

KATHMANDU UNIVERSITY
End Semester Examination
August/September, 2017

Mark Scored:

Level : B. Sc./B. Tech.

Year : III

Exam Roll No. :

Time: 30 min

AUG 29 2017
Course : ENVS 306

Semester : II

F. M. : 20

Registration No.:

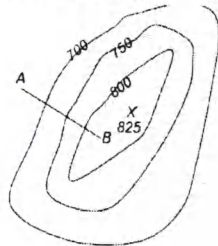
Date :

SECTION "A"

[10 Q × 0.5 = 5 marks]

Tick (√) the most appropriate one.

1. What landform do you think this map depicts?
a. Valley b. Mountain c. Plain d. Downhill



2. Which of the following countries was the pioneer in development of GIS systems as a result of innovations dating back to the early 1960s?
a. Canada b. Nepal c. United States d. Japan
3. Ranking *erosion class* from 1 (lowest erosivity) to 5 (highest erosivity) is a:
a. Nominal attribute b. Ordinal attribute c. Interval attribute d. Ratio attribute
4. The set of lines that defines a polygon may not form a closed area in:
a. Topological model b. TIN
c. Spaghetti model d. DTM
5. On the Clarke 1866 spheroid, one degree of longitude at the equator is approximately:
a. 61 km b. 91 km c. 101 km d. 111 km
6. Projection that preserve local shape strictly is known as:
a. Conformal b. Equal area c. Equidistance d. Azimuthal
7. The error sources that affect the accuracy of pseudorange calculation in GNSS at highest level is due to:
a. Satellite clocks b. Tropospheric delays
c. Ionospheric delays d. Receivers noise
8. China's global navigation system is called 'BeiDou'. The alternate name for 'BeiDou' is:
a. GPS b. Galileo c. GLONASS d. Compass
9. The lines which form a gridded network in the globe is called:
a. Parallels b. Meridians c. Graticule d. Latitudes
10. UTM divides the globe into _____ north and south zones.
a. Sixty b. Seventy c. Eighty d. Ninety

SECTION "B"
[10 Q. × 1 = 10 marks]

Fill in the blanks with appropriate word/words.

11. Vector data models use discrete elements such as _____ to represent the geometry of real world entities.
12. The raster model is used most commonly with variables that may change _____ across a region.
13. Circles with the same radius as the spherical earth are called _____
14. _____ provides a frame of reference for measuring locations on the surface of the earth.
15. If the projection surface intersects the globe instead of merely touching its surface, the resulting projection is a _____ rather than a tangent case.
16. Satellites that cover each area of the world at a constant local time of day are called as _____
17. The finer the _____ resolution, the narrower is the wavelength range for a particular channel or band.
18. _____ occurs when particles or large gas molecules present in the atmosphere interact with and cause the electromagnetic radiation to be redirected from its original path.
19. The control segment of GNSS comprises of a ground-based network of master control stations, data uploading stations, and _____
20. Each satellite of GPS is identified by their _____ and their Pseudo-Random Code Number (PRN).

SECTION "C"
[5 Q. × 1 = 5 marks]

Define these terms in one sentence.

21. Node:

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22. Geodesy:

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23. Gnomonic projection:

