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**B) Write True/False.****04**

- 1) Modern GIS technology uses analog type of information.
- 2) LANDSAT 1 is the examples of natural satellites?
- 3) Fields are geographic phenomena that occur everywhere in the study area.
- 4) A raster is a regular tessellation with square cells.

**Q.2 Answer the following. (Any Six).****12**

- a) Define Topology
- b) Importance of Scanner
- c) What is RAM
- d) Open Sources of GIS
- e) Define GIS
- f) What is Degitization?
- g) What is Node?
- h) What is map Scale?

**Q.3 Answer the following (Any three).****12**

- a) Universal Transverse Mercator
- b) Geometric Errors
- c) Geographic Projection System
- d) Conical Projection

**Q.4 Answer the following (Any two).****12**

- a) Explain large scale and Small Scale with example.
- b) Write note
- c) Topological errors

**Q.5 Answer the following (Any two).****12**

- a) Components of GIS.
- b) Discuss in detail Importance of GIS.
- c) Write brief account on topological Connectivity.

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**M.Sc. (Semester - I) (New) (NEP CBCS) Examination: March/April-2024**

# GEOINFORMATICS

# PRINCIPLES OF REMOTE SENSING (2331102)

Day & Date: Monday, 13-05-2024

Max. Marks: 60

Time: 03:00 PM To 05:30 PM

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

**Q.1 A) Choose the correct alternative**

08

- 1) Wavelength ranges of visible spectrum is \_\_\_\_\_.  
a) 0.3 - 0.38                      b) 0.4 to 0.7  
c) 0.7 - 10                         d) 10 - 100
- 2) An Image can either be in analog \_\_\_\_\_.  
a) Hard copy                          b) Digital form  
c) Free form                          d) All of above
- 3) \_\_\_\_\_ refers to the relative density of objects in an image.  
a) Texture                            b) Pattern  
c) Shape                              d) None
- 4) GLONASS is global position system operated by \_\_\_\_\_ country.  
a) Russia                            b) Japan  
c) Europe                            d) U.S.A.
- 5) PSLV is the abbreviation for \_\_\_\_\_.  
a) Polar Space Launch Vehicle  
b) Polar Stationary Launch Vehicle  
c) Polar Satellite Launch Vehicle  
d) Polar Satellite Lift Vehicle
- 6) \_\_\_\_\_ refers to the relative brightness or colour of objects in an image.  
a) Texture                            b) Pattern  
c) Shape                              d) Tone
- 7) The distance between two successive crest or trough is called \_\_\_\_\_.  
a) Amplitude                        b) Frequency  
c) Wave number                    d) Wavelength
- 8) Geostationary satellites are ideal for \_\_\_\_\_.  
a) Land mapping                    b) Meteorology  
c) Communication                  d) Both b and c

**B) Fill in the blanks OR write true / False.**

04

- Remote sensing is a technique of collection of information about an object, without a physical contact.
  - True
  - False
- Electromagnetic waves are not gamma rays, microwaves, visible light.
  - True
  - False
- MODIS stands for \_\_\_\_\_.
- Example of active sensor in remote sensing is laser scanner.
  - True
  - False

**Q.2 Answer the following. (Any Six)**

12

- Define Parallax.
- What is sensors?
- Short note on Absorption.
- Atmospheric windows.
- Types of Scattering.
- IRS data.
- Define photogrammetry.
- Components of remote sensing.

**Q.3 Answer the following. (Any Three)**

12

- Spectral reflectance of vegetation, soil and water.
- Types of remote sensing.
- Platforms and its types.
- History and development of remote sensing.

**Q.4 Answer the following. (Any Two)**

12

- Give various applications of satellite data products in different remote sensing studies.
- Explain in detail EMR?
- Write different types of resolutions and their significance.

**Q.5 Answer the following. (Any Two)**

12

- Image interpretation.
- Explain the principles of Satellite Motion. What do you mean by Geosynchronous and geostationary orbit?
- False colour composite.

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**M.Sc. (Semester - I) (New) (NEP CBCS) Examination: March/April-2024**  
**GEOINFORMATICS**  
**IT for Geoinformatics (2331109)**

Day & Date: Wednesday, 15-05-2024  
 Time: 03:00 PM To 05:30 PM

Max. Marks: 60

**Instructions:** 1) All Questions are compulsory  
 2) Figure to right indicate full marks.

**Q.1 A) Choose the correct alternative** **08**

- 1) GUI stands for \_\_\_\_\_.  
 a) Graphical user interface      b) Multiused interface  
 c) Single user interface      d) Geographical user interface
- 2) The MS-operating system is originally developed by Microsoft for \_\_\_\_\_.  
 a) IBM      b) IAM  
 c) ICM      d) IRS
- 3) \_\_\_\_\_ is not a logical data base structure.  
 a) Tree      b) Relational  
 c) Network      d) Chain
- 4) \_\_\_\_\_ is the part of the computer used for calculating and comparing.  
 a) Disc unit      b) Control unit  
 c) ALU      d) Modem
- 5) ROM stands for \_\_\_\_\_.  
 a) Read only memory      b) Record only memory  
 c) Re -readable memory      d) Re - Readable only memory
- 6) MS-DOS was first introduced by Microsoft in August \_\_\_\_\_.  
 a) 1982      b) 1980  
 c) 1981      d) 1983
- 7) The only language which the computer understands is \_\_\_\_\_.  
 a) assembly language      b) binary language  
 c) basic      d) c language
- 8) Which one of the following is NOT a computer language?  
 a) MS-Excel      b) c+  
 c) java      d) C++

**B) Fill in the blanks OR True /False.** **04**

- 1) The basic goal of computer process is to convert data into \_\_\_\_\_.
- 2) Ctrl +p keys used for open a \_\_\_\_\_ command.
- 3) CPU controls only input data of computer. (True/False)
- 4) GIF stands for \_\_\_\_\_.

