PG Odd Semester (CBCS) Exam., December—2016

EARTH SCIENCE

(1st Semester)

Course No. : ESCCC–101

(Geomorphology, GIS and Remote Sensing)

Full Marks : 70
Pass Marks : 28

Time : 3 hours

The figures in the margin indicate full marks for the questions

Answer **all** questions

1. *(a)* Explain the sources of energy for geomorphic processes. Describe the characteristics of exogenic geomorphic processes. 2+5=7

(b) Explain with suitable sketch, the Davis model of landform evolution. 7

OR

2. *(a)* Define the terms tectonic geomorphology and geomorphic markers. Discuss the characteristics of some of the geomorphic markers. 2+5=7

(b) Define a landform. Discuss the morphological characteristics of fluvial landforms with suitable sketches. 1+6=7

3. *(a)* What is electromagnetic radiation? Discuss the characteristics of electromagnetic spectrum with neat sketch and its relation with remote-sensing technique. 1+3+3=7

(b) What are different types of satellites based on its rotation? Discuss the characteristics of commonly used terms in satellite platform. 3+4=7

OR

4. *(a)* What are stereospairs? Discuss the uses of stereospairs in stereoscopic vision. Add short comment on the scale of aerial photograph. 2+3+2=7

(b) What are principal points? Discuss the types of aerial photographs with suitable sketches. Add briefly a note on types of stereoscopes. 1+3+3=7

5. *(a)* What is a digital image? Briefly discuss the basic components of digital image processing. 1+6=7

(b) What is digital image classification? Describe the types of digital image classification. 1+6=7

OR

6. *(a)* Discuss the role of remote sensing in groundwater studies and mineral explorations. 4+3=7

(b) Describe the key components for manual interpretation of satellite data. 4+3=7

7. *(a)* Describe the characteristics of Indian Remote-Sensing Satellite Series. 7

(b) What is sensor? Describe the characteristics of panchromatic and multispectral scanner sensors with suitable examples. 1+6=7

OR

8. *(a)* Describe the principle of hyperspectral remote sensing. Discuss the application of hyperspectral remote sensing. 3+4=7

(b) Describe the aspects of landsat satellite. Discuss the main components of landsat satellite series. 3+4=7

9. *(a)* What is GIS? Discuss the vector and raster data types with suitable sketches. 1+3+3=7

(b) Describe spatial data and non-spatial data. Add list of some of the GIS softwares. 3+3+1=7

OR

10. *(a)* What is coordinate system? Discuss the arrangement of the latitude and the longitude lines of the earth. Write how the coordinate of a point on the earth is assigned. 1+3+3=7

(b) Discuss a GIS based project giving suitable example. Add a brief note on the application of GIS in today's world. 3+4=7

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