ASSIGNMENT BOOKLET
FOR
ACADEMIC YEAR 2019

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
2019

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: 31st October 2019
Maximum Marks: 50

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

1. Define watershed. Explain the focus of watershed programmes.
2. Explain the concept of watershed management with the term "POWER".
3. Discuss main principles of watershed management based on resource conservation, source generation and resource utilization.
4. Explain different watershed characteristics.
5. What methods are used for prioritization of the sub-watersheds based on soil erosion and sediment yield treatments?
6. Describe the role of women in watershed management.
7. Explain the importance of sharing of common property resources for equitable distribution of benefits in a watershed.
8. Describe the various functions of SLNA.
9. Describe the role of`community organization in a watershed programme.
10. Explain the importance of Socio-Economic Indicators.

BNRI-102: ELEMENTS OF HYDROLOGY

Submission date: 15th November 2019
Maximum Marks: 50

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

1. Describe the significance of Intensity-Duration-Frequency Analysis.
2. Explain current meter and float method used for average velocity of flow.
3. Describe rational method for runoff estimation. Write its assumptions.
4. What is infiltration? How do soil type and soil compaction influence the infiltration?
5. Define water budget. Write water balance equation and explain its different components.
6. Distinguish between potential evapo-transpiration and reference evapo-transpiration.
7. What is open channel flow? Discuss various characteristics of open channels.
8. Compute discharge from a trapezoidal section with base width as 20 cm, depth of flow as 10 cm, side slope as 1 (vertical): 1.5 (horizontal), channel slope of 1 m drop in 1000 m length for a good earthen canal (straight and uniform) using Manning's equation.
9. Define point rainfall. How it is measured? Distinguish between recording and non-recording rain gauge.

10. Write short note on the following:
    a. Cloud Seeding
    b. Precipitation
    c. Time of concentration
    d. Head loss in Water flow

BNRI-103: SOIL AND WATER CONSERVATION

Submission date: 30th November 2019
Maximum Marks: 50

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

1. Define soil erosion. Describe main causes of soil erosion.
2. Differentiate between landslip erosion and Ravine formation.
3. Explain universal soil loss equation (USLE). Write its limitations.
4. Describe the process of wind erosion.
5. Explain how soil texture, structure and organic matter content influence erosion by wind.
6. What do you understand by conservation tillage? Differentiate between intercropping and mixed cropping.
7. What are vegetative barriers? Explain its functions with respect to soil conservation.
8. Explain wattling and mulching techniques for slope stabilisation using a neat diagram.
9. Differentiate between temporary and permanent structures.
10. Describe planning, design and construction of water harvesting structures.

BNRI-104: RAINFED FARMING

Submission date: 15th December 2019
Maximum Marks: 50

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

1. What are the detrimental effects of unfavourable weather conditions on rainfed farming? Explain using a schematic diagram.
2. Describe the rainfed farming zones in India in relation to water holding capacity.
3. Explain the importance of weather forecasting for agriculture production. Describe the different weather forecasting models.
4. What is crop diversification? Explain the advantages and disadvantages of crop diversification.
5. Discuss the integrated farming systems in different rainfed regions.
6. What is bio-fertilizer? Enlist types of bio-fertilizers.

7. Differentiate between organic and in-organic materials for control of pests and diseases.
8. Define mulching. How mulching help in water conservation? Enlist different types of mulches.
9. Explain the importance of good quality seed material for higher agriculture productivity. Write the precautions needed to be observed during storage of seeds.
10. Explain in detail the planning and design of water harvesting structures.

BNRI-105: LIVESTOCK AND PASTURE MANAGEMENT

Submission date: 31st December 2019
Maximum Marks: 50

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

1) How livestock plays a major role in watershed management? Explain with suitable examples.
2) Define the following terms:
    a. Dry period
    b. Breed
    c. Crossbreeding
    d. Parturition
    e. Concentrate
3) Describe the care and management of lactating cow.
4) What are the physical and behavioural signs exhibited by a cow in oestrus/heat? Describe the different methods of detection of oestrus/heat.
5) What are the different changes noticed when an animal is sick?
6) Give the species affected and signs/symptoms for the following diseases:
    a. Anthrax
    b. Coccidiosis
    c. Actinomycosis
    d. Blue Tongue
    e. Ketosis
7) a. Differentiate between Concentrates and Roughages.

    b. Describe the feeding of piglets.
8) Discuss about the extensive rainfed system of cultivation of fodder.
9) Identify the different methods of conserving green fodder? Describe any one method in detail.
10) What are the different types of grazing system which can be practiced? Explain any one in detail.

BNRI-106: HORTICULTURE AND AGRO-FORESTRY SYSTEM

Submission date: 15th January 2020
Maximum Marks: 50

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

1. What is Agroforestry? Write its concept, importance and scope. Explain the major agroforestry systems with the help of a neat diagram.
2. How integration of components in agroforestry important for success of an agroforestry system?
3. Discuss the importance of survey of Multipurpose Tree species and their uses.
4. Discuss the role of optimum spacing of fruit trees for successful cultivation.
5. Discuss the importance of nursery raising for growing high quality healthy, vigorous and disease-free vegetables, flowers and fruits.
6. What is nutrient management? How does it improve the plant growth?
7. Discuss the major insect-pests and diseases of potato and mango. Explain their control measures.
8. Define drying. Discuss different methods of drying for drying of vegetables.
9. Describe different factors influencing Fruit and Vegetable Marketing in India.
10. Discuss the use of medicinal plants by rural population for their primary health care. Enumerate plant types used in Indian systems of medicine.

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

Submission date: 31st January 2020
Maximum Marks: 50

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

1. What is the role and functions of agencies involved at project level for implementation of watershed projects? Discuss.
2. Discuss in detail the maintenance of records and accounts for watershed projects.
3. Define micro-finance. Explain its importance in watershed.
4. What is monitoring? Why monitoring is required in a watershed project?
5. Describe the importance of capacity building in watershed. How does it help in sustaining watershed projects?
6. Define extension education. Explain its scope and objectives with respect to watershed.
7. What is communication process? Explain the key factors in communication process.
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. What do you understand by management flexibility during implementation phase?