    d) For all of these reasons

11) What type of disaster is most prominent in India?
    a) Flood
    b) Draught
    c) Cyclone
    d) Earthquake

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

13) Do not build houses on _____.
    a) Soft soils
    b) Hard soils
    c) Rocky soils
    d) Fertile soils

14) The trembling of the earth's crust is known as _____.
    a) Volcano
    b) Earthquake
    c) Flood
    d) Cyclone

Q.2 A) Answer the following. (Any Four)   **08**
   1) Vegetation index
   2) Drought
   3) Cyclone
   4) Acid rain
   5) Desertification

B) Write Notes. (Any Two)   **06**
   1) Volcanic prone zone of India.
   2) Effect of land slide.
   3) Soil erosion management.

Q.3 A) Answer the following. (Any Two)   **08**
   1) Data acquisition techniques in GIS.
   2) Variables of identification of nuclear disaster.
   3) Causes and effect of earthquake.

B) Answer the following. (Any One)   **06**
   1) Global warming effect and GIS.
   2) Industrial disaster causes.

Q.4 A) Answer the following. (Any Two)   **10**
   1) Factors and variables of disaster.
   2) Example of earth quake.
   3) Effects of chemical disaster.

B) Answer the following. (Any One)   **04**
   1) Disaster and sea level rise.
   2) GIS and Disaster.

Q.5 Answer the following. (Any Two)   **14**
   1) Disaster process and management.
   2) Risk prone assessment of disaster.
   3) Marine disaster and coastal zone management.

Seat No.

M.Sc. (Semester - IV) (CBCS) Examination Oct/Nov-2019
Geoinformatics
WEB GIS

Day & Date: Friday, 08-11-2019   Max. Marks: 70
Time: 03:00 PM To 05:30 PM

Instructions: 1) All questions are compulsory.
　　　　　　　 2) Figures to the right indicate full marks.
　　　　　　　 3) Draw neat and labeled diagrams wherever necessary.

Q.1 **Fill in the blanks by choosing correct alternatives given below.** **14**

1) GIS deals with _____ kind of data.
　a) Numerical data　　　　　　　b) Binary data
　c) Spatial data　　　　　　　　d) Complex data

2) ITS technology used in Public Transport _____.
　a) Public Transport Travel Information
　b) Electronic Toll Collection System
　c) Vehicle actuated signals
　d) Pelican Signals

3) _____ is the address size of IPv6.
　a) 32 bit　　　　　　　　　　　b) 64 bit
　c) 128 bit　　　　　　　　　　 d) 256 bit

4) According to Esri " _____ is types of distributed information system,
　comprising at least a server and a client, where the server is a GIS server
　and the client is a web browser, desktop application, or mobile application.
　a) Web　　　　　　　　　　　　b) GIS
　c) Internet　　　　　　　　　　d) Web GIS

5) GPS can be used for tracking of urban bus movement.
　a) True　　　　　　　　　　　　b) False

6) HTML is used to create _____.
　a) Machine language program　　b) High level program
　c) Web page　　　　　　　　　 d) Web server

7) _____ describes the data contained in the data warehouse.
　a) Relational data　　　　　　　b) Operational data
　c) Metadata　　　　　　　　　 d) Informational data

8) XML is a _____ markup language.
　a) meta　　　　　　　　　　　　b) beta
　c) octa　　　　　　　　　　　　d) peta

9) Traffic Analysis zones are related to Municipality Wards.
　a) True　　　　　　　　　　　　b) False

10) _____ predicts future trends and behaviors, allowing business manager
　to make proactive, knowledge-driven decisions.
　a) Data warehousing　　　　　　b) Data mining
　c) Data marts　　　　　　　　　d) Metadata

11) Full form of HTML is _____.
   a) Hyper Text Markup Language
   b) Hyper Text Manipulation Language
   c) Hyper Text Managing Links
   d) Hyper Text Manipulating Links

12) If a computer on the network shares resources for to use, it is called ____.
   a) Server   b) Client
   c) Mainframe   d) none

13) Full form of URL is _____.
   a) Uniform Resource Link   b) Uniform Resource Locator
   c) Uniform Registered Link   d) Unified Resource Link

14) In internet terminology IP means _____.
   a) Internet Provider   b) Internet Protocol
   c) Internet Procedure   d) Internet Processor

Q.2 A) Answer the following questions. (Any Four)   **08**
   1) Network Environment means what?
   2) What is data sharing?
   3) What is a GIS?
   4) What is meant Internet?
   5) Define Web GIS.

B) Write Notes. (Any Two)   **06**
   1) What is Internet and discuss the advantages and disadvantage of internet?
   2) TCP
   3) Distributed Geographical Information Services.

Q.3 A) Answer the following questions. (Any Two)   **08**
   1) Fundamental of computer networking.
   2) What is Web GIS and Components of Web GIS?
   3) What is computer network?

B) Answer the following questions. (Any One)   **06**
   1) Network communication Model in brief.
   2) Internet GIS.

Q.4 A) Answer the following questions. (Any Two)   **10**
   1) What is Commercial Web mapping and explain its types.
   2) Discuss Geographical markup language and Characteristics of GML.
   3) Explain Mobile GIS in brief.

B) Answer the following questions. (Any One)   **04**
   1) IP
   2) E-Mail

Q.5 Answer the following questions. (Any Two)   **14**
   a) What is Web GIS? Explain the Application of Environmental Sciences Resource Management.
   b) What is Intelligence transportation System and explain ITS applications.
   c) What is the Data warehousing and explain its history and application.