PGCGI

Assignment Booklet

POST GRADUATE CERTIFICATE IN GEOINFORMATICS (PGCGI) PROGRAMME

ASSIGNMENTS
JANUARY & JULY 2015 CYCLES

Valid from January 1, 2015 to December 31, 2015

It is compulsory to submit the Assignment before filling in the Term-End Examination Form

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

(2015)

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. All the assignments of this programme are part of the continuous evaluation process.

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 Counselor 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
School of Sciences
e-mail: bdeshmukh@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 xerox copy of the assignments 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, 2015** (for January 2015 Cycle) if you wish to appear in the June 2015 TEE and by **30th September, 2015** (for July 2015 Cycle) if you wish to appear in the December 2015 TEE.

Due Date of Submission: For January 2015 Cycle: March 31, 2015
For July 2015 Cycle: September 30, 2015

Tutor Marked Assignment

MGY-001: Introduction to Geoinformatics

Course Code: MGY-001
Assignment Code: MGY-001/TMA/2015
Max. Marks: 100

Note: All questions are compulsory. The marks for each question are indicated against it. Write all answers in your own words.

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1. Elaborate on the sources of geospatial data in about 450 words. (15)
2. Describe the role of national agencies in utilisation of geoinformatics technologies. (10)
3. Discuss the following in about 150 words each:
   a) Global Positioning System. (5)
   b) Optical Remote Sensing. (5)
   c) Data products. (5)
4. Briefly answer the following:
   a) Applications of remote sensing. (3)
   b) Career options in geoinformatics. (3)
5. a) What is 3D GIS? (2)
   b) Differentiate between data and information. (2)
6. Explain the applications of geoinformatics technologies for Earth resources management in about 450 words. Support your answers with suitable Indian examples (15)
7. Describe the role of geoinformatics in agriculture related studies. (10)
8. Write short notes on the following:
   a) Map Projection. (5)
   b) Universal Transverse Mercator. (5)
   c) Datum. (5)
9. What are the important physical features used in the interpretation of a topographical map? (6)
10. Define the following terms:
    a) Contour. (2)
    b) Graphical scale. (2)

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Tutor Marked Assignment

MGY-002: Remote Sensing and Image Interpretation

Course Code: MGY-002
Assignment Code: MGY-002/TMA/2015
Max. Marks: 100

Note: All questions are compulsory. The marks for each question are indicated against it. Write all answers in your own words.

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1. Describe multispectral imaging sensor system and also mention the common types of scanning modes used in the scanning systems. (15)
2. Discuss in ~300 words about the remote sensing satellites series of ISRO. (10)
3. Write short notes in about 150 words each on the following:
   a) Rayleigh scattering. (5)
   b) Atmospheric window. (5)
   c) Spectral signature of vegetation. (5)
4. Briefly answer the following:
   a) Properties of electromagnetic radiation. (3)
   b) Spectral signature of soil. (3)
5. Define the following terms:
   a) Absorption. (2)
   b) Transmission. (2)
6. What is image classification? Discuss any two approaches of image classification. Write your response in about 450 words. (15)
7. Explain the sampling methods involved in ground truth data collection in about 300 words. (10)
8. Write short notes on the following:
   a) Difference between image enhancement and image transformation. (5)
   b) Types of digital images. (5)
   c) Elements of image interpretation. (5)
9. Explain briefly the role of visual image interpretation in landuse and land cover studies. (6)
10. a) What is error matrix? (2)
    b) List radiometric errors. (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/2015
Max. Marks: 100

Note: All questions are compulsory. The marks for each question are indicated against it. Write all answers in your own words.

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1. Describe the methods of vector data input in about 450 words. (15)
2. Explain topological modelling in about 300 words giving suitable examples, wherever necessary. (10)
3. Write short notes on the following in about 150 words each:
   a) Difference between accuracy and precision. (5)
   b) Components of GIS. (5)
   c) GIS data models. (5)
4. Briefly answer the following:
   a) Data integration. (3)
   b) Data consistency. (3)
5. Define the following terms:
   a) Structured query language. (2)
   b) Database management system. (2)
6. Discuss the principles of operation of GPS instrument in about 450 words. (15)
7. What are the basic operations in raster analysis? Support your answers with suitable examples. (10)
8. Write short notes on the following:
   a) Indian scenario related to GNSS. (5)
   b) Galileo. (5)
   c) Types of GIS outputs. (5)
9. Describe components of GIS design. (6)
10. Define the following terms and draw diagram, wherever, necessary:
    a) DGPS. (2)
    b) Trilateration. (2)

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