- Q.2 Answer the following. (Any Six)** **12**
- a) What is Natural Joint?
  - b) List of input Device of Computer.
  - c) What is hardware?
  - d) What do mean by many to many?
  - e) Normalization data.
  - f) Keyboard
  - g) Give any two uses of internet.
  - h) Uses of mouse.
- Q.3 Answer the following. (Any Three)** **12**
- a) Give difference between Hierarchical and Relational models.
  - b) Explain types of operating system and advantages of windows operating System.
  - c) RDBMS and its component.
  - d) What do you mean by SQL? Brief note on process of SQL?
- Q.4 Answer the following. (Any Two)** **12**
- a) How computer used for geological mapping?
  - b) Describe operation tables.
  - c) Database security.
- Q.5 Write in brief. (Any Two)** **12**
- a) Brief discuss about Generation of computers.
  - b) Explain the role of Administrator in DBMS.
  - c) What is LULC? In which type of computer application LULC studies are used.

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**M.Sc. (Semester - I) (New) (NEP CBCS) Examination: March/April-2024****GEOINFORMATICS****Research Methodology (2331103)**

Day &amp; Date: Friday, 17-05-2024

Max. Marks: 60

Time: 03:00 PM To 05:30 PM

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

**Q.1 A) Choose correct alternative.****08**

- 1) Who was the author of the book named "Methods in Social Research"?
  - a) Kerlinger
  - b) CR Kothari
  - c) Goode and Hatt
  - d) Wilkinson
- 2) What is the name of the conceptual framework in which the research is carried out?
  - a) Research hypothesis
  - b) Synopsis of Research
  - c) Research paradigm
  - d) Research design
- 3) The first step of research is \_\_\_\_\_.
  - a) Selecting a problem
  - b) Finding a problem
  - c) Identifying a problem
  - d) Searching a problem
- 4) Research is \_\_\_\_\_.
  - a) Searching again and again
  - b) Finding a solution to any problem
  - c) Working in a scientific way to search for the truth of any problem
  - d) None of the above
- 5) A researcher is interested in studying the prospects of a particular political party in an urban area. So, what tool should he prefer for the study?
  - a) Rating Scale
  - b) Questionnaire
  - c) Interview
  - d) Schedule
- 6) How to judge the depth of any research? \_\_\_\_\_.
  - a) By research title.
  - b) By total expenditure on research.
  - c) By research objectives.
  - d) By research duration.
- 7) Fundamental Research is otherwise called \_\_\_\_\_.
  - a) Action Research
  - b) Survey
  - c) Pilot study
  - d) Pure Research
- 8) Good Research is always \_\_\_\_\_.
  - a) Slow
  - b) Fast
  - c) Narrow
  - d) Systematic

**B) Fill in the blanks OR Write True/False.****04**

- 1) \_\_\_\_\_ is an essential criterion of scientific study.
- 2) Research operated to find an answer for an immediate issue is action research. (True/ False).
- 3) Census Report is an example of primary data. (True/ False).
- 4) The "Sociogram" technique is used to study human relations (True/ False).

**Q.2 Answer the following. (Any Six)****12**

- a) Define keywords and its types.
- b) Write short note on SPSS.
- c) Write a note qualitative research type.
- d) Write a short note on coral draw.
- e) Write a note on SCOPUS index.
- f) Meta search engine.
- g) What is search engine?
- h) Why literature review is necessary for research. Explain in short.

**Q.3 Answer the following. (Any Three)****12**

- a) Write a note on deference between ISSN and ISBN.
- b) Explain questionnaires and interview method of data collection.
- c) Write short note on types of publications.
- d) Write a note on application of Computers in research.

**Q.4 Answer the following. (Any Two)****12**

- a) Write a brief account on applications of MS-power point in research work presentations.
- b) Discuss in brief research ethics and plagiarism.
- c) Describe fully the techniques of defining a research problem.

**Q.5 Answer the following. (Any Two)****12**

- a) Give an account on criteria of quality research.
- b) Write a note on descriptive, analytical, quantitative types of research.
- c) Give brief account on how MS-excel help for research data analysis.



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- Q.2 Answer the following. (Any Six) 12**
- a) Define digital image.
  - b) Density slicing.
  - c) Image rectification
  - d) Define Image fusion.
  - e) Panoramic distortion
  - f) Altitude variance
  - g) Spatial enhancement
  - h) Spheroid
- Q.3 Answer the following (Any Three) 12**
- a) Linear contrast stretch.
  - b) Radiometric correction.
  - c) Histogram equalization.
  - d) Unsupervised classification
- Q.4 Answer the following (Any Two) 12**
- a) Supervised classification.
  - b) Application of maximum likelihood method for classifying pixels based on probability.
  - c) Error matrix
- Q.5 Answer the following (Any Two) 12**
- a) Digital image data format.
  - b) High frequency and low frequency filter.
  - c) Key characteristics of training areas

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**M.Sc. (Semester - II) (New) (NEP CBCS) Examination: March/April-2024**  
**GEOINFORMATICS**

**Spatial Modelling & Analysis (2331202)**

Day & Date: Saturday, 11-05-2024  
 Time: 11:00 AM To 01:30 PM

Max. Marks: 60

**Instructions:** 1) All questions are compulsory.  
 2) Figure to right indicate full marks.

**Q.1 A) Multiple Choice Questions.**

**08**

- 1) Which of the following is a Raster data format?
 

a) Shapefile	b) GeoTIFF
c) GeoJSON	d) KML
- 2) Which spatial analysis operator is used to calculate the average value of neighboring cells?
 

a) Local function	b) Focal function
c) Zonal function	d) Global function
- 3) What is the primary function of Kriging interpolation?
 

a) To estimate values at unsampled locations based on the weighted average of nearby values
b) To calculate the shortest path between two points in a network
c) To perform overlay analysis on raster datasets
d) To classify satellite imagery into land cover classes
- 4) What is the purpose of a Digital Elevation Model (DEM)?
 

a) To represent elevation values as a continuous surface
b) To classify land cover types within a study area
c) To measure distances between features on the ground
d) To analyze the frequency of occurrence of spatial phenomena
- 5) \_\_\_\_\_ are used to move people, transport goods, communicate information and control the flow of matter and energy.
 

a) Topology	b) Geometry
c) Networks	d) Spatial
- 6) The first uses of map based analysis in Dr. John Snow of London in \_\_\_\_\_.
 

a) 1854	b) 1754
c) 1984	d) 1870
- 7) In the world of GIS, another term for the property of connectivity is \_\_\_\_\_.
 

a) Topology	b) Proximity
c) Boolean	d) Fuzzy
- 8) \_\_\_\_\_ is used to identify a zone of influence of fixed width draw around any map feature.
 

