

**Assignment Booklet****POST GRADUATE CERTIFICATE IN GEOINFORMATICS  
(PGCGI)****ASSIGNMENTS  
JANUARY & JULY 2020 CYCLES**

Valid from January 1, 2020 to December 31, 2020

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)**

**(2020)**

Dear Learner,

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

As per the laid down guidelines of the University, you need to complete the assignment for each course. Each assignment has 8 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.

**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: .....

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CONTACT NUMBER: .....

DATE OF SUBMISSION: .....

**Strictly follow the above format.** 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 set by the University.

**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, 2020** (for January 2020 Cycle) if you wish to appear in the June 2020 TEE and by **30<sup>th</sup> September, 2020** (for July 2020 Cycle) if you wish to appear in the December 2020 TEE.

**Due Date of Submission\*:** For January 2020 Cycle: **March 31, 2020**  
For July 2020 Cycle: **September 30, 2020**

\* Please note that last date of submission may be changed by the University. Please check IGNOU website for the due date of assignment submission.

# Tutor Marked Assignment

## MGY-001: Introduction to Geoinformatics

**Course Code: MGY-001**  
**Assignment Code: MGY-001/TMA/2020**  
**Max. Marks: 100**

**Note:** \*It is compulsory to answer all the questions.

\*The marks for each question are indicated against it.

\*Write all answers in your own words; do not copy from the course material.

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Q. No.		Marks
1.	Write Short notes on the following:	
	(a) Cartography	(5)
	(b) Band Sequential (BSQ)	(5)
	(c) Geoinformatics products	(5)
2.	Discuss the advantages and disadvantages of Commercial Off-The-Shelf Software (COTS) and Free Open Source Software (FOSS).	(10)
3.	What is geospatial data? Discuss different types of geospatial data.	(10)
4.	Discuss about the use of geoinformatics in e-governance and the initiatives of Indian Government in this regard.	(15)
5.	Differentiate between the following:	
	(a) Raster and vector data	(5)
	(b) Panchromatic and multispectral data	(5)
	(c) Degree and Quarter Degree maps	(5)
6.	Write short notes on the following:	
	(a) Steps for interpretation of topographical map	(5)
	(b) Identification of land use/land cover features	(5)
	(c) Temporal Data	(5)
7.	Describe the application of geoinformatics in flood forecasting.	(10)
8.	What is map projection? Discuss different types of map projections with suitable diagrams.	(10)

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# Tutor Marked Assignment

## MGY-002: Remote Sensing and Image Interpretation

**Course Code: MGY-002**  
**Assignment Code: MGY-002/TMA/2020**  
**Max. Marks: 100**

**Note:** \*It is compulsory to answer all the questions.

\*The marks for each question are indicated against it.

\*Write all answers in your own words; do not copy from the course material.

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Q. No.		Marks
1.	Write short notes on the following:	
	(a) Remote sensing system	(5)
	(b) Electromagnetic Spectrum	(5)
	(c) Purpose of ground truth data collection	(5)
2.	Describe and compare the spectral signatures of vegetation, soil, water and rocks. Support your answer with suitable figures.	(10)
3.	Give an account of multispectral imaging sensor systems. Cite suitable example for each sensor system.	(10)
4.	What is image resolution? Discuss the four types of image resolutions giving suitable examples.	(15)
5.	Differentiate between the following:	
	(a) Scattering and absorption	(5)
	(b) Geosynchronous and Sunynchronous orbits	(5)
	(c) Geometric and radiometric corrections.	(5)
6.	Write short notes on the following:	
	(a) Steps involved in producing a land cover/land use map	(5)
	(b) NDVI and its use.	(5)
	(c) Image histogram and its advantages.	(5)
7.	Explain the elements and keys of image interpretation.	(10)
8.	Discuss in detail the methods of calculation of classification accuracy.	(10)

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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/2020**  
**Max. Marks: 100**

**Note:** \*It is compulsory to answer all the questions.

\*The marks for each question are indicated against it.

\*Write all answers in your own words; do not copy from the course material.

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<b>Q. No.</b>		<b>Marks</b>
1.	Write short notes on the following:	
	(a) GIS as a science and a technology	(5)
	(b) GPS survey	(5)
	(c) GLONASS	(5)
2.	What is data integration? Discuss the types of data integration.	(10)
3.	Discuss the types of GIS outputs. Add a note on geovisualisation.	(10)
4.	Discuss raster and vector data models. Add a note on advantages and disadvantages of raster and vector data models	(15)
5.	Differentiate between the following:	
	(a) Georeferencing and image registration	(5)
	(b) System Life Cycle and Prototyping approaches of GIS design	(5)
	(c) Accuracy and precision	(5)
6.	Write short notes on the following:	
	(a) Trilateration	(5)
	(b) Overlay.	(5)
	(c) History of GNSS	(5)
7.	Discuss the examples of topological modelling.	(10)
8.	Describe DGPS with the help of neat well labelled diagram. Add a note on sources of errors of DGPS.	(10)

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