DWM

ASSIGNMENT BOOKLET
FOR
ACADEMIC YEAR 2018

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
2018

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 2018
Maximum Marks: 50

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

1. Explain the concept of watershed management with reference to efficient utilization of water and other natural resources.
2. Describe the National Watershed Development Programme of Rainfed Agriculture (NWDPRA) initiated by the government.
3. Describe the activities incorporated in the watershed management action plan depending up on agro-climatic conditions of the region as well as socio-economic condition of people.
4. What are different watershed characteristics? Explain their role in watershed management.
5. Describe the role of Geographical Information System in designing of watershed projects.
6. Explain the various activities/actions for ensuring equitable distribution of benefits among beneficiaries.
7. What is the institutional arrangements at State level to ensure effective implementation of watershed projects, explain?
8. Describe the importance of social mobilization in a watershed?
9. Discuss the various factors responsible for failure of community organization.
10. Describe the various economic efficiency indicators used for economic evaluation of watershed development projects.

BNRI-102: ELEMENTS OF HYDROLOGY

Submission date: 15 November 2018
Maximum Marks: 50

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

1. Describe hydrologic cycle with the help of a schematic diagram. Explain its importance in present scenario.
2. List the essential conditions required for occurrence of precipitation. Define rainfall intensity and classify it.
3. Explain the rainfall Intensity-Duration-Frequency relationship mathematically. Discuss its importance in designing of water storage structures.

4. A rainfall of 120 mm occurs in 2 hours over a catchment of 200 ha and in the next 6 hours rainfall was zero. The outlet discharge of $1.5 m^3/s$ continued for 8 hours. Determine the (i) amount of runoff (ii) amount of water not contributing to runoff and (iii) runoff coefficient.
5. Define time of concentration. Explain rational method for peak runoff estimation.
6. What is infiltration? Explain the process of its measurement.
7. Define water budget. Explain its different components with the help of a flow diagram.
8. Describe the parameters influencing channel discharge. Explain the role of lining material in controlling the seepage loss in open channel.
9. Differentiate between recording and non recording rain gauge. Explain the functioning of weighing bucket type rain gauge.
10. What is mean rainfall? Explain the importance of rain gauge density for different regions based on the WMO standards.

BNRI-103: SOIL AND WATER CONSERVATION

Submission date: 30 November 2018
Maximum Marks: 50

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

1. Define soil erosion. Differentiate between abiotic and biotic causes of soil erosion.
2. What is gully 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 tonnes 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. Describe biological and agronomical measure for controlling water and wind erosion.
6. What are temporary structures? Explain different types of temporary structures used for gully control.
7. What is bench terracing? Discuss main features of conservation bench terracing.
8. Explain different methods of artificial groundwater recharge using a neat diagram.
9. What is earth fill dam? Describe different types of earth fill dams.
10. How will you determine the capacity of a water storage tank, explain?

BNRI-104: RAINFED FARMING

Submission date: 15 December 2018
Maximum Marks: 50

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

1. Write about the detrimental effects of unfavourable weather conditions on rainfed farming?
2. Discuss major soil types of dry areas in India.
3. Explain different weather factors. Discuss how do they influence crop growth?
4. What is weather forecasting? Describe its importance in agriculture.
5. Describe the importance of crop planning for improving land use efficiency.
6. Explain the role of crop rotation and cropping system in relation to pest and disease management.
7. What is green manuring? Write its advantages and disadvantages. Explain common methods of growing green manure crops in situ?
8. Write about organic and in-organic matter used for controlling pests and diseases?
9. Write short note on the following
   a. Integrated farming systems
   b. Sewage Irrigation
   c. Mulching
   d. Bio-fertilizers
   e. Seed Storage
10. Define Irrigation Scheduling. Explain its importance in saving water and energy. Write its different characteristics.

BNRI-105: LIVESTOCK AND PASTURE MANAGEMENT

Submission date: 31 December 2018
Maximum Marks: 50

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

1. Livestock is a wealth of the nation-Justify. What are the useful commodities and services produced by livestock?

2 Define the following:

(i) Dry period

(ii) Bull

(iii) Ewe

(iv) Poultry

(v) Layer

3 What is heat detection? What are the different methods of heat detection? How will you identify whether a cow is in heat or not, through visual observation?

4 Describe the care and management of lactating cow.

5 Write the common signs of the following diseases:

(i) Mastitis

(ii) Haemorrhagic Septicaemia

(iii) Blue Tongue

(iv) Bloat

(v) Coccidiosis

6 Describe the different methods of feeding poultry.

7 Explain in detail the steps involved in hay making?

8 Describe the different livestock grazing systems.

9 Explain the measures to be taken for Clean Milk Production.

10 How will you control and eradicate diseases at the livestock farm?

BNRI-106: HORTICULTURE AND AGRO-FORESTRY SYSTEM

Submission date: 15 January 2018
Maximum Marks: 50

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

1. Explain the importance and scope of agro-forestry. Describe the benefits of agroforestry management.
2. Write short note on the following
   a. Landuse
   b. Tree crop Interface
   c. High Density Orchard
   d. Mist Chamber
   e. Marketing Channels
3. Explain the importance of survey of multipurpose tree species (MPTS) and their uses.
4. What is the role of optimum spacing of fruit trees for successful fruit culture, explain?
5. What is nutrient management? How does it improve the plant growth?

6. What is nursery raising? Describe the advantages of a modern nursery system.
7. Describe the different types of low cost and low energy greenhouses.
8. Define drying. Describe the modern and general methods used for drying of fruits and vegetables.
9. What is cold chain management? Explain important benefits of cold chain.
10. Explain the importance of medicinal plants for primary health care. Describe any five aromatic plants.

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

Submission date: 31 January 2019
Maximum Marks: 50

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

1. Explain the institutional arrangements at the community level for implementing watershed programmes.
2. What is watershed development fund? Explain the process and purpose of setting up of watershed development fund (corpus).
3. Write about the auditing of accounts and utilization certificate.
4. Discuss the structure and characteristics of micro-finance.
5. Write about selection and identification of key indicators for monitoring of watershed programmes.
6. What do you understand by training plans? Explain.
7. Explain scope and objectives of extension education with respects to watershed.
8. What are the key elements of communication process? Discuss different characteristics of mass communication.
9. Explain the role of audio-visual aids in watershed extension.
10. Classify extension teaching methods based on the nature of contact.