

1325

Your Roll No.....

**B.Sc. (Hons.)/III**

**A**

**GEOLOGY - Paper X**  
(Photogeology, Remote Sensing and GIS)  
(Admissions of 2004 and onwards)

Time : 3 hours

Maximum Marks : 45

(Write your Roll No. on the top immediately on receipt of this question paper.)

*Attempt any five questions.*  
*All questions carry equal marks*

1. Write short notes on:
  - a) Wein's Displacement Law
  - b) Convolution filter
  - c) Stefan-Boltzmann law

**09**
  
2. Differentiate between *any three* of the following:
  - a) Active and Passive remote sensing
  - b) Spatial resolution and Temporal resolution
  - c) Distortion and Displacement
  - d) Standard FCC and True colour FCC

**09**
  
3.
  - a) If the smallest ground feature to be preserved is 0.3 m in the digital image scanned from a 1:10,500 aerial photograph, what scanning resolution should be adopted?
  
  - b) Assume that two road intersections shown on a photograph can be located on a 1:25000 scale topographic map. The measured distance between the intersections is 47.2 mm on the map and 94.3 mm on the photograph. (i) What is the scale of the photograph?, (ii) At that scale, what is the length of the fence line that measures 42.9 mm on the photograph?

**09**
  
4. What is vertical exaggeration? How does it help in photogrammetry?

**09**
  
5. How can you identify and differentiate a horizontally bedded sandstone and horizontally bedded limestone in an image?

**09**

6. Expand the following acronyms and describe them in short:
- 1) LISS
  - 2) CCD
  - 3) LIDAR
  - 4) NDVI
  - 5) GCP
  - 6) ASTER
  - 7) UTM
- 09
7. Describe various glacial landforms. Support your answer with suitable diagrams.
- 09
8. Describe in detail supervised and unsupervised classification in remote sensing.
- 09