a) Clipping	b) Intersecting
c) Union	d) Buffering

**B) Fill in the Blanks or True/False** **04**

- 1) A buffer operation in GIS creates a zone around a feature based on a specified distance. (True/False)
- 2) An aspect map represents the slope direction on a terrain surface. (True/False)
- 3) Zonal statistics calculate summary statistics for areas defined by zones or regions. (True/False)
- 4) DEM and TIN are raster data models representing terrain surfaces. (True/False)

**Q.2 Answer the following. (Any Six)** **12**

- a) Union
- b) Intersect
- c) Focal analysis
- d) Slope analysis
- e) Topology
- f) DTM
- g) WGS
- h) Zonal analysis

**Q.3 Answer the following. (Any Three)** **12**

- a) Explain the difference between discrete and continuous raster data models.
- b) Describe the Geometric and Logical processes.
- c) Discuss the applications of spatial analysis in environmental management.
- d) Explain the concept of reclassification and provide an example.

**Q.4 Answer the following. (Any Two)** **12**

- a) Discuss the role of GIS in hydrological analysis using Raster Data.
- b) Explain the principles of network analysis and its significance in urban planning.
- c) Describe the Spatial Analysis Operators and Functions.

**Q.5 Answer the following. (Any Two)** **12**

- a) Discuss the advantages and disadvantages of Spatial Models.
- b) Explain the concept of spatial interpolation and compare different interpolation techniques.
- c) Describe the process of surface analysis and provide an example of its application.

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**M.Sc. (Semester - II) (New) (NEP CBCS) Examination: March/April-2024**  
**GEOINFORMATICS**  
**Introduction to Cartography (2331209)**

Day & Date: Tuesday, 14-05-2024  
 Time: 11:00 AM To 01:30 PM

Max. Marks: 60

**Instructions:** 1) All questions are compulsory.  
 2) Figure to right indicate full marks.

**Q.1 A) Choose the correct alternative.****08**

- 1) All maps use \_\_\_\_\_ to stand for element of reality.
  - a) Scale
  - b) Projection
  - c) Signs
  - d) Datum
- 2) The head quarter of survey of India situated in \_\_\_\_\_.
  - a) Delhi
  - b) Hyderabad
  - c) Dehradun
  - d) Jaipur
- 3) Polyconic projection was developed by \_\_\_\_\_.
  - a) Prof. Ferdinand Hassler
  - b) Bonne's
  - c) W. M. Devis
  - d) L. C. King
- 4) WGS stand for \_\_\_\_\_.
  - a) World Group System
  - b) World Geodetic System
  - c) World Gaye System
  - d) World General System
- 5) \_\_\_\_\_ type of projection is used for India.
  - a) Polyconical
  - b) Cylindrical
  - c) Azimuth
  - d) None of the above
- 6) The \_\_\_\_\_ means the angular distance from the center of the Earth North or South of the equator.
  - a) Latitude
  - b) Longitude
  - c) Prime meridian
  - d) None of the above
- 7) Scale are sometimes represented on maps by a statement is known as \_\_\_\_\_.
  - a) Representative Fraction (R. F.)
  - b) Graphical scale
  - c) Simple statement
  - d) A & B both
- 8) Plain Scale is also known as \_\_\_\_\_.
  - a) Natural Scale
  - b) Numerical Scale
  - c) International Scale
  - d) Graphical Scale

**B) Write True/ False.****04**

- 1) The Tropic of Cancer is a meridian.
- 2) The southernmost point in the world is Antarctica.
- 3) Lines of latitude are measured north and south of the equator.
- 4) Zero degrees latitude divides the world into northern and southern hemisphere.

- Q.2 Answer the following. (Any six) 12**
- a) Define Map Projection.
  - b) Define map Scale.
  - c) Define datum.
  - d) Define contour.
  - e) Prime meridian
  - f) Saddle
  - g) Define toposheet.
  - h) Spheroid
- Q.3 Answer the following. (Any Three) 12**
- a) Map Design
  - b) Universe Transvers Mercator
  - d) Basics of geodesy
  - e) Conical Projection
- Q.4 Answer the following. (Any Two) 12**
- a) Single Standard Projection
  - b) Projected Co-ordinate system
  - c) Importance of Sign and Symbols
- Q.5 Answer the following. (Any Two) 12**
- a) Nature of cartography
  - b) History of Cartography
  - c) Cultural maps

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**M.Sc. (Semester - II) (Old) (CBCS) Examination: March/April-2024  
GEOINFORMATICS**

**Digital Image Processing (MSC17201)**

Day & Date: Thursday, 09-05-2024  
Time: 11:00 AM To 02:00 PM

Max. Marks: 80

- Instructions:** 1) Q. Nos. 1 and. 2 are compulsory.  
2) Attempt any three questions from Q. No. 3 to Q. No. 7  
3) Figure to right indicate full marks.

**Q.1 A) Choose the correct alternative. 10**

- 1) \_\_\_\_\_ is displayed by placing the infrared, red, green in the red, green and blue frame buffer memory.  
a) True Colour Composition (TCC)  
b) False Colour Composition (FCC)  
c) NDVI  
d) None of above
- 2) \_\_\_\_\_ error caused when the ground swath is not normal and is skewed due to the forward motion of the platform during the time of scan.  
a) Platform velocity                      b) Earth rotation  
c) Mirror scan velocity                  d) Scan skew
- 3) For geometric rectification of image from a map or from another registered image, selection of \_\_\_\_\_ is the prime step.  
a) Gravity Control Points              b) General Control Points  
c) Ground Control Points              d) Gross Control Points
- 4) Enhancement techniques are \_\_\_\_\_.  
a) Contrast stretch                      b) Density slicing  
c) Edge enhancement                  d) All of the above
- 5) Training stage, classification stage, output stage are the stages of \_\_\_\_\_.  
a) Image rectification                  b) Unsupervised classification  
c) Supervised classification          d) Image enhancement
- 6) When the values in the original image are expanded uniformly to fill the total range of the output device, the transformation is called \_\_\_\_\_.  
a) Non- linear contrast stretching  
b) linear contrast stretching  
c) Uniform contrast stretching  
d) all of the above
- 7) Associated with each pixels a number known as \_\_\_\_\_.  
a) Digital number                      b) Brightness value  
c) a and b both                          d) Band
- 8) In edge enhancement, \_\_\_\_\_ enhance linear features like river with a specific orientation (direction).  
a) Directional filter                      b) non directional filter  
c) Distance filter                          d) all of these

