

DWM

**ASSIGNMENT BOOKLET
FOR
ACADEMIC YEAR 2020**

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. But extra reading is not a must to answer these assignments.



**School of Agriculture
Indira Gandhi National Open University
New Delhi -110068
2020**

Dear student,

Welcome to the “Diploma in Watershed Management” (DWM) programme. As you are aware that 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 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. Each candidate will have to complete assignments as per the schedule in order to appear in TEE. Therefore, you are advised to take assignments seriously and submit them in time. Instructions to format your assignments are as follows:

Instructions to format your assignments

Before attempting the assignments, please read the following instructions carefully:

1. On top of the first page of your answer sheet, please write the details exactly in the following format.

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

Course Code:.....	
Course Title:.....	
Study Centre:.....	Date:.....
(Name and Code)	

Please follow the above format strictly to facilitate evaluation and to avoid delay.

2. Use foolscap size paper for writing your answer.
3. Leave 4 cm margin on the top, bottom and left of your answer sheet.
4. Students are advised to give the relevant points from the course material and elaborate their answers and explain in their own language instead of reproducing the language of the course materials.
4. Clearly indicate question no. and part of the question being solved while writing answers.
5. **The Assignments should be sent or submitted to the Programme In-charge (PIC) of the Study Centre allotted to you.**
6. **We strongly suggest that you should retain a copy of your assignment responses.**

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

Note: Minimum 50% marks in Continuous Assessment i.e., each assignment in each course is required for completion of a course for DWM programme.

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

BNRI-101: FUNDAMENTAL OF WATERSHED MANAGEMENT

Submission date: 31 October 2020
Maximum Marks: 50

Note: Attempt all questions. All questions carry equal marks. Write your answer in about 250 words.

1. What is watershed management? Explain its importance in rural areas during present scenario.
2. Explain the concept of watershed management with the term “POWER”.
3. Discuss the role and functions of State Level Nodal Agency (SLNA) in watershed management projects?
4. Explain the importance of information technology in watershed management.
5. What are the major activities need to be included in the watershed management action plan based on the agro-climatic conditions of the region.
6. Discuss the various methods used for prioritization of the sub-watersheds based on the soil erosion and sediment yield treatments?
7. Describe the importance of convergence of other related programmes.
8. What is Natural Resource Indicators? Write its importance in watershed.
9. Discuss the importance of People’s Participation in watershed development programme.
10. Discuss the various constraints in the selection of indicators.

BNRI-102: ELEMENTS OF HYDROLOGY

Submission date: 15 November 2020
Maximum Marks: 50

Note: Attempt all questions. All questions carry equal marks. Write your answer in about 250 words.

1. What is hydrology? Explain hydrologic cycle along-with its different components with the help of a schematic diagram.
2. What are the essential conditions required for occurrence of precipitation? Define rainfall intensity and explain the characteristics of an intense storm.
3. Define runoff? Describe Curve Number method for runoff estimation.
4. What is recurrence interval? Explain rainfall intensity-Duration-Frequency relationship mathematically.
5. Describe water budget along-with its different components with the help of a flow diagram.

6. Compute the rainfall intensity for 20, 40, 60, and 120 minutes duration using the following data:

Time	10:00	10:20	10:40	10:60	11:00
Cumulative rainfall, mm	0	25	40	55	70

7. What is open channel flow? Write its characteristics.
8. Compute the discharge from a concrete rectangular channel section with base 25 cm and depth of flow 10 cm using Manning's equation.
9. What is rain gauge? Differentiate between recording and non recording type rain gauge.
10. What is mean rainfall? Describe different methods for its estimation.

BNRI-103: SOIL AND WATER CONSERVATION

Submission date: 30 November 2020

Maximum Marks: 50

Note: Attempt all questions. All questions carry equal marks. Write your answer in about 250 words.

1. Explain the process of soil erosion. Soil erosion is a major problem for Indian agriculture. explain the statement in your own words.
2. Define raindrop and splash erosion. Classify gully based on depth, width and side slope.
3. Write universal soil loss equation (USLE) and define different terms of the equation. Compute the annual soil loss in tones per ha from a field using following data:
Rainfall erosivity factor = 500; soil erodibility factor = 0.25; crop management factor = 0.65; conservation practice factor = 0.75; and topography factor = 0.08.
4. How does land slope affect velocity of water flow and kinetic energy?
5. Calculate the design height of contour bund used to store 24 hours excess rainfall of 12 cm. Annual rainfall is about 1100 mm, the soil has high intake rate and the land slope is 3%.
6. Differentiate between horizontal interval and vertical interval of contour bunds.
7. Define strip cropping and discuss its importance in soil conservation.
8. Discuss different types of earth fill dam. Discuss the main considerations in their construction.
9. How will you compute water harvesting potential of a given building or cluster of buildings?
10. Discuss the advantages of permanent structures over temporary structures.

