CENTRAL UNIVERSITY OF HARYANA

Term End Semester Examinations March 2023

Programme: M.Sc. Geoinformatics **Session: 2022-23**

Semester: I **Max. Time: 3 Hours**

Course Title: Introduction of Aerial Photograph and Photogrammetry **Max. Marks: 70**

Course Code: SBS GEO 3 1 03 C 3104

Instructions:

1. Question no. 1 has seven parts and students are required to answer any four. Each part carries three and half Marks.

2. Question no. 2 to 5 have three parts and students are required to answer any two parts of each question. Each part carries seven marks.

Q 1. (4X3.5=14)

a) Distinguish terrestrial and aerial photography.

b) Explain the basic principle of photogrammetry.

c) Briefly explain systematic errors in photographic coordinates.

d) Write a short note on a stereo plotter.

e) List out the advantage of soft-copy photogrammetry.

f) Write a short note on orthophotos.

g) Briefly explain the types of the aerial photograph.

Q 2. (2X7=14)

a) Write a detailed note on the history of photogrammetry.

b) Explain the geometric characteristics of aerial photographs in detail.

c) Explain the causes of relief displacement in photography in detail.

Q3. (2X7=14)

d) Discuss the uses of photogrammetry in various fields.

e) Distinguish between interior and exterior orientation in photogrammetry

f) Explain the need for orthorectification for urban mapping.

Q 4. (2X7=14)

a) Compare the benefits and drawbacks of pocket and mirror stereoscopes.

b) Distinguish between monoscopic and stereoscopic parallax measurement.

c) Describe the benefits of aerial photogrammetry compared to ground-based measurement.

Q 5. (2X7=14)

a) Write a detailed note on methods of determining scale in aerial photography.

b) Describe relief displacement on a vertical photograph in detail.

c) Discuss different types of aerial cameras used for image acquisition.

CENTRAL UNIVERSITY OF HARYANA

First Semester Term End Examinations March 2023

Programme: M.Sc. Geoinformatics **Session: 2022-23**

Semester: First **Max. Time: 3 Hours**

Course Title: Principles of Remote Sensing **Max. Marks: 70**

Course Code: SBS GEO 3 1 0 1 C 3 1 0 4

Instructions:

1. Question no. 1 has seven parts and students are required to answer any four. Each part carries three and half Marks.

2. Question no. 2 to 5 have three parts and student are required to answer any two parts of each question. Each part carries seven marks.

Q 1. (4X3.5=14)

a) Define Remote Sensing.

b) Concept of Spectral Signature.

c) What is Electromagnetic Spectrum?

d) Explain specifications of Cartosat-1.

e) Types of Sensor

f) Explain Satellite Orbits- Near Polar and Geostationary Orbits.

g) What is National Remote Sensing Centre (NRSC)?

Q 2. (2X7=14)

a) Explain the data acquisition process of Remote Sensing in detail with suitable diagram.

b) Discuss the Interaction of EMR with Atmosphere with suitable diagram.

c) Discuss the Interaction of EMR with the Earth Surface with suitable diagram

Q3. (2X7=14)

a) Explain the various Types and Characteristics of Platforms in Remote Sensing.

b) Explain the Sensor Specification of LANDSAT and LISS Sensor.

c) What do you mean by Sensor Resolution? Explain the various types of Sensor Resolution in detail.

Q 4. (2X7=14)

a) What is Thermal Remote Sensing? Explain the thermal properties of materials.

b) Discuss the concept and principles of Microwave Remote Sensing.

c) Discuss the various applications of Thermal Remote Sensing.

Q 5. (2X7=14)

a) Explain the elements of visual image interpretation.

b) Discuss the role of Visual Image Interpretation keys.

c) Explain the various Remote Sensing Set up in India.

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End Semester Examinations March, 2023

Programme: M.Sc. Geoinformatics **Session: 2022-23**

Semester: First **Max. Time: 3 Hours**

Course Title: Principles of GIS, Cartography and GNSS **Max. Marks: 70**

Course Code: SBS GEO 3 1 02 C 3104

Instructions:

1. Question no. 1 has seven parts and students need to answer any four. Each part carries three and half Marks.
2. Question no. 2 to 5 have three parts and student need to answer any two parts of each question. Each part carries seven marks.

Q 1. Write short notes on any four of the followings: (4X3.5=14)

a) Data integration
b) Discuss open-source GIS software
c) Types of GPS receivers
d) Buffering
e) Discuss NAVIC
f) Define map projection
g) Map symbolization

Q 2. (2X7=14)

a) What is GIS? Discuss the components of GIS in detail.
b) Define raster and vector data models in GIS. Discuss the merits and demerits of these models critically.
c) What are the differences between spatial and non-spatial data? Explain in detail using appropriate examples.

Q3. (2X7=14)

a) What is attribute data in GIS? Explain the various types of attribute tables and their characteristics.
b) What is an overlay in GIS? Discuss the methods and characteristics of overlays in GIS.
c) What is Data Base Management System? Discuss the relational model of Data Base Management System in GIS.

Q 4. (2X7=14)

a) What is GNSS? Explain the historical development of GNSS.

b) How does GNSS work? Discuss the source of errors in GNSS.

c) Discuss the applications of GNSS in cadastral mapping.

Q 5. (2X7=14)

a) Discuss the nature, scope and significance of cartography.

b) Define the various scale measurement methods.

c) What is thematic map? Discuss the steps of thematic map-making process.

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End Semester Examinations March 2023

Programme: M.Sc. Geoinformatics **Session: 2022-23**
Semester: First **Max. Time: 3 Hours**
Course Title: Fundamentals of Remote Sensing & Aerial Photograph **Max. Marks: 70**
Course Code: SBS GEO 3 1 0 2 GE 3 1 0 4

Instructions:

1. Question no. 1 has seven parts and students need to answer any four. Each part carries three and half Marks.
2. Question no. 2 to 5 have three parts and student need to answer any two parts of each question. Each part carries seven marks.

Q 1. Explain briefly (4X3.5=14)

a) Atmospheric window
b) Stereoscopic vision
c) Multispectral scanning
d) Landsat mission
e) Spatial resolution
f) Difference between aerial photograph and satellite image
g) Flight planning

Q 2. (2X7=14)

a) What is aerial photograph? Discuss the various types of aerial photographs.
b) Discuss the geometry of aerial photographs in details.
c) Explain the types and components of aerial camera in detail.

Q3. (2X7=14)

a) What is remote sensing? Discuss its application.
b) What EMR? Discuss the interaction of EMR with atmosphere.
c) Discuss the interaction of EMR with atmosphere.

Q 4. (2X7=14)

a) What are the different types of platforms? Discuss the advantage and disadvantage.
b) What is satellite orbit? Discuss the sun-synchronous orbit.
c) Discuss the classification and characteristics of sensors.

Q 5. (2X7=14)

a) What is image enhancement? Explain the histogram equalization method of image enhancement techniques.
b) What is image classification? Discuss the supervised method in detail.
c) Discuss the concept of digital image in detail.