

**2018**  
**GEOGRAPHY**  
**GGY-302**  
**REMOTE SENSING AND GEOGRAPHIC**  
**INFORMATION SYSTEM**

**Full Mark: 80**

**Time: 3 Hours**

*The figures in the margin indicates full marks for the questions :*

- 1. Multiple choice questions (Answer all) 1X 10=10**
- i. The orbital height of GPS satellites is .....**
- (a) 240-450 Km (b) 500-1,000 Km  
(c) 20,200 Km (d) >32,000 Km
- ii. Position Dilution of Precision is associated with .....**
- (a) Position (b) Resolution  
(c) Satellite imagery (d) Scattering
- iii. Remove the odd one out .....**
- (a) Size (b) Shape  
(c) Texture (d) Site
- iv. Mie Scattering**
- (a) Wavelength > Particle Size (b) Wavelength < Particle Size  
(c) Wavelength = Particle Size (d) Wavelength  $\geq$  Particle Size
- v. The wavelength suitable for Remote Sensing during Overcast weather condition will be**
- (a) Gamma (b) Thermal  
(c) Microwave (d) Optical
- vi. The orbit for Earth Observation Remote Sensing satellites is ....**
- (a) Tropospheric orbit (b) Polar orbit

(c) Geostationary orbit (d) Space shuttle orbit

vii. Which is the best Radiometric resolution .....

(a) (2)6 (b) (2)5 (c) (2)3 (d) (2)1

viii. What is the minimum number of satellite signal necessary to get accurate locational position

(a) 2 (b) 4 (c) 6 (d) 8

ix. Which is the raster elevation data

(a) Toposheet (b) DEM

(c) Satellite imagery (d) TIN

x. Storage of data in hierarchy is in .....

(a) Point to point (b) Run length

(c) Quad tree (d) Cell by cell

2 Answer in brief (any four)

2X4=8

- i. What is nadir in aerial photography?
- ii. Write about smallest unit of digital image?
- iii. Differentiate between GeoTiff and JPEG?
- iv. What is Geoid?
- v. What is polarization?
- vi. What is Scanning system in Remote sensing?

3. Answer in brief (any four)

5X4=20

- i. What is UTM grid system? Explain in short with suitable diagram. 3.5+1.5
- ii. Explain various GIS operations? 5
- iii. What is atmospheric window? Explain in brief with suitable diagram. 3.5+1.5
- iv. What determines the signal quality of remotely sensed image? Explain. 5
- v. Differentiate between active and passive remote sensing and give its advantage and disadvantages. 5

vi. Explain various factors that affect GPS with suitable diagrams. 5

4. Answer in detail (any Two)

9X2=18

- i. What is Georelational data model? Explain how features are represented in vector and raster model with suitable diagrams. 2+5+2
- ii. Explain resolution with suitable diagrams. 9
- iii. Define satellite orbit. Explain types of satellite orbit, its characteristics and significance with suitable diagrams. 2+5+2
- iv. "Remote sensing data can be used for the better environmental management". Justify. 9

5. Answer in Detail (Any two)

12X2=24

- i. What is Remote Sensing? Explain its principle with suitable diagrams. 3+7+2
- ii. What is Earth observation satellite? Give few examples with specifications. 6+6
- iii. Define GIS? Explain its components and significance with suitable diagrams. 2+8+2
- iv. What is aerial photo interpretation? Explain its elements with suitable diagrams. 2+7+3

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