

M.Phil 1st Semester Examination, 2019

EARTH SYSTEM SCIENCE

(Advance Learning of Earth System Sciences)

PAPER – ESS-113

Full Marks : 50

Time : 2 hours

Answer any **four** questions

The figures in the right hand margin indicate marks

Candidates are required to give their answers in their own words as far as practicable

Illustrate the answers wherever necessary

1. Discuss the character of Quaternary Environment changes in the earth and their role in landform evolution. 10
2. Explain the role of various dating techniques in understanding the chronological development of ancient landforms of the earth. 10

(Turn Over)

3. Discuss the recent advancement in remote sensing techniques for studying quaternary geology and applied geomorphology. 10
4. Elucidate the role of application of geomorphological concepts in planning and development of a region around mountain belt. 10
5. Enumerate the importance of drainage pattern analysis from R.S. data in lithological and structural mapping. Explain lineaments and geomorphic anomalies stating their importance in geological mapping. 6 + 4
6. Justify the concept and application of Geosciences in understanding the Natural hazards. 10
7. Write down the fundamental differences in the nature of relief displacement of aerial photograph and RADAR image? Describe 'Fore shortening', 'Layover' and 'Shadows' of RADAR image. What is the advantage of polarized RADAR energy? 10

8. (i) Compare spectral resolution of multispectral and hyperspectral images.
- (ii) What are advantages and disadvantages of Hyperspectral remote sensing ?
- (iii) How to quantify fraction of end members from a mixed pixel composite spectrum ?
2 + 4 + 4
9. Assignment Writing (to be submitted by the candidates before examination) : 10
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