Last date for submission of Assignments is 31-08-2016

Title of the course: PGD-GARD

FIRST Batch (2015)

Course No. GARD-408: Course Title: Spatial Data Analysis and Modelling

ASSIGNMENT

Total Marks: 30

Note: Answers any Six questions, Two from each block.

1. Each question carries Five (5) marks.
2. Assignment should be written on A-4 size with, $1^{1/2}$ space and length of each question should be about 500-800 words.
3. Write neatly without much correction and in your own legible handwriting,
4. Wherever necessary include sketches, photographs, tables and graphs etc.
5. Write clearly Your Name and Enrolment No. on Top of the cover page of the Assignment and this should not be bound with other Assignments

Block-1: Spatial Analysis and Modeling

1. Explain the role of GIS in spatial analysis.
2. Discuss in detail various types of data used in spatial analysis.
3. Write a detail note on map generation.
4. Explain in detail the measurement of length, perimeter and area in vector GIS?
5. Write in detail the various types of reclassification with suitable examples.
6. What do you mean by buffer? Classify the types of buffer.
7. Illustrate vector overlay analysis.
8. Write a note on polygon-on-polygon overlay analysis in vector overlay

Block-2: Network Analysis

9. Explain the concept of network? Classify the network based on its types.
10. Explain in detail about network data model.
11. How a network can be modeled?
12. Explain in detail the steps involved in the creation of network dataset.

13. The shortest path problem – illustrate in detail.
14. Discuss in detail route tracing analysis.
15. Write a detailed note on location-allocation modeling.
16. How GIS can be used to find the service area of a facility?
17. Explain the use of closest facility tool in network analysis.

Block-3: Surface Analysis

18. What is a surface? What are the benefits of terrain analysis?
19. List the sources of data used for generating surfaces?
20. How will you generate Triangular Irregular network?
21. Describe the derivatives from DEM.
22. What is surface analysis? List the tools of surface analysis.
23. Describe viewshed and intervisibility.
24. Explain different interpolation methods.
25. Explain the use of tools of GIS in watershed management.

Last date for submission of Assignments is 31-08-2016

Title of the course: PGD-GARD

FIRST Batch (2015)

Course No. GARD-510: Course Title: Natural Resources Management

ASSIGNMENT

Total Marks: 30

Note: Answers any Six questions, Two from each block.

6. Each question carries Five (5) marks.
7. Assignment should be written on A-4 size with, $1^{1/2}$ space and length of each question should be about 500-800 words.
8. Write neatly without much correction and in your own legible handwriting,
9. Wherever necessary include sketches, photographs, tables and graphs etc.
10. Write clearly Your Name and Enrolment No. on Top of the cover page of the Assignment and this should not be bound with other Assignments

Block-1:

1. Write detail note on applications of Remote Sensing in Water Resources
2. What are the characteristics of sensors used in water quality estimation.
3. Discuss briefly on (a) Hydrological cycle (b) Porosity (c) Permeability (d) Specific yield and Specific Retention (e) Storativity
4. Discuss the following flood forecasting modelling approaches: (a)Computing runoff volume (b)Modelling direct runoff (c) Flood Routing (d) Calibration of the model (e)Model validation
5. Write detail note on Drought Monitoring?
6. What is the role of remote sensing for irrigated command area management?
7. How you will map Water Logging and Soil Salinity in Irrigation Systems?
8. Give a brief note on Monitoring & Assessment of Watershed Interventions?

Block-2:

9. Discuss in brief (a) Rainfall-Runoff Erosivity Factor (b) Quantification of Soil Erosion Using RUSLE
10. (a) Differentiate Freshwater and Brackish water aquaculture (b) Explain the Remote Sensing of Ocean colour

11. (a) What are the factors that affect the soil formation?
    (b) What is interpretative grouping of soils?
12. (a) How microwave remote sensing is useful to agricultural studies
    (b) What are the different methods of LST estimation

Block-3:

13. Explain the different forest types of India and their spatial/geographical occurrence
14. Brief/detail on the advantages and potential of hyperspectral, microwave and LiDAR remote sensing of forests
15. Discuss in detail various methodological steps involved in digital image processing for forest type mapping and forest stock mapping
16. What is biomass? Explain on the spatio-temporal variability of biomass for indian forest types.
17. Give an account of the importance of trees outside forest (TOF) in Indian context; give details on the methods available to extract TOF vis-à-vis the sensors available.
18. Explain in detail on different criteria to be considered to develop a forest management information system.
19. What is wildlife habitat analysis? Explain different spatial and a spatial components in wildlife habitat analysis.
20. Explain in brief on the evolution and services of Indian Bio resource Information Network (IBIN). Give details on the use of IBIN in user's perspective.

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