UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination – December 2017

Program/course: M.PLAN **Semester – I**
Subject: Remote Sensing & GIS **Max. Marks : 100**
Code : MPLC 711 **Duration : 3 Hrs**
No. of page/s: 02

All questions are compulsory

Section A [20Marks]

Ques1. Explain the following terms: [2 X 5 =**10 marks**]

a) Atmospheric Window
b) Central Meridian
c) Proximity Analysis
d) Pan-Sharpening
e) Masking

Ques2. a) Explain with simple examples various sources for geographic data that acts as an ingredient for GIS analysis? **4 marks**

b) How can GIS be applied to urban and regional planning? Give atleast three applications. **6 marks**

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

Ques3. a) Differentiate between a feature and an attribute? **2 marks**

b) Most remote sensing systems avoid detecting and recording wavelengths in the ultraviolet portions of the spectrum. Explain why this would be the case. **4 marks**

c) What are standard parallels and their significance? **4 marks**

Ques4. a) What are Ground control points? Why are they important? **3 marks**

b) Explain the various elements of visual image interpretation in remote sensing with examples. **7 marks**

Ques5. a) What does a Spectral Reflectance curve indicate? What do you have on the x-axis and what is on the y-axis? **2 marks**

b) The color of turbid water appears brownish red in an optical satellite image while clear water appears dark-bluish. Explain why this is so in terms of spectral reflectance curve. **4 marks**

c) Differentiate between neighborhood statistics and zonal statistics in raster GIS? **4 marks**

Ques6. There are four types of data recognized in a GIS? Describe each. **10 marks**

Section C [40 Marks]

Ques7. a) Explain the term Band Rationing and its importance? **4 marks**

b) Draw flowcharts detailing the steps needed for supervised and unsupervised classifications? **6 marks**

Ques8. Define and describe the Universal Transverse Mercator coordinate system? What type of developable surface is used with a UTM projection? What are the UTM zones, where is the origin of the zone and how are negative coordinates avoided? How measurements are made within a UTM system? Illustrate the UTM system with a suitable diagram. **10 marks**

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Ques9. There are four different ways in which projections can be classified. Discuss each method and the possible categories underneath? Draw relevant diagrams where applicable. **20 marks**