

**DWM**

**ASSIGNMENT BOOKLET**

for

**Academic Year 2015**

**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**  
**2015**

Dear learner,

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

As you are aware, 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.

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	Enrollment no:.....
	Name:.....
	Address:.....
	.....
	.....
Course Code:.....	Course Title:.....
Study Centre:.....	Date:.....
(Name and Code)	

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

2. Use foolscap size paper for writing your answers.
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.

***Programme Coordinator (DWM)***  
***School of Agriculture***  
*Indira Gandhi National Open University,*  
*Maidan Garhi, New Delhi-110068, India.*

## **BNRI-101: Fundamentals of Watershed Management**

Last Date for submission: 15<sup>th</sup> October, 2015

Maximum Marks: 50

**Note: All questions are compulsory and carry equal marks. Write your answer in about 250 words. 10x5=50**

- Q.1. Describe the methods used for prioritization of sub-watersheds for treatment from soil erosion and sediment yield point of view.
- Q.2. List the important activities of watershed management action plan based on the agro-climatic conditions of the regions and socio-economic conditions of the people.
- Q.3. Explain the important components of watershed management.
- Q.4. What are important activities of the nodal agency at central level to facilitate budgetary allocation of watershed projects?
- Q.5. What do you understand by remote sensing? Describe, how it is helpful in successful planning of watershed projects?
- Q.6. What is project implementation agency? Describe its important functions.
- Q.7. Describe the different guiding principles enshrined in Common Guidelines-2008 for Watershed Management of India.
- Q.8. Explain the major functions of SLNA in operation of watershed management projects.
- Q.9. Discuss the important role of NGO's in watershed programmes.
- Q.10. Describe the importance of Information Technology (IT) in watershed management.

## **BNRI-102: Elements of Hydrology**

Last Date for submission: 31<sup>st</sup> October, 2015

Maximum Marks: 50

**Note: All questions are compulsory and carry equal marks. Write your answer in about 250 words. 10x5=50**

- Q.1. What do you understand by term 'Precipitation'? Explain its different forms. Which form is most dominant in India?
- Q.2. What is rainfall intensity-duration-frequency relationship? Explain its importance in design of soil conservation structures.
- Q.3. Describe rational method of peak runoff estimation along with different assumptions.
- Q.4. Define water budget. Write a water balance equation along with its different components.
- Q.5. A watershed catchment experienced runoff at the rate of 2.5 m<sup>3</sup>/sec for 5 hours covering an area of 100 ha and in the next 3 hours rainfall was zero. Determine the (i) volume and depth of runoff, (ii) amount of water not contributing to runoff and (iii) runoff coefficient.
- Q.6. Define infiltration. Differentiate between basic infiltration rate and accumulated infiltration.

- Q.7 What is 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  $f=0.0090$ .
- Q.8 Explain with the help of neat diagram weighing bucket type of rain gauge.
- Q.9 What do you mean by rain gauge network? Explain the rain gauge density for different regions based on the Indian standards.
- Q.10 Describe Thiessen polygon method used for estimation of mean rainfall.

### **BNRI-103: Soil and Water Conservation**

Last Date for submission: 15<sup>th</sup> November, 2015  
Maximum Marks: 50

**Note: All questions are compulsory and carry equal marks. Write your answer in about 250 words. 10x5=50**

- Q.1. Define water erosion and describe the factors influencing water erosion.
- Q.2 Describe Universal Soil Loss Equation (USLE)? What are different limitations of USLE?
- Q.3 What are different mechanical measures for controlling soil erosion?
- Q.4 Differentiate between horizontal and vertical sand traps for measurement of wind erosion.
- Q.5 Find horizontal interval of bunds on a land having 6% slope and situated in a medium rainfall zone. Also calculate the length of bunds per hectare.
- Q.6 What are the advantages and limitations of drop spillway?
- Q.7 What is surface water harvesting? Explain any two surface water harvesting techniques.
- Q.8 What is artificial groundwater recharge? Describe the ideal conditions for artificial groundwater recharge.
- Q.9 What is earth fill dam? List different types of earth fill dam.
- Q.10 Compute the erosivity of rainfall storm having 8 cm/hr average rainfall intensity and 9 cm rainfall depth. The maximum 30 mm rainfall intensity is 4 cm/hr.

