KATHMANDU UNIVERSITY
End Semester Examination
May/June, 2022

Marks scored:

Level : B.Sc./B.Tech.
Year : III
Exam Roll No. :
Registration No.:

Time: 30 mins.

Course : ENVS 306
Semester : II
F. M. : 20
Date : 16-jne-022

SECTION "A"
[10Q. × 1 = 10 marks]

Encircle the most appropriate answer.

1. GIS software provides the functions and tools needed to store, analyze and display _____ information.
   a. Geologic b. geometric c. geographic d. geo-informatics

2. GIS has ability to assimilate divergent sources of _____.
   a. Hybrid data b. Spatial and non-spatial data
   c. Vector data d. Raster data

3. By "spatial data" in GIS, what does that mean
   a. Complex values b. Graphic values c. Positional values d. Decimal values

4. In the spherical system, "vertical lines" are known as:
   a. Parallels b. Latitude c. Longitude d. East-west line

5. The entire earth surface is divided into zones, in which types of projection?
   a. Conic projection
   b. Lambert-Azimuthal projection
   c. Universal Transverse Mercator (UTM) projection
   d. Cylindrical projection

6. If you are making a map with the sampling location, streams and OSM, in what order would you place the layers on the layer panel?
   a. Streams, sampling location and OSM b. OSM, streams and sampling location
   c. Sampling location, streams and OSM d. It doesn't matter what the order are

7. The vector geographic data have their topology but in raster have their _____
   a. Figure b. Cell c. Feature d. Coordinate

8. Remote Sensing techniques make use of the properties of _____ emitted, reflected or diffracted by the sensed objects:
   a. Electric waves b. Sound waves
   c. Electromagnetic waves d. Radio waves

9. China's global navigation system is called 'BeiDou'. The alternate name for 'BeiDou' is:
   a. GPS b. GALILEO c. GLONASS d. COMPASS

10. In satellite or aerial photography, _____ can be defined as the ability of entire photographic system, including lens, exposure, processing and other factors, to render a sharply defines images
    a. Resolution b. Color c. Texture d. Pattern

SECTION "B"

[10Q. × 0.5 = 5 marks]

Fill in the blanks with **appropriate word/ words**.

11. DBMS stands for _____.

12. _____ are simply defined as 'data of data'.

13. In Geographic Coordinate System (GCS), a point is reference by _____ values.

14. The most recently developed and widely used datum is _____.

15. The globe is divided into _____ north and south zones, each spanning six degrees of longitudes in Universal Transverse Mercator (UTM).

16. Nepal falls under zones _____ on Universal Transverse Mercator (UTM) projection system.

17. A _____ Coordinate System uses a three-dimensional spherical surface to define location on the earth.

18. _____ query operation is used for selecting items for attributed database using conditions formulated by users.

19. The portion of EM-spectrum in which radiation passing through the atmosphere in not significantly altered by reflection, absorption or scattering is called _____.

20. Spatial resolution of Landsat generated images (bands) are of _____.

SECTION "C"

[5Q. × 1 = 5 marks]

Define in **one sentence**.

21. Geographic Information System (GIS):

22. Map projection:

23. Raster data:

24. Spatial data:

25. Remote Sensing:

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SECTION "D"
[3Q. × 6 = 18 marks]

Attempt *ANY THREE* questions.

1. What is GIS? What are the component of GIS?

2. What are the major application and scopes of GIS?

3. What are the different types of GIS data? What are its advantages and disadvantages?

4. What is Remote Sensing and its types? Demonstrate graphically the Remote Sensing processes?

SECTION "E"

5. Write short notes on (*ANY FOUR)*: [4Q. × 4 = 16 marks]
   a. Common function of GIS
   b. Map projection
   c. Global Navigation Satellite System (GNSS)
   d. Spatial Analysis
   e. Component of Remote Sensing

6. Differentiate between (*ANY THREE*): [3Q. × 3 = 9 marks]
   a. Data file and Database
   b. Geographical and Projected Coordinate System
   c. Spatial and Temporal resolution
   d. Active and Passive remote sensing

7. Discuss the following [2Q. × 6 = 12 marks]
   a. In your field of interest, how will you use GIS?
   b. Practical application of Remote Sensing in disaster assessment.