- 9) \_\_\_\_\_ classifiers do not utilize training data as the basis for classification.
- a) Unsupervised                      b) Supervised
- c) Error Matrix                      d) None of these
- 10) \_\_\_\_\_ is the pictorial representation of the real scene.
- a) Camera                      b) Photo
- c) Digital Image                      d) Map

**B) Fill in the blanks or True / False.**

06

- 1) ERDAS stands for \_\_\_\_\_
- 2) Training sites are not used in \_\_\_\_\_ Classification.
- 3) Low pass filters are also called \_\_\_\_\_ filters.
- 4) \_\_\_\_\_ are well defined points on the surface of the earth whose coordinates can be estimated easily on a map as well as on the image.
- 5) When the values in the original image are expanded uniformly to fill the total range of the output device, the transformation is called linear contrast stretching.
  - a) False
  - b) True
- 6) Gamma values less than one increases contrast in darker areas and decreases the contrast in light areas.
  - a) False
  - b) True

**Q.2 Answer the following**

16

- Density slicing
- Geometric corrections
- Contrast enhancement
- Difference between supervised and unsupervised classification

**Q.3 Answer the following**

16

- a) Discuss the importance of image Enhancement? Explain the image enhancement in short.
- b) Band Combination

**Q.4 Answer the following**

16

- Discuss in detail Maximum likelihood classifier.
- Define histogram and explain histogram equalization.

**Q.5 Answer the following**

16

- Write brief note on Error matrix.
- Explain sources of radiometric error and their correction.

**Q.6 Answer the following**

16

- Define texture and explain texture classification and their types.
- Write note on hybrid classification.

**Q.7 Answer the following**

16

- Explain in details Image Classification Using Fuzzy Logic.
- Edge enhancement



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Day & Date: Saturday, 11-05-2024  
Time: 11:00 AM To 02:00 PM

Max. Marks: 80

**Instructions:** 1) Q. Nos. 1 and. 2 are compulsory.  
2) Attempt any three questions from Q. No. 3 to Q. No. 7  
3) Figure to right indicate full marks.

## 10

- 1) Landsat program began in \_\_\_\_\_.  
a) 1972  
b) 2003  
c) 1973  
d) 1937
- 2) JERS Stands for \_\_\_\_\_.  
a) Cryomagnetic remote sensing  
b) Japanese earth radar system  
c) Japanese earth resource satellite  
d) None of these
- 3) \_\_\_\_\_ is thermal band in Landsat 7 ETM+ data.  
a) One band  
b) Two band  
c) Six band  
d) Four band
- 4) Polygon in Polygon is \_\_\_\_\_.  
a) Overlay operation  
b) Single layer operation  
c) Network operation  
d) Multilayer operation
- 5) Which one of the following is NOT an overlay analysis?  
a) Focal  
b) Intersection  
c) Union  
d) Differences
- 6) Successful spatial analysis needs \_\_\_\_\_.  
a) Appropriate software  
b) Competent user  
c) Appropriate hardware  
d) All of the above
- 7) \_\_\_\_\_ is not visual interpretation key?  
a) Association  
b) Hue  
c) Pattern  
d) Shallow
- 8) \_\_\_\_\_ satellite gives a feature height of upto +/- 15 cm?  
a) Iconas  
b) IRS-LISS  
c) RADAR  
d) LIDAR
- 9) \_\_\_\_\_ sensor is used built-up land mapping?  
a) LISS III  
b) MSS  
c) SPOT  
d) All of these
- 10) The compliment operation in fuzzy set theory is equal to the \_\_\_\_\_ operation in Boolean algebra.  
a) AND  
b) OR  
c) NOT  
d) All

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

- 1) \_\_\_\_\_ approximates the surface with a series of non overlapping triangles.
- 2) Network connectivity can be examined by constructing a matrix set called \_\_\_\_\_.
- 3) \_\_\_\_\_ index is defined as the ratio of the actual number of circuits to the maximum number of circuits in the network.
- 4) IDW is a tool of \_\_\_\_\_ analysis.
- 5) Smaller NNI value represented by \_\_\_\_\_.
- 6) Point entity belongs to \_\_\_\_\_.

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

- a) Explain the types of spatial model?
- b) What are Local operations?
- c) What are focal operations?
- d) Explain Vectorization.

**Q.3 Answer the following. 08**

- a) What is C3 matrix? 08
- b) Explain Overlay operation. 08

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

- a) Explain Network Accessibility in detail. 08
- b) What is Predictive Model? 08

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

- a) Describe Network Structure? 08
- b) Describe grid based operations. 08

**Q.6 Answer the following. 10**

- a) What are multiple layer operations? Describe the difference between Union and Intersection operations. 10
- b) What is Global Function? 06

**Q.7 Answer the following. 10**

- a) Write the difference between Cluster and Random distribution Role Model. 10
- b) Give brief overview of any one case study on Water Resource mapping. 06

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## Advanced Techniques in GIS (MSC17206)

Max. Marks: 80

**Instructions:** 1) Q. Nos. 1 and. 2 are compulsory.  
2) Attempt any three questions from Q. No. 3 to Q. No. 7  
3) Figure to right indicate full marks.

**Q.1 A) Choose the correct alternatives. 10**

- 1) \_\_\_\_\_ represents the steepness and orientation of a terrain surface.
  - a) Variance Filter
  - b) Slope and Aspect
  - c) Relief
  - d) Hill Shading
- 2) \_\_\_\_\_ methods are used to estimate values at unknown locations within a set of known data points.
  - a) Extrapolation
  - b) Interpolation
  - c) Regression
  - d) Smoothing
- 3) \_\_\_\_\_ are the spatial mining tasks in Knowledge Discovery in Spatial Databases.
  - a) Spatial Classification, Spatial Interpolation, Spatial Regression
  - b) Spatial Clustering, Spatial Indexing, Spatial Querying
  - c) Spatial Classification, Spatial Clustering, Association Rules
  - d) Spatial Interpolation, Spatial Regression, Spatial Visualization
- 4) Which of the following is NOT a common application of Location Based Services?
  - a) Navigation and mapping
  - b) Geotagging photos
  - c) Finding nearby restaurants or businesses
  - d) Monitoring heart rate during exercise
- 5) Acronym "OGC" stand for \_\_\_\_\_.
  - a) Open Geospatial Collaboration
  - b) Open Geospatial Consortium
  - c) Open Geographical Collaboration
  - d) Open Geographical Consortium
- 6) \_\_\_\_\_ is the primary goal of the Open Geospatial Consortium?
  - a) To restrict access to geospatial data and services.
  - b) To create proprietary standards for geospatial technologies.
  - c) To ensure interoperability and seamless integration of geospatial data and services.
  - d) To promote competition among geospatial software vendors.
- 7) ANNs are commonly used for tasks such as \_\_\_\_\_.
  - a) Image recognition
  - b) Data classification
  - c) Speech synthesis
  - d) All of the above

