

**Assignment Booklet****POST GRADUATE CERTIFICATE IN GEOINFORMATICS  
(PGCGI)****ASSIGNMENTS  
JANUARY & JULY 2017 CYCLES**

Valid from January 1, 2017 to December 31, 2017

Tutor Marked Assignments (TMA) for  
**MGY-001**  
**MGY-002, &**  
**MGY-003**

It is compulsory to submit the Assignments before filling in the  
Term-End Examination (TEE) Form



**School of Sciences**  
**Indira Gandhi National Open University**  
**Maidan Garhi, New Delhi-110 068 (INDIA)**

**(2017)**

Dear Learner,

Welcome to the Post Graduate Certificate Programme in Geoinformatics (PGCGI).

As per the laid down guidelines of the University, you have to complete the assignment for each course. Each assignment has 10 questions. All the questions are compulsory. It is important that you should write the answers to all the questions in your own words. You should remember that writing answers to assignment questions will improve your writing skills and prepare you for the term-end examination.

This booklet includes assignments for the following three courses:

**MGY-001: Introduction to Geoinformatics**

**MGY-002: Remote Sensing and Image Interpretation**

**MGY-003: Global Navigation Satellite System and Geographic Information System**

**It is compulsory to submit the assignments within the stipulated time to be eligible for appearing the term-end examination.** You will not be allowed to appear for the term-end examination for a course if you do not submit the assignment for that course within the due date. If you appear in the term-end examination of a course without submitting its assignment, the result of the term-end examination is liable to be cancelled/ withheld.

The assignments constitute the continuous component of the evaluation process and have 30% weightage in the final grading.

Before you write the assignments, first go through the course material and then prepare the assignments carefully by following the instructions pertaining to assignments. Your responses should not be a verbatim reproduction of the textual materials provided for self-learning purposes but it should be in your own words.

If you have any doubt or problem pertaining to the course material and assignments, contact the concerned Programme in-charge or Academic Counsellor at your Study Centre. If you still have problems, do feel free to contact us at School of Sciences.

Wishing you all the best to complete the programme successfully.

**Dr. Benidhar Deshmukh**  
**Programme Coordinator - PGCGI**  
**School of Sciences**  
**e-mail: [pgcgi@ignou.ac.in](mailto:pgcgi@ignou.ac.in)**

## INSTRUCTIONS

1. On the first page of the assignment response sheet, write the course code, course title, assignment code, name of your programme study centre (PSC) and date of submission.
2. Your enrollment number, name and full address should be mentioned on the top right corner of the first page.
3. Write the Course title, assignment number and the name of the study centre you are attached to, in the centre of the first page of your response sheet.
4. The top of the first page of your response sheet should be like the following:

NAME: .....

ENROLLMENT NO.: .....

CYCLE OF ADMISSION: .....

PROGRAMME CODE: .....

ASSIGNMENT CODE: .....

COURSE CODE: .....

COURSE TITLE: .....

REGIONAL CENTRE CODE: .....

STUDY CENTRE: .....

ADDRESS: .....

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CONTACT NUMBER: .....

DATE OF SUBMISSION: .....

**Follow the above format strictly.** If you do not follow this format, your script will be returned to you and you will be asked for re-submission.

5. Read the instructions related to assignments given in the Programme Guide.
6. Please note that unless you submit the assignments contained in this booklet within the stipulated time, you would not be permitted to appear for the term-end examination.

**Note the following points before you start writing the assignments:**

- Use only A-4 size paper for writing your responses. Only hand written assignments will be accepted. **Typed or printed copies of assignments will not be accepted.**
- Tie the pages after numbering them carefully.
- Write the question number for each answer.
- All the questions are compulsory.
- Keep a copy of the assignment answer sheets with you before submission for future reference.
- Answer each assignment on separate sheet.
- It is mandatory to write all assignments neatly in **your own handwriting. Write Your Name, Course Code, Enrollment No. and Cycle of admission** on all the assignments in bold letters.
- **Express your response in your own words. You are advised to restrict your response based on the marks assigned to it. This will also help you to distribute your time in writing or completing your assignments on time.**
- **The assignment has to be submitted at your Study Centre.**

You have to submit their completed assignments at the **Study Centre** allotted to you before the due date as mentioned.

**It is desirable to keep with you a photocopy of the assignment/s submitted by you.**

You have to submit the assignments to the Study Centre by **31<sup>st</sup> March, 2017** (for January 2017 Cycle) if you wish to appear in the June 2017 TEE and by **30<sup>th</sup> September, 2017** (for July 2017 Cycle) if you wish to appear in the December 2017 TEE.

