

Total No. of Questions: 6

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Enrollment No.....



Faculty of Engineering
End Sem (Even) Examination May-2022
OE00038 Remote Sensing & GIS

Programme: B.Tech.

Branch/Specialisation: All

Duration: 3 Hrs.

Maximum Marks: 60

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d.

- Q.1 i. Which of the following can be affected by atmospheric path disturbances? **1**
(a) Modern GPS surveying (b) Conventional GPS
(c) Absolute positioning (d) Resection method
- ii. What will be the length of the base line in case of short baseline method of GPS surveying? **1**
(a) Less than 50 km (b) Greater than 50 km
(c) Less than 2 km (d) Greater than 100 km
- iii. The maximum absorption of solar radiation due to ozone occurs at wave lengths: **1**
(a) Shorter than 0.3 μm (b) Shorter than 0.2 μm
(c) Greater than 0.3 μm (d) None of these
- iv. Remote sensing techniques are being usefully employed for the purpose of: **1**
(a) Improving natural resource management
(b) Land use
(c) Protection of the environment
(d) All of these
- v. What is Digital Image Processing? **1**
(a) It's an application that alters digital videos
(b) It's a software that allows altering digital pictures
(c) It's a system that manipulates digital medias
(d) It's a machine that allows altering digital images

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- vi. How does picture formation in the eye vary from image formation in a camera? **1**
 (a) Fixed focal length
 (b) Varying distance between lens and imaging plane
 (c) No difference
 (d) Variable focal length
- vii. The information in GIS is entered and stored as **1**
 (a) Panels (b) Layers
 (c) Single panel (d) Dual-panel
- viii. The user can use GIS to make **1**
 (a) Complex analyses only (b) Display maps only
 (c) Both (a) and (b) (d) None of these
- ix. The raster data model is based on which of the following **1**
 (a) Grid cells
 (b) Discrete XY coordinate pairs
 (c) Tessellations
 (d) Grid cells or pixels grouped to form spatial entities
- x. The vector data model is based on which of the following **1**
 (a) Pixels or grid cells
 (b) Cartesian coordinate system
 (c) Collections of points joined by straight lines
 (d) Quadtree
- Q.2 i. What is GPS? Write working principle of GPS. **2**
 ii. Discuss the relative advantages of integer and real representations of coordinates in spatial databases. **3**
 iii. Differentiate between Geodetic and Geo centric coordinate system. **5**
- OR iv. Short notes on- GLONASS and GALILEO. **5**
- Q.3 Attempt any two:
 i. What is Concepts of Remote Sensing? **5**
 ii. What are Energy sources and radiation principles? Explain. **5**
 iii. What are different types and uses of satellites? Also explain remote sensing satellite orbits? **5**

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- Q.4 Attempt any two:
 i. Explain characteristics of photographic images and colour. **5**
 ii. Explain digital image classification techniques and extraction of thematic information. **5**
 iii. Explain the applications of remote sensing in water resources. **5**
- Q.5 Attempt any two:
 i. Explain Components of a GIS. **5**
 ii. What are types of map projection? Explain. **5**
 iii. How spatial data and attribute data integrated to make a GIS? Explain. **5**
- Q.6 Attempt any two:
 i. Elaborate geo-relational vector data model. **5**
 ii. Explain elements of raster data model. **5**
 iii. Explain in detail about the data base management. **5**

Marking Scheme - OE00038 Remote Sensing & GIS

Q.1	i.	Which of the following can be affected by atmospheric path disturbances?		1
		(a) Modern GPS surveying		
	ii.	What will be the length of the base line in case of short baseline method of GPS surveying?		1
		(a) Less than 50 km		
	iii.	The maximum absorption of solar radiation due to ozone occurs at wave lengths:		1
		(a) Shorter than 0.3 μm		
	iv.	Remote sensing techniques are being usefully employed for the purpose of:		1
		(d) All of these		
	v.	What is Digital Image Processing?		1
		(b) It's a software that allows altering digital pictures		
Q.2	vi.	How does picture formation in the eye vary from image formation in a camera?		1
		(d) Variable focal length		
	vii.	The information in GIS is entered and stored as		1
		(b) Layers		
	viii.	The user can use GIS to make		1
		(c) Both (a) and (b)		
	ix.	The raster data model is based on which of the following		1
		(c) Tessellations		
	x.	The vector data model is based on which of the following		1
		(b) Cartesian coordinate system		
	i.	Definition of GPS	1 mark	2
		Working principle of GPS	1 mark	
	ii.	Advantages of integer and real representations of coordinates in spatial databases.	3 marks	3
	iii.	Differentiate between		5
OR		As per explanation	5 marks	
	iv.	Short notes on- GLONASS	2.5 marks	5
		Short notes on- GALILEO	2.5 marks	

Q.3	Attempt any two:			
	i.	Concepts of Remote Sensing		5
		As per explanation	5 marks	
	ii.	Energy sources and radiation principles		5
Q.4		As per explanation	5 marks	
	iii.	Different types and uses of satellites	3 marks	5
		Explain remote sensing satellite orbits	2 marks	
Q.5	Attempt any two:			
	i.	Any characteristics of photographic images	(1*5) marks	5
	ii.	Explain digital image classification	3 marks	5
		Extraction of thematic information	2 marks	
Q.6	iii.	Any five applications of remote	(1*5) marks	5
	Attempt any two:			
	i.	Components of a GIS.		5
		As per explanation	5 marks	
	ii.	Types of map projection? Explain.		5
		As per explanation	5 marks	
	iii.	Spatial data and attribute data		5
		As per explanation	5 marks	
	Attempt any two:			
	i.	Geo-relational vector data model.		5
		As per explanation	5 marks	
	ii.	Elements of raster data model.		5
		As per explanation	5 marks	
	iii.	Detail about the data base management.		5
		As per explanation	5 marks	
