

CWHM

ASSIGNMENT BOOKLET

**Certificate in Water Harvesting and Management
(CWHM)**

(Assignment for the July 2024 and January 2025 Sessions)

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
2024-2025**

Dear learner,

Welcome to the Certificate in Water Harvesting and Management (CWHM) Programme.

We hope that you have gone through the Programme Guide of CWHM carefully. It is extremely important to complete the assignments within the stipulated time to be eligible to appear for the term-end examination. All the assignments of CWHM are Tutor Marked Assignments (TMAs) and are part of the continuous evaluation process.

Before you write the assignments, read the instructions provided in the Programme Guide carefully and go through the course materials. If you have any doubts or problems pertaining to the courses and assignments, do feel free to contact us at the School of Agriculture.

You are requested to go through the course material first and then complete the assignments. Your answers should not be a verbatim reproduction of the textual materials/blocks provided for self-learning purposes. 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 submit your assignments at the Study Centre allotted to you before the due date as mentioned below:

Course Code	For July 2024 Session	Last Date for January 2025 Session
ONR-001	30 th August 2024	31 st January 2025
ONR-002	30 th September 2024	28 th February 2025
ONR-003	25 th October 2024	25 th March 2025

We suggest that you should keep a copy of your assignment responses.

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

Note: Minimum 35% marks in Continuous Assessment i.e., each assignment in each course is required for completion of a course for CWHM programme.

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

Course Title: Introduction to Water Harvesting
Course Code: ONR-001

Maximum marks: 100

Note: Answer all the questions. Answer each question in about 500 words. All questions carry equal marks.

1.	Explain rainwater harvesting. Discuss its importance in present day scenario.
2.	Describe the main step different state governments have taken for enforcing rainwater harvesting.
3.	Explain the role of tank and groundwater in irrigation in India.
4.	What is rooftop rainwater harvesting? Write its advantages and explain its role in improving groundwater conditions?
5.	What is watershed? How integrated watershed management is important for improving the socio-economic conditions of the rural people.

Course Title: Basics of Hydrology
Course Code: ONR-002

Maximum marks: 100

Note: Answer all the questions. Answer each question in about 500 words. All questions carry equal marks.

1.	Explain different forms of Precipitations. Distinguish between convective and cyclonic rainfall along with diagram.																		
2.	Explain different types of recording and non recording rain gauge.																		
3.	What is water balancing? Explain water budget with neat schematic diagram and write its different components.																		
4.	Calculate the average rainfall using the Thiessen polygon method from 500 km ² area using the data given below: <table border="1" style="margin-left: 20px;"> <tr> <td>Station</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> </tr> <tr> <td>Rainfall, mm</td> <td>105</td> <td>200</td> <td>415</td> <td>325</td> <td>310</td> </tr> <tr> <td>Area of Polygon, km²</td> <td>75</td> <td>120</td> <td>100</td> <td>130</td> <td>75</td> </tr> </table>	Station	1	2	3	4	5	Rainfall, mm	105	200	415	325	310	Area of Polygon, km ²	75	120	100	130	75
Station	1	2	3	4	5														
Rainfall, mm	105	200	415	325	310														
Area of Polygon, km ²	75	120	100	130	75														
5.	Define disinfection. Explain conventional water treatment plant along with flow diagram of.																		

Course Title: Water Harvesting, Conservation and Utilization

Course Code: ONR-003

Maximum marks: 100

Note: Answer all the questions. Answer each question in about 500 words. All questions carry equal marks.

1.	Explain why water harvesting is necessary for agriculture sustainability.
2.	Explain any two surface water harvesting techniques in detail. Describe the factors impacting choice of water harvesting systems.
3.	Explain the drip irrigation system with the help of neat sketch and describe the importance of drip irrigation in the area of water scarcity.
4.	A farmer applying 5 cm irrigation to 10 ha area and meeting water requirement of 10 cows and of 20 buffalos. Assume requirement of cow and buffalos are 70 and 60 litres/day. Compute the gross storage capacity of a water storage pond to meet the water need for 30 days.
5.	What is artificial groundwater recharge? Explain the ideal conditions for artificial groundwater recharge.