**Due Date of Submission: For January 2017 Cycle: March 31, 2017  
For July 2017 Cycle: September 30, 2017**

# Tutor Marked Assignment

## MGY-001: Introduction to Geoinformatics

Course Code: MGY-001

Assignment Code: MGY-001/TMA/2017

Max. Marks: 100

- Note:**
- \* This assignment is based on the entire course.
  - \* It is compulsory to answer all the questions. The marks for each question are indicated against it within brackets on the right hand side.
  - \* Please write all answers in your own words; do not copy from the course material.
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1. Describe national agencies utilising geoinformatics technologies in about 450 words. (15)
2. Discuss recent trends and developments in the field of geoinformatics in about 300 words. (10)
3. Write short notes on the following in about 150 words each:
  - a) Landuse and landcover classification system (5)
  - b) Application of geoinformatics in urban sprawl studies (5)
  - c) Quantum GIS (5)
4. Briefly discuss the following:
  - a) Vector data (3)
  - b) Segments of GPS (3)
5.
  - a) What is web GIS? (2)
  - b) List different sensors used in the study of air pollution. (2)
6. Write in detail about the application of geoinformatics in natural resources studies and management. (15)
7. Explain different types of data products. (10)
8. Write notes on the following:
  - a) Map projection (5)
  - b) BIL data format (5)
  - c) Application of geoinformatics in the field of archeology (5)
9. Discuss important physical features portrayed in a topographical map. (6)
10. Define the following terms:
  - a) Scale (2)
  - b) DEM. (2)

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# Tutor Marked Assignment

## MGY-002: Remote Sensing and Image Interpretation

Course Code: MGY-002

Assignment Code: MGY-002/TMA/2017

Max. Marks: 100

- Note:**
- \* This assignment is based on the entire course.
  - \* It is compulsory to answer all the questions. The marks for each question are indicated against it within brackets on the right hand side.
  - \* Please write all answers in your own words; do not copy from the course material.
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1. Discuss the principles of remote sensing. Write your response in about 450 words giving suitable figures, wherever required. (15)
2. Give an account on different types of remote sensing sensors in about 300 words. (10)
3. Write short notes on the following in about 150 words each:
  - a) Spatial resolution (5)
  - b) LISS-III (5)
  - c) Landsat. (5)
4. Briefly discuss the following:
  - a) Scattering (3)
  - b) Spectral signature (3)
5. Define the following terms:
  - a) Atmospheric windows (2)
  - b) Electromagnetic spectrum. (2)
6. Mention different approaches to image classification. Discuss any one approach in detail. Write your response in about 450 words. (15)
7. Give an account on different sampling patterns for the collection of ground truth data in about 300 words with figures/diagrams wherever required. (10)
8. Write short notes on the following:
  - a) Image interpretation keys (5)
  - b) Land use and land cover classes (5)
  - c) Producer's and user's accuracy (5)
9. Explain the methods of geometric correction of an image. (6)
10. Define the following:
  - a) Contrast image enhancement (2)
  - b) Minimum mapping unit. (2)

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## Tutor Marked Assignment

### MGY-003: Global Navigation Satellite System and Geographic Information System

Course Code: MGY-003

Assignment Code: MGY-003/TMA/2017

Max. Marks: 100

- Note:**
- \* This assignment is based on the entire course.
  - \* It is compulsory to answer all the questions. The marks for each question are indicated against it within brackets on the right hand side.
  - \* Please write all answers in your own words; do not copy from the course material.
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1. Discuss important characteristics of GPS, GLONASS and GALILEO navigation satellite systems. (15)
2. What do you understand by data quality? Discuss the components of data quality. Also add a note on types of errors. Write your answer in about 300 words. (10)
3. Write short notes on the following in about 150 words each:
  - a) Data and information (5)
  - b) Organisational aspects of GIS (5)
  - c) Spatial and non-spatial data. (5)
4. Briefly discuss the following:
  - a) DGPS (3)
  - b) Quadtree data structure (3)
5. Define the following terms:
  - a) Interoperability (2)
  - b) Selective availability (2)
6. Discuss the advantages of raster and vector data models. Write your response in about 450 words. (15)
7. Discuss the basic operations in vector analysis in about 300 words. Give suitable examples, wherever necessary. (10)
8. Write short notes on the following:
  - a) Map symbolisation (5)
  - b) Non-cartographic GIS outputs (5)
  - c) Area definition and contiguity. (5)
9. Discuss the sources of error in GPS observation. (6)
10. Briefly answer the following:
  - a) Systems life cycle approach (2)
  - b) Triangular Irregular Network. (2)

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