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63/2 (SEM-3) GGY 302(N/O)

2021

(Held in 2022)

GEOGRAPHY

(Theory Paper)

Paper Code : GGY-302 (New/Old)

**(Basics of Remote Sensing and Geographic
Information System)**

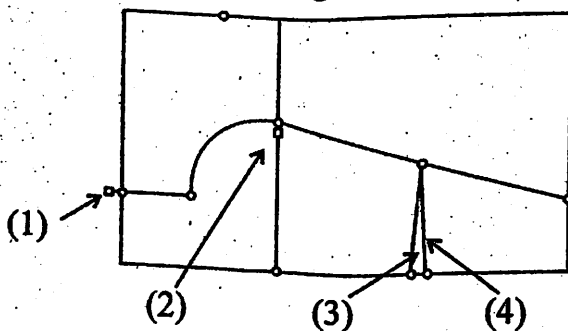
Full Marks – 80

Time – Three hours

The figures in the margin indicate full marks
for the questions.

1. Multiple choice questions (answer *all*):
1×10=10

- I. Find the following digitizing errors:



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- (a) (3) Overshoot, (4) Undershoot, (1) Sliver,
(2) Duplicate line
- (b) (1) Overshoot, (2) Undershoot (3) Sliver,
(4) Duplicate line
- (c) (2) Overshoot, (3) Undershoot, (4) Sliver,
(1) Duplicate line
- (d) (4) Overshoot, (1) Undershoot, (2) Sliver,
(3) Duplicate line

II. The geometry of a shapefile is stored in two basic files :

- (a) The .shp file &and the .shx file
- (b) The .cpg file &and the .dbf file
- (c) The .dbf file &and the .shp file
- (d) The .dbf file &and the .shx file

III The smallest unit of measurement to which data can be recorded is known as :

- (a) Precision (b) Accuracy
- (c) Geodesy (d) Millimetre

IV UTM Grid System divides the Earth's surface between

- (a) 83° N and 80° S into 50 zones
- (b) 84° N and 80° S into 60 zones
- (c) 80° N and 84° S into 65 zones
- (d) 80° N and 83° S into 180 zones.

V TIN stands for

- (a) Traffic Internet Network
- (b) Triangulated Irregular Network
- (c) Temporal Interest Network
- (d) Temperature Interface Node

VI Which of the following statements is true about the capabilities of GIS ?

- (a) Data capture and preparation
- (b) Data management, including storage and maintenance
- (c) Data manipulation and analysis
- (d) All of the above

VII By 'spatial data' we mean data that has

- (a) Complex values (b) Positional values
- (c) Graphic values (d) Decimal values

VIII In which database tables are related by sharing common entity characteristic(s)

- (a) Hierarchical (b) Network
(c) Relational (d) Object-Oriented

IX Which of the following is not a raster data storing format ?

- (a) BSQ (b) BIP
(c) BIL (d) BQS

X Which of the following is not an element for visual interpretation ?

- (a) Shape (b) Tone
(c) Texture (d) Software.

2. Answer in brief (any four):

2×4=8

- (a) What are the main components of GIS ?
(b) What is a false colour composite ?
(c) Write two advantages of raster data format.
(d) Write two advantages of vector data format.
(e) Mention two scanning techniques used in a satellite.
(f) What is RDBMS ?
(g) What is a platform in remote sensing ?

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(4)

100

3. Answer in brief (any four):

5×4=20

- (a) Discuss about Spatial and Non-spatial data.
(b) What are the areas we need to use thermal remote sensing ?
(c) Write about the advantages of Microwave remote sensing.
(d) What is open sourced GIS ? Discuss with few examples.
(e) What is GPS ? How it is different from DGPS ?
(f) Why we use band ratio technique in remote sensing ?
(g) How energy interaction in atmosphere is important in remote sensing ?

4. Explain in details (any two):

9×2=18

- (a) Discuss the elements of visual image interpretation.
(b) Give a description of the development of Indian remote sensing.
(c) What is aerial photography ? Describe the factors that determine the geometry and quality of aerial photographs.
(d) Describe the applications of Unmanned Aerial Vehicle (UAV).

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(5)

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5. Answer in details (any two): $12 \times 2 = 24$

(a) Mention the various techniques of image enhancement and discuss any two in detail.

$4 + 8 = 12$

(b) What are the differences of supervised and unsupervised classification? Discuss any one method of supervised classification.

(c) Discuss the application of GIS and remote sensing in urban land management.

(d) Discuss the integration of GIS and remote sensing in hazard management.