Small Hydro Power (SHP) Module

Students Workbook

Study materials in Renewable Energy Areas
for ITI students

Ministry of New and Renewable Energy
Government of India

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for
Small Hydro Power (SHP) Module

Ministry of New and Renewable Energy
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Contents

Unit 1: Introduction to Renewable

Q 1. Write a note on: Water Cycle?

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Q 2. Explain Small Hydro Power as a viable option?

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Unit 2: Small Hydro power – Basic Working Principles

Q 1. Explain how Micro Hydro power works?

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Q 2. What are Impulse turbines and Reaction turbines?

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Unit 3: Working of an SHP

Q 1. Explain in brief the main parts of an SHP?

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Unit 4: Electrical and Mechanical Equipment in a small Hydro Power Plant

Q 1. What are the types of Reaction turbines? Explain them in brief?

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Q 2. What are the parts of an SHP drive system?

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Q 3. What are the types of generators? Explain them in brief?

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Q 4. What is a speed governor?

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Q 5. Why is a speed increaser required?

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Unit 5: Measuring Head and Flow

Q 1. How would you select the best water source site?

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Q 2. List the different methods of measuring the head for a closed diversion system. Explain them in brief.

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Unit 6: Generating Power

Q 1. How does one calculate the flow?

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Q 2. What is the benefit of a draft tube?

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Q 3. Write down the causes of head loss?

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Q 4. How would you calculate the overall efficiency of an SHP?

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Unit 7: Economics of Using an SHP

Q 1. Write down the advantages and shortcomings of an SHP.

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Unit 8: Water Mills

Q 1. Write a short note on water mills?

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Q 2. Write down the installation procedure for new improved water mills?

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Q 3. Write a note on maintenance of water mills?

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Q 4. List down in detail impacts of water mill upgrades?

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