

**DWM**

**ASSIGNMENT BOOKLET**  
**for**  
**Academic Year 2024**

**DIPLOMA IN WATERSHED MANAGEMENT (DWM)**

(A collaborative programme with Department of Land Resources, Ministry of Rural Development, Govt. of India)

**Note:** First of all, read the assignment/questions and instructions carefully and identify the components of an assignment. You should read the relevant sections and sub-sections of a unit while preparing your responses and write answers in your own words. Your responses should not be a verbatim reproduction of the textual materials/blocks provided for self-learning purposes. We also suggest that, you may read additional materials available in your study centre or in any other library before preparing your responses. However, extra reading is not a must to answer these assignments.



**School of Agriculture**  
**Indira Gandhi National Open University**  
**New Delhi -110068**  
**January 2024**

Dear student,

Welcome to the “Diploma in Watershed Management” (DWM) programme.

We hope that you have gone through the Programme Guide of DWM programme carefully. It is extremely important to complete the assignments within the stipulated time to be eligible to appear for the term-end examination. All the assignments of DWM programme are Tutor Marked Assignments (TMAs) and are part of the continuous evaluation process. The weightage to the Term-End Examination (TEE) will be 80% and Continuous Assessment (Assignment) will be 20%. There is one assignment for each course (Except BNRP-108) with theory component, thus, a total of seven assignments for this programme. Each assignment will be of 50 marks which will be converted to have weightage of 20% of theory component.

### Instructions to format your assignments

1. Before you write the assignments, read the instructions provided in the Programme Guide carefully and go through the course materials.
2. You are requested to go through the course material first and then complete the assignments. Your answers should not be a verbatim reproduction of the textual materials/blocks provided for self-learning purposes.
3. Use foolscap size paper for writing your answer. Leave 4 cm margin on the top, bottom and left of your answer sheet. Clearly indicate question no. and part of the question being solved while writing answers.
4. The Assignments should be sent or submitted to the Programme In-charge (PIC) of the Study Centre allotted to you.
5. We strongly suggest that you should retain a copy of your assignment responses.
6. On top of the first page of your answer sheet, please write the details exactly in the following format.

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Enrollment no:.....  
Name:.....  
Address:.....  
.....  
.....

Course Code:.....

Course Title:.....

Study Centre:.....

Date:.....

(Name and Code)

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7. If you have any doubts or problems pertaining to the courses and assignments, do feel free to contact us at the School of Agriculture.

**Please submit your assignments at the Study Centre allotted to you before the due date as mentioned below:**

Course Code	Last Date for January 2024 Session
BNRI-101 and BNRI-102	31 <sup>st</sup> May 2024
BNRI-103 and BNRI-104	31 <sup>st</sup> July 2024
BNRI-105, BNRI-106 and BNRI-107	25 <sup>th</sup> September 2024

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Happy Learning! Wish you all good luck for successful completion of the programme.

**School of Agriculture**  
*Indira Gandhi National Open University,  
Maidan Garhi, New Delhi-110068, India.*

**Course Code: BNRI-101**  
**Course Title: Fundamentals of Watershed Management**

Maximum Marks: 50

**Note: Answer all the questions. Answer each question in about 500 words. All questions carry equal marks.**

1. What is watershed management? Describe its need, focus, and objectives.
2. Describe different watershed characteristics. Explain criteria for selection of watersheds.
3. What is Remote Sensing (RS) and Geographical Information System (GIS)? Explain their role in watershed management.
4. Describe the organizational set up envisaged in the Common Guidelines 2008 to ensure effective implementation of watershed projects.
5. Describe the year wise activities undertaken during different phases of the watershed project.

**Course Code: BNRI-102**  
**Course Title: Elements of Hydrology**

Maximum Marks: 50

**Note: Answer all the questions. Answer each question in about 500 words. All questions carry equal marks.**

1. Describe the entire process of circulation and redistribution of water by the atmosphere and the earth along with a neat sketch.
2. Explain the Rational method of peak runoff estimation. Write its assumptions.
3. Define infiltration. Describe the procedure of its measurements. Enlist different factors affecting infiltration.
4. Describe the channel types and their characteristics with suitable examples. What is seepage losses? Explain the factors affecting the seepage losses.
5. Discuss the advantages of recording type rain gauge over non-recording type rain gauge. Explain the Thiessen polygons method of mean rainfall measurement. Describe their limitations also.

**Course Code: BNRI-103**  
**Course Title: Soil and Water Conservation**

Maximum Marks: 50

**Note: Answer all the questions. Answer each question in about 500 words. All questions carry equal marks.**

1. Define soil erosion. Explain causes of soil erosion. Describe the different forms of water erosion.
2. Describe Universal Soil Loss Equation (USLE) for estimation of water erosion losses along with defining its various terms.
3. Describe the processes of wind erosion. Explain the factors affecting wind erosion.
4. Describe biological and agronomic measures to control soil erosion.
5. Define artificial groundwater recharge. Write advantages of artificial groundwater recharge. Enlist methods of artificial groundwater recharge.

**Course Code: BNRI-104**  
**Course Title: Rainfed Farming**

Maximum Marks: 50

**Note: Answer all the questions. Answer each question in about 500 words. All questions carry equal marks.**

1. Define rainfed farming and write its characteristics. Explain the detrimental effects of unfavourable weather conditions on rainfed farming.
2. What are the management practices for aberrant weather conditions (local and improved), explain?
3. What is crop diversification? Describe the suggested crop diversification in rainfed regions of India.
4. Describe the on-field water conservation.
5. Explain sprinkler irrigation method. Discuss the advantages and disadvantages of sprinkler irrigation.

**Course Code: BNRI-105**  
**Course Title: Livestock and Pasture Management**

Maximum Marks: 50

**Note: Answer all the questions. Answer each question in about 500 words. All questions carry equal marks.**

1. Define the following terms:
  - a. Service Period
  - b. Balanced Ration
  - c. Paddock
  - d. Crossbreeding
  - e. Concentrate
  - f. Heifer
  - g. Barn
  - h. Flock

- i. Ewe
- j. Hen
2. Discuss about the detection of oestrus and artificial insemination in dairy cows.
3. Describe the strategies for control and eradication of diseases in farm animals?
4. Discuss about feeding of lactating and dry cows.
5. List the different techniques of feed processing and conservation of fodder. Differentiate between Hay and Silage.

**Course Code: BNRI-106**  
**Course Title: Horticulture and Agroforestry System**

Maximum Marks: 50

**Note: Answer all the questions. Answer each question in about 500 words. All questions carry equal marks.**

1. What is agroforestry? Write its basic concept, importance and scope.
2. What is nursery raising? Write advantages of modern nursery system. Describe the classification of nursery based on size and business.
3. Describe the common methods used for drying of fruits and vegetables.
4. Explain the importance of fruit and vegetable marketing. Write different factors influencing marketing of fruits and vegetables. Explain marketing channels.
5. Describe five medicinal and five aromatic plants.

**Course Code: BNRI-107**  
**Course Title: Funding, Monitoring Evaluation and Capacity Building**

Maximum Marks: 50

**Note: Answer all the questions. Answer each question in about 500 words. All questions carry equal marks.**

1. Explain the process of allocation of funds, approval of projects and release of funds for watershed projects in India.
2. Describe the concept, structure and characteristics of microfinance in India.
3. What is monitoring? Explain the monitoring mechanism at various levels for watershed development projects in India.
4. Describe the capacity building at various levels in watershed programmes.
5. Explain the principles and process of extension education. Describe the teaching methods in watershed extension.