### **BNRI-104: Rainfed Farming**

Last Date for submission: 30<sup>th</sup> November, 2015  
Maximum Marks: 50

**Note: All questions are compulsory and carry equal marks. Write your answer in about 250 words. 10x5=50**

- Q.1. Explain the detrimental effects of unfavourable weather conditions on rainfed farming with a schematic diagram.
- Q.2 Classify the climatic zones based on rainfall.
- Q.3 What are the different factors affecting the water use efficiency?

- Q.4 Describe the broad categories of weather forecasting models.
- Q.5 Define the farming system. Explain different components of integrated farming system?
- Q.6 Describe the importance of crop planning for improving land use efficiency.
- Q.7 What do you mean by bio-fertilizers and discuss its advantages?
- Q.8 What do you understand by mulching and state its importance and list different types of mulching?
- Q.9 Explain important agronomic techniques which play a significant role in improving crop productivity in rainfed areas.
- Q.10 How is selection of crops and their varieties important for rainfed farming?

### **BNRI-105: LIVESTOCK AND PASTURE MANAGEMENT**

Last Date for submission: 15<sup>th</sup> December 2015

Maximum Marks: 50

**Note: All questions are compulsory and carry equal marks. Write your answer in about 250 words. 10x5=50**

- Q.1. Justify why livestock is a wealth of the nation. What are the useful commodities and services produced by livestock?
- Q.2 Define the following:
- (i) Dry period
  - (ii) Bull
  - (iii) Ewe
  - (iv) Poultry
  - (v) Layer
- Q.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?
- Q.4 Describe the care and management of lactating cow.
- Q.5 What are the common signs of the following diseases:
- (i) Mastitis
  - (ii) Haemorrhagic septicaemia
  - (iii) Blue Tongue
  - (iv) Bloat
  - (v) Coccidiosis
- Q.6 Describe the different methods of feeding poultry.
- Q.7 Explain in detail the steps involved in hay making?
- Q.8 Describe the different grazing systems.
- Q.9 Explain the measures to be taken for clean milk production.
- Q.10 How will you control & eradicate diseases at the livestock farm?

### **BNRI-106: Horticulture and Agroforestry System**

Last Date for submission: 31<sup>st</sup> December, 2015

Maximum Marks: 50

**Note: All questions are compulsory and carry equal marks. Write your answer in about 250 words. 10x5=50**

- Q.1. Define agroforestry and explain its basic concepts. Describe its importance in Watershed Management.
- Q.2. What is interactive process of diagnosis and design exercise? Explain it with the help of a diagram.
- Q.3. Describe different points need to be considered before selecting any plant material for orchard establishment.
- Q.4. Explain the importance of nursery. Classify nursery on the basis of size and business.
- Q.5. Explain the role of temperature for the optimum growth of fruits.
- Q.6. Describe the process of fruit juice preparation.
- Q.7. Describe the different methods used for drying fruits?
- Q.8. What are the different factors affecting storage life of the food?
- Q.9. What are the different factors influencing marketing of fruits and vegetables?
- Q.10. Define medicinal plants. Describe about any five medicinal plants.

### **BNRI-107: Funding, Monitoring Evaluation and Capacity Building**

Last Date for submission: 30<sup>th</sup> January, 2016

Maximum Marks: 50

**Note: All questions are compulsory and carry equal marks. Write your answer in about 250 words. 10x5=50**

- Q.1. Describe the share of central and state governments in funding watershed projects.
- Q.2. Discuss any five nationally and internationally funded watershed management Programmes in India.
- Q.3. Describe the procedure for release of installments' during implementation of watershed development projects in detail.
- Q.4. What are the different criteria for distributing funds to the districts by the state level nodal agencies?
- Q.5. Define monitoring. Give its importance in watershed programmes.
- Q.6. Define extension education and explain its principles.
- Q.7. What are the important steps in extension education process, explain with the help of a neat sketch?
- Q.8. What do you understand by micro-finance? Describe its concepts.
- Q.9. What are the different participatory tools? Explain any two tools in detail.
- Q.10. Discuss the important aspects to be covered in short duration orientation courses for administrators and managers.