- 8) Which spatial mining task focuses on grouping similar spatial objects together?
- a) Spatial Classification                      b) Spatial Indexing  
c) Spatial Clustering                          d) Spatial Regression
- 9) Which spatial mining task is used to discover associations or relationships among spatial objects?
- a) Spatial Classification                      b) Spatial Clustering  
c) Association Rules                          d) Spatial Querying
- 10) \_\_\_\_\_ technology is commonly used in Location Based Services to determine a user's location.
- a) Bluetooth  
b) Wi-Fi  
c) GPS (Global Positioning System)  
d) NFC (Near Field Communication)

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

- 1) TIN (Triangulated Irregular Network) is a type of grid-based elevation model.
- 2) Variance filter is a technique used to smooth elevation data by reducing high- frequency noise.
- 3) Enterprise Resource Planning (ERP) is a software system that integrates various business functions, such as finance, human resources, and inventory management, into a unified platform.
- 4) SAP ERP is an open-source ERP solution widely used in enterprises for managing their business processes.
- 5) The estimation of weights using the trade-off method involves assigning numerical values to different criteria or factors.
- 6) The ranking method is a technique used to assign weights to different criteria based on their relative importance.

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

- a) Write a short note on Ranking Method
- b) Location Based Services
- c) Keyhole Markup Language
- d) Web Map Services

**Q.3 Answer the following.**

- a) How does Triangulated Irregular Network (TIN) differ from other interpolation methods in GIS? **08**
- b) Describe the concepts of slope and aspect in GIS and their significance in Surface analysis. **08**

**Q.4 Answer the following.**

- a) What is the Open Geospatial Consortium (OGC) and how does it contribute to the development of GIS standards? **08**
- b) Describe the key features and applications of Geographic Markup Language (GML) in GIS. **08**

**Q.5 Answer the following.**

- a) What are the different types of problems encountered in spatial decision making? **08**
- b) Discuss the characteristics of spatial decision support systems (DSS). **08**

**Q.6 Answer the following**

- a) What are the commonly used techniques and algorithms for spatial data mining? **08**
- b) Explain the role of clustering in spatial data mining and its applications. **08**

**Q.7 Answer the following**

- a) Compare and contrast fuzzy logic and Boolean logic. **08**
- b) What is WEB GIS and how does it differ from traditional GIS? **08**

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Set P
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**M.Sc. (Semester - III) (New) (CBCS) Examination: March/April-2024**  
**GEOINFORMATICS**

**Advance Techniques in Remote Sensing (MSC017301)**

Day & Date: Friday, 10-05-2024

Max. Marks: 80

Time: 11:00 AM To 02:00 PM

- Instructions:** 1) Q.1 and 2 are compulsory.  
 2) Attempt any three questions from Q. 3 to 7.  
 3) Figures to the right indicate full marks.

**Q.1 A) Choose the correct alternative 10**

- 1) IRS-P5 was launched on \_\_\_\_\_.  
 a) May 5<sup>th</sup>, 2005                      b) October 17<sup>th</sup>, 2003  
 c) May 26<sup>th</sup>, 1999                      d) None of these
- 2) SAR stands for \_\_\_\_\_.  
 a) Signal aperture radar              b) Synthetic aperture radar  
 c) Sound aperture radar              d) None of these
- 3) The energy of particles of molecular matter in random motion is called \_\_\_\_\_.  
 a) Kinetic heat                          b) Emissivity  
 c) Black body                              d) None of these
- 4) 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
- 5) Digital Image Process is a collection of technique for manipulation of by \_\_\_\_\_ computer.  
 a) Radar                                  b) SLAR  
 c) Digital images                          d) All of these
- 6) First satellite of NASA was \_\_\_\_\_.  
 a) Sputnik 2                              b) Explorer 1  
 c) Sputnik 1                              d) Terra 1
- 7) The launch the first SAR satellite, Seasat in \_\_\_\_\_ a huge development has been achieved in technology, techniques and information retrieval algorithms.  
 a) 2008                                      b) 1998  
 c) 1968                                      d) 1978
- 8) \_\_\_\_\_ is defined as the angle between the radar beam and a perpendicular to the surface.  
 a) incidence angle                      b) geoids  
 c) look angle                              d) Azimuth angle

- 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) Swath width of sea WiFS is \_\_\_\_\_
- a) 714km
  - b) 2330km
  - c) 185km
  - d) 2801km

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

- 1) SAR stands for \_\_\_\_\_.
- 2) Remote sensing uses \_\_\_\_\_ of the following waves in its procedure.
- 3) In visible region, the R G B light is having a wave length range of \_\_\_\_\_.
- 4) \_\_\_\_\_ of the following field is used by the EM waves.
- 5) The \_\_\_\_\_ transform is an important image processing tool which is used to decompose an image into its sine and cosine components.
- 6) Polar orbiting satellites are generally placed at an altitude range of \_\_\_\_\_.

