

Last date for submission of Assignments is 31-05-2017

Title of the course: **PGD-GARD & PGC-GARD**

Course No. **GARD-401:**

Course Title: **Geographic Information System**

ASSIGNMENT

Total Marks: 30

Note: Answers any SIX questions, choosing at least ONE from each block.

- i. Each question carries Five (5) marks.
- ii. Assignment should be written on A-4 size with, 1^{1/2} space and length of each question should be about 500-800 words.
- iii. Write neatly without much correction and in your **own legible handwriting**,
- iv. Wherever necessary include sketches, photographs, tables and graphs etc.
- v. 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- Introduction to GIS Technology

1. Define GIS? Describe the components of GIS with suitable examples?
2. Explain the various methods of Geodata capture?
3. What are the advantages and limitations of raster and vector data model?
4. List out and describe the GIS analysis functions?
5. Explain how spatial features are represented in GIS data models?
6. What do you understand by the logical design of a system? What are the different kinds of architectural design of GIS?

Block 2- Datum & Map Projections

7. What is Geoid? Difference between WGS 84 and GRS 80?
8. Describe the UTM Grid system with advantages and disadvantages for GIS use.
9. What is a projection? Explain the different types of map Projections.
10. Define Datum? Discuss any two Datums which you know?

Block 3- Data Models and Data Structure

11. What are spatial entities and classify spatial entities? Explain spatial data models?
12. What are the salient features of spatial data model? Compare and contrast spatial data models?
13. What is RDBMS? Describe the advantages and disadvantages over other types.
14. What are the different file formats used to store Raster data and Vector data?
15. What do you mean by data conversion? Describe the process of manual digitization.
16. What are the various sources of errors occur in data inputting? Write a note of on error correction methods?

Block 4- Spatial Data Analysis

17. What is overlay in GIS? Explain different vector overlay operations?
18. What is the difference between vector and raster data analysis? Explain with examples.
19. State various input datasets required for Terrain Modelling? Give process steps for watershed delineation
20. Discuss different data visualisation methods and techniques.
21. (a) What is Data mining? What are the different data mining functionalities?
(b) What is the difference between Data Warehousing and Distributed Databases?
22. Name the broad classes of DSS? Describe five components of SDSS architecture.

Block 5- Geo-Spatial Services

23. What are the advantages of FOSS4G? Brief on GIS customization using open source tools?
24. What is Mobile GIS? Explain applications of Mobile GIS?
25. What is LBS? Explain applications of LBS?
26. (a) What are the major sources of data in google map services?
(b) What are the important components of ISRO Bhuvan Geo-portal?
27. What are the advantages of GIS over cloud? What are the futures trends of GIS for large data processing?

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Last date for submission of Assignments is 31-05-2017

Title of the course : PGD-GARD & PGC-GARD

Course No. GARD – 402

Course Title: Satellite Remote Sensing

ASSIGNMENT

Total Marks: 30

Note: Answers any SIX questions, choosing at least ONE from each block

Each question carries Five (5) marks.

- i. Assignment should be written on A-4 size with, 1^{1/2} space and length of each question should be about 500-800 words.
- ii. Write neatly without much correction and in your own legible handwriting.
- iii. Wherever necessary include sketches, photographs, tables and graphs etc.
- iv. 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-Element of Satellite Remote Sensing

1. (a) Differentiate between Active and Passive Remote Sensing
(b) What are the Elements of Remote Sensing?
2. What are the basic radiation laws? Write their equations and explain the significance of each law.
3. What is EMS? Illustrate its wavelengths with a Diagram?
4. What are the different ways in which the Energy interacts with the Atmosphere?
5. (a) What is Black Body Radiation? Discuss on Stefan-Boltzmann's Law?
(b) Define Rayleigh scattering and Mie Scattering?
6. Define spectral signature? Illustrate spectral reflectance of vegetation, water and soil?

Block 2-Satellite, Platforms and Sensors

7. Discuss on different types of remote sensing data acquisition?
8. Write an overview on different Platforms used for remote sensing?
9. Explain about sun-synchronous orbit and Geo-synchronous orbit, with examples
10. Explain different types of resolutions involved in Remote Sensing with examples.
11. Give a brief account of Indian Earth Observation Programme?
12. Discuss about Resourcesat -2 & SARAL Satellites with their applications?

