UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination – December 2017

Program/course: B.PLAN   **Semester – V**
Subject: GIS for Planning   **Max. Marks   : 100**
Code   : BPLC 361   **Duration   : 3 Hrs**
No. of page/s: 02

All questions are compulsory

Section A   **[10 X 2 = 20Marks]**
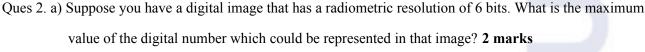
Ques1.   Match the following: **10 marks**

a) SRTM	Relational DBMS
b) Raster and Vector	Canada
c) Landsat 8	India
d) Preserve Direction	Azimuthal Map
e) Ability to Link files together	Data Model
	TIRS
	DEM
	Reference Map
	Cartogram
	Polar Stereographic Projections

Ques 2. a) Suppose you have a digital image that has a radiometric resolution of 6 bits. What is the maximum

value of the digital number which could be represented in that image? **2 marks**

   b) What will happen to the reflectance curve is moisture is added to the soil. **2 marks**

   c) Identify and describe the three fundamental "types of map features" used in desktop mapping
   (vector-based systems) **6 marks**

Section B   **[10 X 4 = 40 Marks]**

Ques3. a) Differentiate between an analog and a digital image? **3 marks**

   b) A satellite image needs to be enhanced to improve its contrast. Discuss the reasons why a satellite
   image could have low contrast? **3 marks**

c) What is the main difference between multispectral and hyperspectral remote sensing? How do spectral curves derived from these two remote sensing types differ? **4 marks**

Ques4. a) Differentiate between Euclidean distance and Manhattan distance in GIS? **4 marks**

b) If you wanted to monitor the general health of all vegetation covers over the Indian states for several months, what type of platform and sensor characteristics (spatial, spectral, and temporal resolution) would be best for this and why? **6 marks**

Ques5. What are the major analytical tools for vector geoprocessing in GIS? Explain each with suitable examples? **10 marks**

Ques6. What is resampling and why would it be used? Discuss the different types of Resampling?

10 marks

Section C   [40 Marks]

Ques7. Describe the three different types of developable surfaces to create map projections? Discuss the significance of each with relevant diagrams? **10 marks**

Ques8. Explain the term Band Rationing? Describe its importance as an image transformation technique with a suitable example? **10 marks**

Ques9. What are the two different types of coordinate systems? Describe each in detail illustrating how coordinates are measured in each system? Draw suitable diagrams. **20 marks**