NATIONAL INSTITUTE OF RURAL DEVELOPMENT & PANCHAYATI RAJ
RAJENDRANAGAR, HYDERABAD – 500 030
POST GRADUATE DIPLOMA IN GEO SPATIAL TECHNOLOGIES APPLICATIONS IN RURAL DEVELOPMENT (PGD-GARD)

7th Batch (2022-23), 1st Semester

Course GARD–501: Geographic Information System

ASSIGNMENT QUESTIONS

Total Marks: 30

INSTRUCTIONS:

❖ Answer any five questions at least one from each Block.
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Block-1: Introduction to GIS Technology

1. Define GIS? Describe the components of GIS?
2. What are the various functional components of GIS?
3. What are the advantages and limitations of raster and vector data model?
4. Explain how spatial features are represented in GIS data models?
5. What are the different kinds of architectural design of GIS? Try to find out under which architecture the Google Earth and ISRO Bhuvan have been designed.

Block -2: Datum & Map Projections

1. Explain about the shape of the Earth and Geoid?
2. Brief about the Reference Coordinate system with its types.
3. What is a projection? What are the three major projections and Explain Mercator projection?
4. What is a Datum? Describe various Global Datums?
5. Define Transformation. How Geographical Coordinates are transformed to Cartesian Coordinate Systems?

Block -3: Data Models and Data Structure

1. Define Topology with its types and Data structure.
2. Explain spatial entities and spatial data models?
3. What are the salient features of spatial data model? Compare and contrast spatial data models?
4. What is Database Management System (DBMS) and explain its advantages?

5. What are the different file formats used to store Raster data and Vector data?
6. What do you mean by data conversion? Describe the process of manual digitization.
7. Explain about sources of error and error correction methods?

Block -4: Spatial Data Analysis

1. Explain about vector and raster data analysis with examples?
2. Explain Terrain Analysis with different methods.
3. Discuss the Map Design and Composition?
4. What is Data mining? Explain the different data mining functionalities?
5. Brief about Virtual GIS and Components of SDSS architecture.

Block -5: Geo-Spatial Services

1. What is COTS and FOSS4G? Explain the possibilities of FOSS4G for Academic and Research Institutes?
2. Explain about Web Services for GIS? Brief about Data Services and Portrayal Services?
3. (a) What do you mean by Spatial Data Infrastructure? Define functionalities of Indian NSDI?
   (b) What are the important components of ISRO Bhuvan Geo-portal?
4. What are the advantages of GIS over cloud? Explain the futures trends of GIS for largedata processing?
5. What are the New Applications and Users of GIS Technology?

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POST GRADUATE DIPLOMA IN GEO SPATIAL TECHNOLOGIES APPLICATIONS IN RURAL DEVELOPMENT (PGD-GARD)
7th Batch (2022-23),1st Semester
Course GARD–502: Satellite Remote Sensing

ASSIGNMENT QUESTIONS

Total Marks: 30

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Block-1: Element of Satellite Remote Sensing

1. Describe Remote Sensing with its Scope, limitations and various applications.
2. What are the different ways in which the energy interacts with the atmosphere?
3. What is EMS? Illustrate its wavelengths with a Diagram
4. (a) Differentiate between Active and Passive Remote Sensing?
   (b) Explain the different types of Scattering.
5. Define spectral signature? Illustrate spectral reflectance of vegetation, water and soil?

Block -2: Satellite, Platforms and Sensors

1. (a) Describe briefly the historical development of Remote Sensing.
   (b) What are the different ways in which the energy interacts with the atmosphere?
2. (a) Differentiate between Polar orbiting and Geo-stationery satellites.
   (b) Differentiate between Aerial and Satellite platforms.
3. Give a brief account of Indian Earth Observation Programme.
4. Describe Some of the Present and Future Indian Satellite/Sensor Systems.
5. What is Thermal Imaging? Explain how it is different from Optical Sensing.

Block -3: Visual Interpretation Techniques and Digital Image Processing

1. (a) Explain the elements of Image Interpretation
   (b) Brief the various operations under Digital Image Enhancement.
2. Brief about different types of errors and corrections involved in Image Displaying.

3. What is Image Classification? Briefly discuss two different methods of classification techniques.
4. Discuss the methodology for Photogrammetric processing of a satellite Stereo Imagery
5. (a) What is achieved by linear contrast enhancement?
   (b) What does the term absolute parallax refer to and how is it useful?

Block -4: Application of Remote Sensing in Rural Development

1. What is a Natural Resources Repository (NRR)? How important it is for sustainable agricultural development practices?
2. Explain how the Remote Sensing and GIS useful for Wildlife Management with examples.
3. What are the different stages in disaster management where the technology plays an important role?
4. Discuss with examples the various application studies carried under land use land cover using satellite imagery.
5. Describe Environment Impact Assessment? Elaborate with examples any environmental study.

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POST GRADUATE DIPLOMA IN GEO SPATIAL TECHNOLOGIES
APPLICATIONS IN RURAL DEVELOPMENT (PGD-GARD)
7th Batch (2022-23), 1st Semester
Course GARD–503: Global Positioning System (GPS)

ASSIGNMENT QUESTIONS

Total Marks: 30

INSTRUCTIONS:

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Block-1: Principles of GPS

1. Write a brief discussion about history of GPS and its advantages.
2. Distinguish between SPS and PPS.
3. What are the major segments of the GPS technology? Describe functionality of each segment?
4. Distinguish between single frequency and dual frequency GPS receivers.
5. Explain GAGAN. How it helps in navigation?
.