Block 3-Visual Interpretation Techniques and Digital Image Processing

13. Discuss the elements of Image Interpretation with examples.
14. (a) What is the purpose of georeferencing a satellite image?
(b) What is achieved by linear contrast enhancement?
15. What is image classification? Briefly discuss two different methods of classification techniques?
16. What is classification accuracy? Discuss methods to compute classification accuracy?
17. Discuss concept of training set? Elaborate methods to compute signature of a class from training data?
18. Define Photogrammetry? What are the products generated using the elevation model?

Block 4-Application of Remote Sensing in Rural Development

19. What is a Natural Resources Repository (NRR)? How important it is for sustainable Agricultural development practices?
20. How Groundwater Prospects Map is prepared using Remote Sensing and GIS techniques?
21. What is Water Quality? What Standards are followed in Water Quality studies?
22. Give a brief description of four types of natural disasters in India? How will technology influence disaster management?
23. What is Wildlife Habitat Monitoring? Describe wildlife census and tracking using GPS?
24. What is Biomass? How Forest fire Assessment and monitoring carried using Remote Sensing Data?
25. Describe Environment Impact Assessment? Elaborate with examples different environmental studies?
26. Define Land use and Land cover? Elaborate on Land use Land cover Classification system?

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Title of the course :PGD-GARD & PGC-GARD

Course No. GARD – 403

Course Title: Global Positioning System

ASSIGNMENT

Total Marks: 30

Note: Answers any SIX questions, choosing TWO from each block.

- i. Each question carries Five (5) marks.
- ii. Assignment should be written on A-4 size with, 1^{1/2} space and length of each question should be about 500-800 words.
- iii. Write neatly without much correction and in your **own legible handwriting**.
- iii. Wherever necessary include sketches, photographs, tables and graphs etc.
- iv. 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- Principles of GPS

1. What is Space segment? What are other two different types of segments in GPS?
2. List various frequency bands. What is the importance of L-Band frequencies? Why two frequencies i.e. L1 and L2 are used in GPS?
3. Why two type of codes i.e. C/A and P-coders are used in GPS? What is the accuracy for C/A, P/Y receivers?
4. List all the GNSS system available along with frequencies used.
5. Distinguish between (a) single frequency and dual frequency GPS receivers (b) Code and phase GPS receivers.
6. (a) Distinguish between the quartz clocks, atomic clocks and MASER
(b) How do you benefit from GPS modernized signals?
7. (a) Explain the need of SBAS?
(b) Explain GAGAN. How it helps in navigation?

Block 2-Operations of GPS

8. Describe GPS satellite signal components and its importance.
9. Discuss the accuracy and limitation of GPS.
10. Describe the different positioning mode of GPS.
11. Describe briefly the spatial reference system with examples?
12. What are plate tectonics? How it affects realization of reference frames?
13. Explain three different time systems that are used in GIS and space geodesy?
14. (a) Discuss the role of GPS In navigation
(b) Discuss the applications of DGPS.

Block 3-Application of GPS

15. What are Potential Fishing Zones? Write a few applications of GPS in fisheries.
16. What are the advantages of GPS in precision farming? Write a few applications of GPS in precision farming?
17. What is a Cadastral map? Discuss on Cadastral survey using GPS/DGPS.
18. What is GPS navigation? Write the advantages of GPS in Aviation and Space navigation?
19. What is GPS tracking? What are the limitations of GPS tracking? Brief on Passive GPS Tracking System?
20. What is precision farming? What are advantages of GPS in precision farming?
21. What is the different between Cadastral survey and Asset mapping for a parcel?
22. (a)Write a short note on GPS navigation?
(b)Write the advantages of GPS in Aviation.
23. (a)What are the advantages of GPS in space navigation?
(b)What is constellation control in space navigation?
24. What are the components of Location Based Services? Explain.

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Last date for submission of Assignments is 31-05-2017

Title of the course : PGD-GARD & PGC-GARD

Course No. GARD – 404

Course Title: Rural Development

ASSIGNMENT

Total Marks: 30

Note: Answers any SIX questions, Choosing ONE from each block.