**Q.2 Write notes on.****16**

- a) Shuttle Imaging Radar -A (SIR- A)
- b) Radiometer
- c) Rain mapping RADAR
- d) Seasat

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

- a) Synthetic Aperture Radar
- b) RADAR operating principles

**Q.4 Explain in detail.****16**

- a) Terrain Properties of RADAR returns
- b) Wiens Displacement Law

**Q.5 Describe the following.****16**

- a) System properties of RADAR returns
- b) Shuttle Imaging Radar-C/X& Shuttle Imaging Radar- B

**Q.6 Write note on.****16**

- a) Relief Displacement
- b) Stereo parallax

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

- a) Forward Looking IR & Charge Coupled Device
- b) Thermal Infrared data collection

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**M.Sc. (Semester - III) (New) (CBCS) Examination: March/April-2024**  
**GEOINFORMATICS**  
**Web GIS (MSC017302)**

Day & Date: Monday, 13-05-2024  
Time: 11:00 AM To 02:00 PM

Max. Marks: 80

- Instructions:** 1) Q. Nos. 1 and. 2 are compulsory.  
2) Attempt any three questions from Q. No. 3 to Q. No. 7  
3) Figure to right indicate full marks.

**Q.1 A) Choose the correct alternative. 10**

- 1) In internet terminology IP means \_\_\_\_\_.  
a) Internet Provider                      b) Internet Protocol  
c) Internet Procedure                      d) Internet Processor
- 2) 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
- 3) If a computer on the network shares resources to use, it is called \_\_\_\_\_.  
a) Server                                      b) Client  
c) Mainframe                                      d) None of these
- 4) ITS technology used in \_\_\_\_\_.  
a) Public Transport Travel Information  
b) Electronic Toll Collection System  
c) Vehicle actuated signals  
d) Pelican Signals
- 5) \_\_\_\_\_ is the address size of IPV6.  
a) 32 bits                                      b) 64 bit  
c) 128 bit                                      d) 256 bit
- 6) XML is a \_\_\_\_\_ markup language.  
a) meta                                      b) beta  
c) octa                                      d) peta
- 7) WWW stands for: \_\_\_\_\_.  
a) World Wide Web                      b) World Wide Wildlife  
c) World Wide Women's                      d) None of these
- 8) The Father of the Web is \_\_\_\_\_.  
a) Roger Tomlinson                      b) Tropical  
c) Tim Berners-Lee                      d) None of these
- 9) GIS deals with \_\_\_\_\_ kind of data.  
a) Numerical data                      b) Binary data 5  
c) Spatial data                      d) Complex data



- 10) The physical connection between networked computing devices is an established method using either \_\_\_\_\_.  
a) Cable media or wireless media  
b) Web GIS  
c) Computer networking  
d) 3D analysis

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

- 1) Traffic Analysis zones are related to Municipality Wards. (True/False)
- 2) In TCP/IP Protocol Architecture, the second layer is the host-to-host or transport layer. (True/False)
- 3) The time horizon in Data warehouse is usually \_\_\_\_\_.
- 4) LAN stands for \_\_\_\_\_.
- 5) email is example of HTML. (True/False)
- 6) meta data is data and data. (True/False)

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

- a) What is meant Internet?
- b) Short not on Network Environment
- c) What is data sharing?
- d) Advantages of KML.

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

- a) Network Communication Models.
- b) Distributed Geographical Information Services.

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

- a) Write brief account on Internet GIS.
- b) Fundamentals of computer networking.

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

- a) What is Intelligence transportation System and explain its applications.
- b) What is Web GIS? Explain the application of Environmental Sciences Resource management.

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

- a) What is Commercial Web mapping and explain its types.
- b) Discuss Geographical markup language and Characteristics of GML.

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

- a) Explain in detail Data warehouse.
- b) Explain Mobile GIS in brief.

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Set **P**

**M.Sc. (Semester - III) (New) (CBCS) Examination: March/April – 2024**  
**GEOINFORMATICS**  
**Geomorphology (MSC017306)**

Day & Date: Wednesday, 15-05-2024  
 Time: 11:00 AM To 02:00 PM

Max. Marks: 80

**Instructions:** 1) Q.1 and 2 are compulsory.  
 2) Attempt any three questions from Q. 3 to 7.  
 3) Figures to the right indicate full marks.

**Q.1 A) Choose the correct alternative.****10**

- 1) \_\_\_\_\_ is defined as the science of description of various forms of the earth surface.
  - a) Geography
  - b) Geology
  - c) Geomorphology
  - d) Geoinformatics
- 2) \_\_\_\_\_ approach to geomorphology that emphasis that shaping of landforms in response to various climatic condition.
  - a) Physical
  - b) Geomorphic
  - c) Geological
  - d) Climatic
- 3) \_\_\_\_\_ are very weak rocks in humid climate.
  - a) Igneous
  - b) Metamorphic
  - c) Sedimentary
  - d) Limestone
- 4) Drainage \_\_\_\_\_ refers to the origin and development of streams through time.
  - a) pattern
  - b) system
  - c) shape
  - d) size
- 5) \_\_\_\_\_ are ridge like depositional features of glacial hills.
  - a) Cirques
  - b) Drumlins
  - c) Horn
  - d) Moraines
- 6) Ox-bow lakes are formed during which stage of the river cycle of erosion \_\_\_\_\_.
  - a) Initial stage
  - b) Youth stage
  - c) Mature stage
  - d) Old stage
- 7) Choose the correct statement when the river flows through meander:
  - a) At the inner side of the meander the velocity of the river is slow
  - b) At the outer side of the meander the velocity of the river is more
  - c) At the inner and up-steam side of the meander the velocity of the river is more
  - d) Both (a) and (b) are correct

- 8) Choose the correct statement:
- a) The inner and up-stream side of the meander is called 'slip off slope.
  - b) The outer and downstream side of the meander is called under cut side.
  - c) The inner and up-stream side is called 'under cut side and the outer and downstream side is called 'sip off slope of the meander.
  - d) Both (a) and (b) are correct
- 9) A thin deposit of river-borne sediments with an outward slopping side is formed on the: \_\_\_\_.
- a) Slip off slope
  - b) Under cut side
  - c) Mid of the meander
  - d) Both (a) and (b)
- 10) Which term may be used for the abandoned meanders which remain filled with stagnant water \_\_\_\_.
- a) Horse-shoe lakes
  - b) Ox-bow lakes
  - c) Cut-off lakes
  - d) All the above

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

- 1) The breaking of the transported material themselves due to mutual collision is known as \_\_\_\_.
- 2) In homogeneous and flat-lying strata \_\_\_\_ type of drainage pattern will be developed.
- 3) Aeolian topography is created by the geological action of \_\_\_\_.
- 4) \_\_\_\_ instrument is used to measure the wind velocity.
- 5) A crescent-shaped dune with two tapering arms is known as Moraine. (True/ False).
- 6) Glaciers are formed by compaction and recrystallisation of snow. (True/ False).

