

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII (NEW) EXAMINATION – WINTER 2018****Subject Code: 2170606****Date: 15/11/2018****Subject Name: Application of Geoinformatics in Civil Engineering****Time: 10:30 AM TO 01:00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

		MARKS
Q.1	(a) Write a Short note on: NAVSTAR	03
	(b) Explain Components of GIS.	04
	(c) Enlist and Explain Branches of Geoinformatics.	07
Q.2	(a) Define: Focal Length, Nadir Point, Tilt.	03
	(b) Explain Seven Elements of Remote Sensing.	04
	(c) What is Relief Displacement? Derive Expression for the relief Displacement in a Vertical Photograph.	
OR		
	(c) The Scale of an Aerial Photograph is 1 cm = 100 cm and Photograph size is 15 cm x 15 cm. Determine the Number of Photographs required to cover an Area of 15 km x 15 km, if Longitudinal lap is 60% and Side Lap is 30%.	07
Q.3	(a) What is Active Remote Sensing?	03
	(b) Write Working Principle of GPS.	04
	(c) Discuss the Role of Spectral Reflectance Curves in Remote Sensing with Neat Sketch, including Spectral Reflectance of Soil, Water and Vegetation.	07
OR		
Q.3	(a) What is Passive Remote Sensing?	03
	(b) What is Scanner? Explain Types of Scanners.	04
	(c) Explain in Detail: Electromagnetic Radiation.	07
Q.4	(a) Explain Raster Data Model.	03
	(b) What are the Limitations of GIS.	04
	(c) Explain Factors Affecting GPS in Detail.	07
OR		
Q.4	(a) Write a Short note on: Vector Data Model.	03
	(b) What are the Advantages of GIS.	04
	(c) Enlist and Explain Applications of GNSS.	07
Q.5	(a) Define Metadata, Attribute Data, Spatial Data.	03
	(b) Discuss Application of Remote Sensing in Land use and Land Cover Mapping.	04
	(c) Explain the Role of GIS and Remote Sensing in Floods.	07
OR		
Q.5	(a) Write Functions of DBMS.	03
	(b) Discuss Application of Remote Sensing in Geology.	04
	(c) Write Various Applications of Geo-informatics in Civil Engineering and Explain use of GIS in Water Resources Engineering.	07