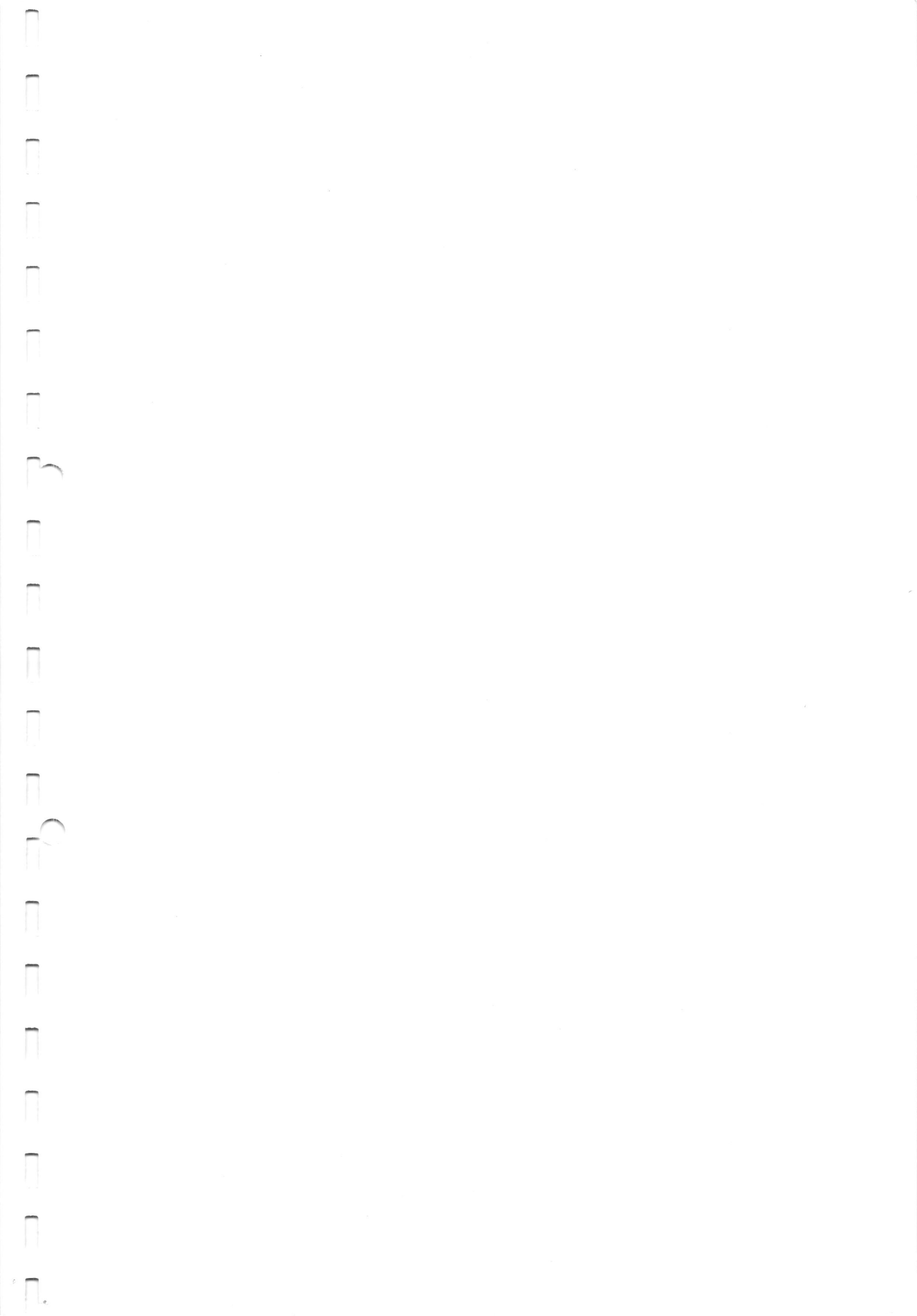
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24. Swath:

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25. Satellite constellation:

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SECTION "C"

[4 Q. × 6 = 24 marks]

Attempt *ANY FOUR* questions.

1. Briefly explain the GIS components. Graphically demonstrate GIS users and their relationships.
2. Compare vector and raster data models with their types.
3. Explain different types of map projections.
4. What are different types of resolution of sensors used in remote sensing? Briefly explain each of them.
5. What is GNSS? Discuss in detail about Global Positioning System (GPS).

SECTION "D"

6. Write short notes on (*ANY FOUR*) [4Q. × 4 = 16]
 - a. Universal Transverse Mercator
 - b. Attribute data
 - c. Geographic coordinate system
 - d. Electromagnetic spectrum
 - e. Atmospheric interactions of radiation
7. Differentiate between: [3Q. × 3 = 9]
 - a. Parallels and Meridians
 - b. Propagation and Reception of GNSS signals
 - c. Active and Passive sensors
8. Give reasons: [2Q. × 3 = 6]
 - a. Urban planning can be systematized using GIS.
 - b. Remote sensing is an activity each of us has been carrying out since our birth.



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