Name:	
Enrolment No:	**UPES**

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, December 2019

Course: Introduction to GIS & GNSS (PEGI 2003) **Semester: III**
Programme: B.Tech GIE

Time: 03 hrs. **Max. Marks: 100**

Instructions: Attempt any two questions from Section C.

	SECTION A		
S. No.		**Marks**	**CO**
Q 1	a) Differentiate between a feature and an attribute?	**2**	**CO2**
	b) How would you define GIS to someone who has never heard of it?	**2**	**CO1**
Q 2	Differentiate between Selective Availability and AntiSpoofing.	**4**	**CO5**
Q 3	Differentiate between a one-to-one relationship between tables and a many-to-one relationship? Give examples.	**2+2**	**CO2**
Q 4	Differentiate between almanac data and ephemeral data and why each one of these is used.	**4**	**CO5**
Q 5	What are the different parts within a spatial reference that are specified while creating a feature class in a geodatabase? Explain each.	**4**	**CO1**
	SECTION B		
Q6	a) Define a Subtype and state its importance.	**2**	**CO1**

	b) Which geodatabase type should be used to support editors simultaneously modifying the same data? Choose the correct answer and tell why others are not the correct answers.
	  i) File geodatabase
	  ii) Personal geodatabase
	  iii) Disconnected replica geodatabase
	  iv) Versioned geodatabase
		3	**CO1**

	c) Differentiate between Clip and Intersection in vector geoprocessing.	**3**	**CO3**
Q 7	a) Explain the limitations of GPS technology?	**4**	**CO5**
	b) What is Proximity analysis and its significance?	**4**	**CO4**
Q 8	Describe the working of Differential GPS. Why is it better than GPS position determinations?	**8**	**CO5**

Q 9	Provide four specific examples of applications using geometric network modelling in their workflows and specify how geometric network modelling is useful in those applications?	8	CO4
Q 10	Identify the different segments in GPS operation and explain each. Draw diagram showing where and when the data is uplinked and downlinked.	4+4	CO5
SECTION-C (Attempt any TWO questions)		
Q 11	a) What is Raster Map Algebra? Draw the truth table for each Boolean operator used in Raster calculator and give one practical example of each.	2+5+3	CO3
	b) Explain the different sources of errors in GPS calculations?	10	CO5
Q 12	a) Explain any four Raster Analysis techniques with suitable example?	8	CO4
	b) Describe the major components of a geodatabase.	12	CO2
Q 13	a) Answer the following question:

Delhi Municipal Corporation wishes to identify areas suitable for a waste disposal site and to notify all residents within two kilometers of the selected sites, by ordinary letter post that they are close to a selected site.
   The criteria for selection are:
- An impervious rock type underlying a site,
- A slope over a site of less than five degrees,
- No permanent water body (stream or lake) within a site,
- Road access not more than 500 meters away from a site,
- A site to be not more than 10 kilometers from the city boundary.

Answer the following questions to create a GIS for the scenario, and draw a flowchart depicting your methodology.
   i) What map layers would you create?
   ii) Which attributes would you put into data tables?
   iii) Which analysis technique would you use to find areas 'within two kilometers of ' and 'not more than 10 kilometers from'? | 10 | CO4 |
| | b) What is Geometric Dilution of Precision and its types? | 10 | CO5 |