

DWM

ASSIGNMENT BOOKLET

for

Academic Year 2014

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
2014

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 2014
Maximum Marks: 50

Note: Answer the following questions in about 150 words. All questions carry equal marks.

1. Define watershed. Describe the importance of watershed management in present scenario.
2. Discuss the functions need to be performed by the District Watershed Development Unit (DWDU) members.
3. What are the major functions of State Level Nodal Agency (SLNA) to operate watershed management projects?
4. Explain the use of information technology in watershed management.
5. Discuss the major activities (based on the agro-climatic conditions of the region) to be included in the watershed management action plan.
6. Explain the role of NGOs in watershed management.
7. Explain the importance of convergence of other related programmes.
8. What do you understand by watershed prioritization? Explain the purpose of it.
9. Discuss the importance and concept of People's Participation.
10. Discuss the various constraints in the selection of indicators.

BNRI-102: ELEMENTS OF HYDROLOGY

Submission date: 31 October 2014
Maximum Marks: 50

Note: Answer the following questions in about 150 words. All questions carry equal marks.

1. What do you mean by hydrology? Explain hydrologic cycle along with its various components with the help of a neat diagram.
2. Discuss in detail the forms of precipitation.
3. Compute the rainfall intensity for 15, 30, 60, and 120 minutes duration using the following data:

Time, minutes	0	15	30	45	60	120
Cumulative rainfall, mm	0	20	30	50	65	90

4. Explain the curve number method for estimating direct runoff.
5. Define head loss due to friction in pipe. Compute the head loss from a 200 m long concrete pipe having 15 cm diameter. Assume the velocity of flow is 90 cm/sec and $f = 0.0090$.
6. Define seepage. What are the factors affecting seepage losses?
7. Differentiate between the following:
 - a. Effluent and influent streams.

- b. Field water use efficiency and crop water use efficiency.
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. Discuss in detail the Tipping Bucket Type Rain Gauge.
 10. Explain the Cross-sectional area method of discharge measurement with suitable examples.

BNRI-103: SOIL AND WATER CONSERVATION

Submission date: 29 November 2014

Maximum Marks: 50

Note: Answer the following questions in about 150 words. All questions carry equal marks.

1. Define soil erosion? Explain the main causes of soil erosion.
2. Differentiate between geological and accelerated erosion.
3. Discuss the major factors influencing water erosion.
4. Explain movement of soil particles during wind with the help of neat sketch.
5. Classify sand dunes based on shape, size and drifting forces of wind.
6. Explain how timely sowing and crop canopy manipulation control soil erosion?
7. 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%.
8. Compute the water demand of a farm for a period of 30 days. A farm has 80 cows, 30 sheep and 60 goats. Assume average rate of water consumption for cow, sheep and goat is 27, 5 and 5 litre/day, respectively
9. What do you understand by artificial groundwater recharge? Explain basic concepts and ideal conditions for artificial recharge.
10. What are different types of water losses from the reservoir/pond and how it can be controlled?

BNRI-104: RAINFED FARMING

Submission date: 29 November 2014

Maximum Marks: 50

Note: Answer the following questions in about 150 words. All questions carry equal marks.

1. Explain how unpredictable behaviour of monsoon leads to frequent droughts resulting in acute scarcity of food and fodder?
2. Discuss in detail the management practices (local and improved) for aberrant weather conditions.
3. What do you understand by irrigation scheduling? List characteristics of irrigation scheduling.
4. Discuss in detail the major agro-climatic zones of rainfed farming.

5. What do you understand by water use efficiency? Discuss the factors affecting water use efficiency.
6. What do you understand by on-field water conservation, discuss in detail.
7. Explain how integrated farming system (IFS) is essential and a viable solution to meet the ever growing demand of food grains and nutrition?
8. What are the bio-fertilizers? Discuss the benefits of bio-fertilizers.
9. What do you understand by border strip irrigation and also discuss its advantages.
10. Discuss the advantages of timely sowing of rainfed crops.

BNRI-105: LIVESTOCK AND PASTURE MANAGEMENT

Submission date: 31 December 2014

Maximum Marks: 50

Note: Answer the following questions in about 150 words. All questions carry equal marks.

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 and does.
3. Differentiate between conventional barns and loose housing system.
4. Define Artificial Insemination. What are its advantages and disadvantages? List the factors affecting conception rate in cows.
5. Discuss about the different nutritional and metabolic diseases affecting cows.
6. Classify different types of feeds and fodder available for livestock in India based on their nutrient content. Give two examples for each category and sub-category.
7. Give the complete package of practices for any five cultivated fodder crops for increased fodder production.
8. What are the advantages of processing animal feed? Explain some of the common feed/fodder processing techniques practiced in India.
9. Explain the process of preparation of Hay.
10. Describe 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: 31 December 2014

Maximum Marks: 50

Note: Answer the following questions in about 150 words. All questions carry equal marks.

1. Explain different systems of planting in the orchards. Also explain their significance with suitable examples.
2. What is Greenhouse? Explain different types of greenhouses.
3. What are the differences between pruning and training? Why these are necessary?
4. Explain the role of growth promoters in horticulture.
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 Jam.
8. Discuss in detail the problems in Jelly making.
9. Write briefly in the following:
 - a. Blanching
 - b. Methods of dehydration of horticultural produce.
 - c. Preparation of Pickles
 - d. Pasteurization
10. Write briefly on co-operative marketing. Highlight its usefulness in the horticulture sector.

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

**Submission date: 31 January 2015
Maximum Marks: 50**

Note: Answer the following questions in about 150 words. All questions carry equal marks.

1. Discuss the role and functions of agencies involved at project level for implementation of watershed projects.
2. Enlist nationally and internationally funded watershed projects in India. Explain any one in detail.
3. Why is flexibility in watershed management projects required? Discuss the specific provisions that may be considered to promote the desired flexibility.
4. What do you understand by social auditing and transparency? Explain the steps to ensure transparency in implementation of watershed programmes.
5. What is micro-finance? How it is relevant in watershed?
6. Discuss the procedure and importance of supplementary observation mechanism in monitoring of watershed programmes.
7. What are the aspects to be covered in capacity building programmes for Administrator and watershed community?
8. Define extension education. Discuss the process of extension education.
9. What is communication process? Explain the key factors in communication process.
10. Discuss about various audio-visuals aids which can be used in watershed extension work.