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

- a) Explain fundamental concept of Geomorphology.
- b) Describe Types of Landslides.
- c) Explain effect of climate on landforms.
- d) Write a note on plate tectonic theory.

**Q.3 Answer the following. (8+8)****16**

- a) Explain in detail various types of weathering.
- b) Describe application of geomorphology in disaster management.

**Q.4 Answer the following. (8+8)****16**

- a) Describe various types of drainage pattern with neat labelled diagrams.
- b) Explain in detail erosional features associated with River.

**Q.5 Answer the following. (8+8)****16**

- a) Explain in brief Devis cycle of erosion.
- b) Explain in detail depositional features associated with wind.

**Q.6 Answer the following. (8+8)****16**

- a) Explain in detail Strahler's method of stream ordering with neat labeled diagrams.
- b) Explain in detail erosional features associated with Glaciers.

**Q.7 Answer the following. (8+8)****16**

- a) Explain in detail continental drift theory.
- b) Describe in detail soil profile with neat labelled diagrams.

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Set **P**

**M.Sc. (Semester - IV) (New) (CBCS) Examination: March/April-2024**  
**GEOINFORMATICS**  
**Geoinformatics Approach for Natural Resource Management**  
**(MSC017401)**

Day & Date: Thursday, 09-05-2024  
 Time: 03:00 PM To 06:00 PM

Max. Marks: 80

- Instructions:** 1) Question no. 1 and 2 are compulsory.  
 2) Attempt any three questions from Q. No. 3 to Q. No. 7.  
 3) Figure to right indicate full marks.

**Q.1 A) Choose the correct alternative. 10**

- 1) What is one of the key applications of remote sensing and GIS in forest management?
  - a) Assessing wildlife populations
  - b) Monitoring tree growth rates
  - c) Determining soil composition
  - d) Identifying Forest cover changes
- 2) In ocean colour mapping remote sensing and GIS is used for \_\_\_\_\_.
  - a) Coral reef monitoring
  - b) Weather forecasting
  - c) Highway construction
  - d) Agricultural crop yield estimation
- 3) MODIS stands for \_\_\_\_\_.
  - a) Morphed-image Revolving Spectroradiometer
  - b) Multi-Image Resolution Spectroradiometer
  - c) Multiple Optical Resolution Spectroradiometer
  - d) Moderate Resolution imaging Spectroradiometer
- 4) A Pedon is the smallest body of one kind of \_\_\_\_\_ that is large enough to represent the nature and arrangement of horizons and the variability in the other properties.
 

a) water	b) forest
c) soil	d) ocean
- 5) \_\_\_\_\_ is the process of creating and implementing plans, programs, and projects to sustain and increase watershed functions that affect the plants, animal and human communities inside watershed boundary.
 

a) Water budget	b) Soil conservation
c) Watershed management	d) Watershed planning
- 6) Iron oxide in a sandy loam soil decreases reflectance in \_\_\_\_\_ portion.
 

a) Red	b) Blue
c) Green	d) near-infrared
- 7) \_\_\_\_\_ is the primary application of remote sensing and GIS in mapping potential fishing zones.
  - a) Monitoring marine pollution
  - b) Assessing coral reef health
  - c) Identifying optimal fishing grounds
  - d) Tracking marine mammal migration

- 8) \_\_\_\_\_ factors primarily determine the distribution of marine organisms in an ecosystem.
  - a) Temperature
  - b) Salinity
  - c) Oxygen levels
  - d) All of the above
- 9) \_\_\_\_\_ primary purpose of ocean colour mapping.
  - a) Monitoring marine pollution
  - b) Identifying underwater topography
  - c) Tracking migratory patterns of marine species
  - d) Assessing sea surface temperature
- 10) Physiographic soil mapping is primarily based on the analysis of \_\_\_\_\_.
  - a) Vegetation patterns
  - b) Topographic features
  - c) Weather patterns
  - d) Geological formations

**B) Fill in blanks / (True/False)**

**06**

- 1) In Landsat 8 \_\_\_\_\_ band is commonly used for vegetation analysis.
- 2) \_\_\_\_\_ methods are commonly used for mapping salinity and waterlogged areas.
- 3) Wildlife habitat suitability analysis is a process that uses GIS to determine the most suitable habitats for different species based on their geological requirements.
  - a) True
  - b) False
- 4) Stratified random sampling is a commonly used technique in forest sampling, where the forest area is divided into distinct strata based on specific characteristics.
  - a) True
  - b) False
- 5) SDI stands for \_\_\_\_\_.
- 6) Thermal infrared data collected by EO satellites are used to accurately monitor temperatures at a global scale and over extended time scales.
  - a) True
  - b) False

**Q.2 Answer the following.**

**16**

- a) Fishery potential zone mapping.
- b) Ocean colour mapping.
- c) Characteristics of physiographic soil.
- d) What are the main factors that influence marine ecosystems?

**Q.3 Answer the following.**

- a) What are the data requirements for conducting wildlife habitat suitability analysis in GIS?
- b) How does climate change affect water resources?

**08**

**08**

**Q.4 Answer the following.**

- a) Describe in details types of soils.
- b) Explain details sea surface temperature.

**08**

**08**

**Q.5 Answer the following.**

- a) Explain the concept of water balance and how it is maintained in the hydrological cycle.
- b) What are the applications of spatial analysis and modeling techniques in forest management.

**08**

**08**

**Q.6 Answer the following.**

- |  |           |
|--|-----------|
| a) Write a note on NDWI and NDVI indices.  | <b>08</b> |
| b) Explain in brief soil moisture mapping. | <b>08</b> |

**Q.7 Answer the following.**

- |  |           |
|--|-----------|
| a) Describe the role of LiDAR (Light Detection and Ranging) technology in forest classification and mapping. | <b>08</b> |
| b) How can GIS and remote sensing be utilized for mapping salinity and waterlogged areas in an ecosystem?    | <b>08</b> |

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## Application of Rs and GIS in Disaster Management (MSC017402)

Max. Marks: 80

**Instructions:** 1) Q. Nos. 1 and. 2 are compulsory.  
2) Attempt any three questions from Q. No. 3 to Q. No. 7  
3) Figure to right indicate full marks.

