

Assignment Booklet**POST GRADUATE CERTIFICATE IN GEOINFORMATICS
(PGCGI)****ASSIGNMENTS
JANUARY & JULY 2016 CYCLES**

Valid from January 1, 2016 to December 31, 2016

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)**

(2016)

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 Academic Counsellor at your Study Centre. If you still have problems, do feel free to contact us at School of Sciences.

Wish you all the best to complete the programme successfully.

Dr. Benidhar Deshmukh
Programme Coordinator - PGCGI
School of Sciences
e-mail: 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:
.....
.....
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 **31st March, 2016** (for January 2016 Cycle) if you wish to appear in the June 2015 TEE and by **30th September, 2016** (for July 2016 Cycle) if you wish to appear in the December 2016 TEE.

Due Date of Submission: For January 2016 Cycle: March 31, 2016
For July 2016 Cycle: September 30, 2016

Tutor Marked Assignment

MGY-001: Introduction to Geoinformatics

Course Code: MGY-001

Assignment Code: MGY-001/TMA/2016

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 the components of geoinformatics in about 450 words. (15)
2. Discuss the recent trends in GIS in about 300 words. (10)
3. Write short notes on the following in about 150 words each:
 - a) Map Projections (5)
 - b) Types of spatial data (5)
 - c) Free and open source software (FOSS). (5)
4. Briefly answer the following:
 - a) Differentiate between data and information. (3)
 - b) Differentiate between precision and accuracy. (3)
5.
 - a) List out the components of an ecosystem. (2)
 - b) Name different sensors used in meteorological studies. (2)
6. Write in detail about the role of geoinformatics in e-governance. (15)
7. Discuss the different types of data products. (10)
8. Write notes on the following:
 - a) Bhuvan (5)
 - b) BSQ data format (5)
 - c) Applications of thermal remote sensing. (5)
9. Discuss the visual aspects of maps. (6)
10. Define the following terms:
 - a) Map scale (2)
 - b) Metadata. (2)

Tutor Marked Assignment

MGY-002: Remote Sensing and Image Interpretation

Course Code: MGY-002

Assignment Code: MGY-002/TMA/2016

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. What is spectral signature? Discuss in detail the spectral signatures of vegetation, soil, water and rocks. Write your response in about 450 words. (15)
2. Give an account of different types of image resolutions in about 300 words. (10)
3. Write short notes on the following in about 150 words each:
 - a) Geosynchronous orbit (5)
 - b) Active sensors (5)
 - c) Cartosat. (5)
4. Briefly answer the following:
 - a) Atmospheric windows (3)
 - b) Remote sensing system. (3)
5. Define the following terms:
 - a) Non-selective scattering (2)
 - b) Electromagnetic spectrum. (2)
6. What is accuracy assessment? Discuss in detail the methods of calculation of classification accuracy. (15)
7. Explain the elements of visual image interpretation and image interpretation keys. (10)
8. Write short notes on the following:
 - a) Advantages of digital image processing (5)
 - b) Significance of image histogram (5)
 - c) Difference between landcover and landuse classes. (5)
9. Explain the methods of ground truth data collection. (6)
10. Write short notes on the following:
 - a) Geometric errors (2)
 - b) Histogram equalisation. (2)

Tutor Marked Assignment

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

Course Code: MGY-003

Assignment Code: MGY-003/TMA/2016

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. Explain GIS data models in about 450 words. Support your answers with suitable diagrams wherever necessary. (15)
2. What is data quality? Discuss in detail the data quality issues. Write your answer in about 300 words. (10)
3. Write short notes on the following in about 150 words each:
 - a) Object-oriented model (5)
 - b) Map digitisation (5)
 - c) Organisational aspects of GIS. (5)
4. Briefly answer the following:
 - a) Format conversion (3)
 - b) Quadtree data structure. (3)
5. Define the following terms:
 - a) Spatial query (2)
 - b) Data consistency. (2)
6. Discuss the sources of errors in GPS measurements. (15)
7. Write an account on vector analysis giving suitable examples of basic operation. (10)
8. Write short notes on the following:
 - a) Types of database (5)
 - b) Non-cartographic GIS outputs (5)
 - c) GAGAN. (5)
9. Explain the approaches and models of GIS design. (6)
10. Briefly answer the following:
 - a) Real time DGPS (2)
 - b) Geovisualisation. (2)