Block -2: Operations of GPS

1. Describe the different Positioning modes of GPS?
2. Describe GPS satellite signal components and its importance?
3. List various types of DOP with full forms of each along with quality range of DOP as an indicator to the geometrical strength of the satellites?
4. Discuss types of denial of accuracy to civilian GPS users.
5. What is Differential GPS? Discuss the applications DGPS?

Block -3: Application of GPS.

1. Write a few applications of GPS in Fisheries.
2. What GPS applications in Asset Mapping.
3. Describe GPS Applications in Cadastral Filed Survey?
4. Write GPS Applications in Navigation.
5. Write applications of GPS Tracking System.

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IN RURAL DEVELOPMENT (PGD-GARD)
7th Batch (2022-23),1st Semester
Course GARD–504: Rural Development

ASSIGNMENT QUESTIONS

Total Marks: 30

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Block-1: Concepts, Measures, Indicators of RD

1. Define 'Rural Development'. How do you measure the level of rural development?
2. What is the need for Rural Development? Explain different concepts and connotations of Rural Development.
3. Human Beings as the cause and consequence of Development – Discuss.
4. What are the basic problems of the rural poor? What are various strategies to combat rural poverty?
5. What is the difference between growth and development? Explain the different approaches to development.

Block -2: Rural Poverty

1. Define Rural Poverty. Explain the different concepts of Rural Poverty.
2. Distinguish between absolute poverty and relative poverty. How do you measure the poverty line?
3. What is the role of the government in promoting Rural development? Write a note on different strategies of the government for rural development.
4. What is the trickle-down theory? Explain different approaches of Rural Development
5. Discuss the various ongoing rural development schemes introduced by the Government of India.

Block -3: Poverty Alleviation Programmes

1. Briefly discuss the problems of rural infrastructure in India. Explain different rural infrastructure development programmes.
2. Write a note on Pradhan Mantri Gram Sadak Yojana and its achievements.

3. MGNREGA Achieved So far – Discuss.
4. What is the role of social audit under MGNREGA implementation? Briefly discuss MGNREGS Audit of Scheme Rules, 2011.
5. What is the rural housing scenario? Explain the role of Indira Awaas Yojana in improving rural housing conditions?

Block -4: Government of India Flagship Programmes

1. What is the importance of the Integrated Watershed Management Programme (IWMP)? Explain the convergence of IWMP with other programmes in different states.
2. Illustrate the salient features of the National Land Record Modernization Programme. How do the citizens get benefit through NLRMP?
3. Briefly discuss Aajeevika – National Rural Livelihood Mission (NRLM) and its features.
4. Write a note Mahila Kisan Sashaktikaran Pariyojana.
5. How will NRLM support rural livelihoods through infrastructure and marketing supporting fund?

Block 5: Development of Rural Women and Children

1. Define the concept of Health. Discuss various common diseases in India.
2. Write a note on National Rural Health Mission. What is the role of panchayats under the National Rural Health Mission?
3. Write a note on the Covid-19 outbreak in India
4. Explain the role of Micro-credit in empowering women and reducing poverty.
5. Education is a fundamental right for all – discuss.
6. Briefly discuss National Education Policy, 2020.

Block 6 – Rural Development in Environmental Protection

1. What is the impact of Agro-Chemicals on Human Health?
2. Describe Remediation of Wasteland.
3. What are the different ways of rejuvenating the Rural Environment?
4. Explain the role of Decentralization in the process of Natural Resource Management.
5. Write a note on Rural Anthropogenic Activity.

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7th Batch (2022-23), 1st Semester
Course GARD–505: Project Planning and Management

ASSIGNMENT QUESTIONS

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Block 1- Project Management & Organization

1. Describe the relationship between project phase and the project life cycle?
2. Explain different types of Projects and its characteristics.
3. Describe hygiene factors and discuss about the various organization structures?
4. Explain briefly about the importance of Negotiation skills, political & cultural awareness in Project management?
5. What are the different types of project organization charts? Discuss.

Block 2- Project Initiation

1. What factors need to be considered while identifying projects? What are the different approaches to project identification?
2. Explain in brief about discounting methods of project appraisal?
3. What is SWOT analysis? How is it useful in the strategic planning? What are its limitations?
4. What is economic analysis? What are tangible and intangible benefits – Give two examples?
5. What are the inputs to project selection process? What is the process of project identification and selection?

Block 3- Project Planning & Implementation

1. Explain different types of WBS structure representations?
2. Discuss about Sensitivity analysis and its applications

3. Write about need, importance of optimization and history of linear programming and its applications?
4. What are applications of Sensitivity analysis? Write about one in brief?
5. Explain about Identify Impact Assessment?

Block 4- Network Techniques

1. Define Earliest Activity Start Time, Earliest Activity Finish Time, Latest Activity Start Time, Latest Activity Finish Time?
2. What is a critical path method? Compare CPM with PERT?
3. Briefly describe the Gantt chart and Milestone chart?
4. (a) What is the slack available on a critical path?
   (b) Does dummy activity consume resources?

Block 5-Quality and Risk Analysis

1. Write short note on (a) CBA (b) Pareto Chart (c) Control Chart (d) Run Chart.
2. Define Risk. What are the different types of Risks?
3. Explain the ways and means of planning and controlling quality.
4. What are the steps involved in decision making and to perform a decision tree analysis?

Block-6-Project Monitoring, Evaluation and Control

1. What are the methods of monitoring and steps involved in monitoring?
2. Write briefly about Evaluation and differences between monitoring & evaluation?
3. What is project control? What are the various aspects of project control?

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