**10**

- 1) Atomic Absorption Spectroscopy is used to detect \_\_\_\_\_.  
a) Heavy metals  
b) Particle Size  
c) Dissolved gases  
d) Dissolved organic compounds
- 2) The Noise created at the launching of space rocket measured around is \_\_\_\_\_.  
a) 120db  
b) 150db  
c) 180db  
d) 240db
- 3) Minamata disease causes due to the over exposure of \_\_\_\_\_.  
a) Inorganic mercury  
b) Compound Mercury  
c) Phenyl Mercury  
d) Methyl Mercury
- 4) Bhuj Earthquake took place in \_\_\_\_\_.  
a) 2000  
b) 2002  
c) 2001  
d) 2003
- 5) Sea water intrusion may cause due to \_\_\_\_\_.  
a) Pollution of water  
b) Mixing of factory waste into sea  
c) Over rainfall in area  
d) Over exploitation from ground water
- 6) Where is the hole in the Ozone Layer?  
a) Artica  
b) America  
c) Antarctica  
d) Africa
- 7) \_\_\_\_\_ only confirmed active volcano in South Asia.  
a) Sant merry's Island  
b) Lakshadweep islands  
c) Sindudurge Island  
d) Barren Island
- 8) Fukushima Daiichi nuclear disaster took place in \_\_\_\_\_.  
a) Japan  
b) China  
c) Korea  
d) India
- 9) Most of the earthquakes in world take place along \_\_\_\_\_.  
a) Himalayan Mountains  
b) Mid Ocean ridges  
c) Alpine mountains  
d) Coastal Zones of America
- 10) Desertification of land can be easily detected using \_\_\_\_\_ Resolution.  
a) Spectral  
b) Radiometric  
c) Temporal  
d) None of the above



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

- 1) \_\_\_\_\_ Satellite will help in identification of cyclone movement.
- 2) Large-scale circulation of winds around a central region of high atmospheric pressure, clockwise in the Northern Hemisphere, Counter clockwise in the Southern Hemisphere is \_\_\_\_\_.
- 3) CO<sub>2</sub> is the green house gas. (True/False)
- 4) The Tropical Cyclones of hurricane force in the western North Pacific region are known as \_\_\_\_\_.
- 5) Debris flow is the term related to \_\_\_\_\_.
- 6) Glacier melting is major factor responsible for Sea Level Change. (True/False).

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

- a) Vegetation index
- b) Drought
- c) Cyclone
- d) Acid rain

**Q.3 Answer the following.**

- a) Explain in detail Major disasters in India with example.
- b) Describe volcanic zones of India.

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

- a) Describe GIS case studies for earthquake.
- b) Explain the short term and long term effects of desertification.

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

- a) Utilization of GIS techniques in
- b) GIS case studies for landslide management and mitigation.

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

- a) Explain the effects and causes of Industrial and mining disaster.
- b) Explain in detail Cyclone its Origin & types. Write a note on effects on land and sea.

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

- a) Oil spill and chemical pollution in Marine disaster.
- b) Describe Topography & land use in flooding.

**08****08**

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## Applications of Global Positioning System (MSC017403)

Max. Marks: 80

**Instructions:** 1) Q. Nos. 1 and. 2 are compulsory.  
2) Attempt any three questions from Q. No. 3 to Q. No. 7  
3) Figure to right indicate full marks.

**Q.1 A) Choose the correct alternatives. 10**

- 1) The segments present in GPS are \_\_\_\_\_.  
a) Ground control                      b) Space  
c) User equipment                    d) All the above
- 2) The distance between base station and the second receiver is calculated by using \_\_\_\_\_ technique.  
a) Static GPS Baseline  
b) Real-Time Kinematic Observations (RTK)  
c) Continuously Operating Reference Stations  
d) All the above
- 3) The satellites meant for GPS orbits in \_\_\_\_\_.  
a) Low Earth Orbit (LEO)  
b) Medium Earth Orbit (MEO)  
c) Geosynchronous Orbit (GSO)  
d) Geostationary Equatorial Orbit (GEO)
- 4) The satellites placed in the constellation of GPS arranged into \_\_\_\_\_ orbital are surrounded to Earth?  
a) Five    b) Six  
c) Seven                                        d) Eight
- 5) Compass satellite system of navigation is operated under \_\_\_\_\_ government.  
a) Chinese                                     b) Indian  
c) European                                  d) Russian
- 6) How many minimum satellites are operational in the constellation of GPS?  
a) 24    b) 25  
c) 26    d) 27
- 7) \_\_\_\_\_ is present on the satellites of GPS to contribute the accurate time information.  
a) Antenna                                      b) Transponder  
c) Atomic clock                                d) All the above
- 8) Global Positioning System (GPS) is operated by \_\_\_\_\_.  
a) Russian Space Force                      b) China Space Force  
c) United States Space Force                d) French Air and Space Force

- 9) The segments present in GPS are \_\_\_\_\_
- a) Space                                      b) Ground control  
c) User equipment                        d) All the above
- 10) How many satellites are required to measure 2-D position i.e., the longitude and the latitude?
- a) One    b) Two  
c) Three                                        d) Four

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

06

- 1) The components partitioned in GPS are known as \_\_\_\_\_
- 2) Global monitoring station is used in master control stations.  
(True/False)
- 3) The satellites placed in the constellation of GPS arranged into \_\_\_\_\_ orbital are surrounded to Earth?
- 4) The benefits of using GPS in surveying are Flexibility, Mobility, Speed. (True / False)
- 5) The space segment consists of \_\_\_\_\_ number of satellites.
- 6) Global monitoring station is used in master control station.  
(True/False)

**Q.2 Answer the following.**

16

- Segments of GPS
- GLONASS
- Basic modes of GPS
- Navigation application

**Q.3 Answer the following.**

- a) MTSAT
- b) Military application.

08

08

**Q.4 Answer the following.**

- Difference between GPS and GNSS.
- Write an application of GPS.

08

08

**Q.5 Answer the following.**

- Describe in detail vehicle tracking.
- Write a data transfer and analysis.

08

08

**Q.6 Answer the following.**

- Write a note on DGPS.
- Differential GPS surveying vs static GPS surveying.

08

08

**Q.7 Answer the following.**

- Types of positioning technique.
- Write a note on NAVSTAR GPS.

08

08