- i. Each question carries Five (5) marks.
- ii. Assignment should be written on A-4 size with, 1^{1/2} space and length of each question should be about 500-800 words.
- iii. Write neatly without much correction and in your **own legible handwriting**.
- iv. Wherever necessary include sketches, photographs, tables and graphs etc.
- v. 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- Concepts, Measures, Indicators of RD

1. What are the objectives of Rural Development? Discuss the basic elements of Rural Development?
2. Write brief note on PRA. What are the advantages and limitations of wealth ranking done using PRA.
3. What are the aspects that can be taken for successful economic development?
4. What is social development? Write a brief note on Social Structure.
5. What are the problems in measuring rural development? Which is the most appropriate measures of development and why?

Block 2-Rural Poverty

6. What is a Rural Poverty? Discuss brief about issues of Rural Poverty.
7. Discuss effective approaches for Rural Development?
8. Discuss Absolute Poverty Line versus Relative Poverty Line? Write a brief note on Indian Poverty Line?

9. What are aspects that can be taken in measuring poverty? Discuss the factors affecting Poverty?
10. Write a brief note on Employment Assurance Scheme & Wage Employment Programmes?

Block 3-Poverty Alleviation Programmes

11. Bring out the types of anti-poverty measures initiated by the Government of India.
12. Explain the components of Bharat Nirman. Write salient features of PMGSY.
13. Briefly discuss about the National Drinking Water Programme (NRDWP).
14. Explain in brief the problems of rural housing in India. Discuss the National Housing Policy?
15. Illustrate the Salient Features of the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) and Discuss Convergence with IWMP.

Block 4-Government of India Flagship Programmes

16. Comment on IWMP progress on any of the State.
17. Briefly mention the main components of the NLRMP? Discuss the benefits for the Citizens from NLRMP Programme.
18. Explain Computerization of Registration? Discuss Land records management systems Modernization?
19. Discuss about the Non Timber Forest Produce?

Block 5-Development of Rural Women and Children

20. Comment on the health practices and problems in rural India
21. Describe shortly the National Rural Health Mission (NRHM) set up.
22. Give a brief note on the Micro-Credit, Poverty Reduction and Empowerment.
23. Explain the Scale of Micro-Credit in India and Major Initiatives in Rural Credit in India?
24. Explain the Constitutional Provisions for Education in India and Give a brief note on Sarva Shiksha Abhiyan.

Block-6 - Rural Development in Environmental Protection

25. What do you mean by Strategic Environmental Assessment under EIA?
26. Describe the Environmental Appraisal Procedure?
27. Explain EIA for Coastal Area Management?
28. Write a short note on the Impact of Agro-Chemicals on Human Health.
29. Explain the Need for Climate-smart agriculture, green agriculture and rural nonfarm activities.
30. Write a short note on the Green technologies and Evergreen Revolution.

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Last date for submission of Assignments is 31-05-2017

Title of the course: PGD-GARD & PGC-GARD

Course No. GARD – 405

Course Title: Project Planning & Management

ASSIGNMENT

Total Marks: 30

Note: Answer any Six questions, Choosing ONE from each block.

- i. Each question carries Five (5) marks.
- ii. Assignment should be written on A-4 size with, 1^{1/2} space and length of each question should be about 300-500 words.
- iii. Write neatly without much correction and in your own legible handwriting.
- iv. Wherever necessary include sketches, photographs, tables and graphs etc.
- v. 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- Project Management & Organization

1. Define project life cycle and what are its phases explain it briefly?
2. Define Project? Different types of Projects and its characteristics.
3. What are the various organization structures? What does the term organization structure mean?
4. Who are Project Managers? What are the responsibilities and skills of Project Manager?
5. What are the different types of project organization charts? Discuss.

Block 2- Project Initiation

6. Discuss the Non-Discounting and Discounting criteria used for project appraisal. Use examples where required.
7. What is time value of money? Explain it in brief?
8. What is SWOT analysis? How is it useful in the strategic planning? What are its limitations?

9. What is technical analysis? Describe the various components of technical analysis.
10. Describe the steps involved in solving the TOPSIS and SAW with an example?

Block 3- Project Planning & Implementation

11. Write about the EIA review and monitoring and Audit.
12. Define the terms: Linearity, Function, Linear equation and Linear function?
13. What are applications of Sensitivity analysis? Write about one in brief?
14. What are the different types of WBS structure representations?

Block 4- Network Techniques

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

Block 5- Quality and Risk Analysis

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

Block-6- Project Monitoring Evaluation and Control

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

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