BNRI-104: RAINFED FARMING

Submission date: 15 December 2020

Maximum Marks: 50

Note: Attempt all questions. All questions carry equal marks. Write your answer in about 250 words.

1. What are detrimental effects of unfavourable weather conditions on rainfed farming? Explain using a schematic diagram.
2. Explain different weather factors. How do they influence the crop growth?
3. What is weather forecasting? List different weather forecasting models. Discuss its importance in agriculture.
4. What is Farming System? Define crop diversification and write its advantages and disadvantages.
5. Discuss the Integrated Farming Systems suitable in different rainfed regions.
6. Define bio-fertilizer? Enlist different types of bio fertilizers.
7. Explain the use of organic and in-organic materials for control of pests and diseases.
8. What is mulching? Discuss its importance in on-field water conservation.
9. How does crop productivity depend on the quality of seed used for sowing or planting?
10. Discuss in detail the planning and design of water harvesting structures.

BNRI-105: LIVESTOCK AND PASTURE MANAGEMENT

Submission date: 31 December 2020

Maximum Marks: 50

Note: Attempt all questions. All questions carry equal marks. Write your answer in about 250 words.

1. "Livestock plays a major role in livelihood security of the Indian farmers". Justify the statement in your own words.
2. Describe the care and management of lactating and pregnant ewes.
3. Differentiate between conventional barns and loose housing system.
4. Define Artificial Insemination. What are its advantages and disadvantages?
5. Discuss about the different metabolic diseases affecting cows.
6. Classify different types of feeds and fodder available for livestock in India based on their nutrient content with examples.
7. Give the complete package of practices for any five cultivated fodder crops for increased fodder production.
8. Explain common feed/fodder processing techniques practiced in India.

9. Describe the process of preparation of Hay.
10. List the sequence of activities to be taken up for assuring a managed grassland system. Explain any one activity in detail.

BNRI-106: HORTICULTURE AND AGRO-FORESTRY SYSTEM

Submission date: 15 January 2021
Maximum Marks: 50

Note: Attempt all questions. All questions carry equal marks. Write your answer in about 250 words.

1. What are the different systems of planting in the orchards? Explain their significance with suitable examples.
2. What is Greenhouse? Explain different types of greenhouses.
3. Differences between pruning and training? Discuss why these are necessary?
4. What is the role of growth promoters in horticulture, explain?
5. Discuss the different insect pests and diseases affecting cabbage and cauliflower crops.
6. What is tree-crop interface in Agroforestry, explain in detail?
7. Explain the various steps of preparation of Jelly making.
8. Discuss in detail the problems in Jam.
9. Write briefly in the following:
 - a. Blanching
 - b. Methods of dehydration of horticultural produce.
 - c. Preparation of Pickles
 - d. Pasteurization
10. What is co-operative marketing? Discuss its usefulness in the horticulture sector.

BNRI-107: FUNDING, MONITORING, EVALUATION AND CAPACITY BUILDING

Submission date: 31 January 2021
Maximum Marks: 50

Note: All questions are compulsory and carry equal marks. Write your answer in about 250 words.

1. Explain the role and functions of agencies involved at project level for implementation of watershed projects.
2. Why is flexibility in watershed management projects required? Discuss the specific provisions that may be considered to promote the desired flexibility.
3. Define micro-finance. Explain its importance in watershed? Discuss the non-banking financial companies.

4. Define monitoring. What is social auditing and transparency? Explain the steps to ensure transparency in implementation of watershed programmes.
5. What is the role of capacity building in watershed? What are the aspects to be covered in capacity building programmes for Administrator and watershed community?
6. What is extension education? Explain its importance in watershed.
7. What is communication process? List its different key factors and describe different characteristics of mass communication.
8. Explain the role of audio-visual aids for effectively transferring the ideas of a watershed extension worker.
9. How will you classify extension teaching methods based on the nature of contact?
10. Define communication process. Explain the key factors in communication process.