

Roll No: -----

**Name:**  
**Enrolment No:**



**UNIVERSITY OF PETROLEUM & ENERGY STUDIES**  
**End Semester Examination – May, 2019**

**Program/course: MA (Energy Economics)**

**Semester : 4<sup>th</sup>**

**Subject: Renewable Energy and Energy Efficiency Economics**

**Max. Marks: 100**

**Code: ECON 8004**

**Duration : 3 Hrs**

**No. of page/s: 2**

*All questions shall be strictly answered in chronological order.*

**SECTION A**

**[4\*5 Marks =  
20 Marks]**

**Ques 1**

Briefly explain the following terminologies:

- a) Sustainable Development Goals
- b) Energy Security
- c) Decentralized Energy
- d) Energy Management

**20**

**CO1,  
CO2**

**SECTION B**

**Answer five questions from this section**

**[5\*10 Marks =  
50 Marks]**

**Ques 2**

Discuss India's plan and achievements with respect to renewable energy.

**10**

**CO1,  
CO2,  
CO3**

**Ques 3**

Explain the working of solar PV and wind power technology with the help of a diagram.

**10**

**CO2,  
CO3,  
CO4**

**Ques 4**

Highlight the advantages and disadvantages of renewable energy in comparison to coal-fired electricity.

**10**

**CO3,  
CO4**

**Ques 5**

Storage (Dam) based hydropower has several distinct advantages that make it a desirable source of power in current Indian power scenario. Justify.

**10**

**CO2,  
CO3,  
CO4**

<b>Ques 6</b>	Recently, India has experienced sharp reduction in cost of solar power. Discuss the main reasons for such trend.	<b>10</b>	<b>CO1, CO2, CO3</b>
<b>Ques 7</b>	Considering time and cost overruns in power projects, energy management seems to be an attractive option for addressing demand-supply deficit. Justify.	<b>10</b>	<b>CO2, CO3, CO4</b>
<b><u>SECTION C</u></b>		<b>[1*30 Marks = 30 Marks]</b>	
<b>Answer any one question from this section.</b>			
<b>Ques 8</b>	In a house, four 100 W incandescent bulbs can be replaced with four 25 W CFL or four 12 W LED. Assuming 4 hours of lighting per day and Rs 5.00 per unit cost of electricity, estimate annual monetary savings of the household for the two modes of replacement.	<b>30</b>	<b>CO2, CO3, CO4</b>
<b>Ques 9</b>	Adoption of Sustainable Development Goals and Paris Convention has radically transformed global energy industry in the favor of renewable energy and energy efficiency. Justify the statement citing examples.	<b>30</b>	<b>CO2, CO3</b>

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**SECTION A**

**[4\*5 Marks =  
20 Marks]**

**Ques 1**

Briefly explain the following terminologies:

- a) Sustainable Development Goals
- b) Demand Side Management
- c) Supply Side Management
- d) Energy Security

**20**

**CO1,  
CO2**

**SECTION B**

**[5\*10 Marks =  
50 Marks]**

**Ques 2**

Discuss India's plan and achievements with respect to renewable energy.

**10**

**CO1,  
CO2,  
CO3**

**Ques 3**

Solar Parks have inherent advantages that reduces risks associated with development of solar power projects. Justify.

**10**

**CO2,  
CO3,  
CO4**

**Ques 4**

Highlight the advantages and disadvantages of renewable energy in comparison to coal-fired electricity.

**10**

**CO3,  
CO4**

**Ques 5**

Storage (Dam) based hydropower has several distinct advantages that make it a desirable source of power in current Indian power scenario. Justify.

**10**

**CO2,  
CO3,  
CO4**

**Ques 6**

Recently, India has experienced sharp reduction in cost of solar power. Discuss the main reasons for such trend.

**10**

**CO1,  
CO2,  
CO3**

<b>Ques 7</b>	Considering time and cost overruns in power projects, energy management seems to be an attractive option for addressing demand-supply deficit. Justify.	<b>10</b>	<b>CO2, CO3, CO4</b>
<b><u>SECTION C</u></b>		<b>[1*30 Marks = 30 Marks]</b>	
<b>Answer any one question from this section.</b>			
<b>Ques 8</b>	In a house, three 60 W incandescent bulbs can be replaced with three 25 W CFL or three 12 W LED. Assuming 4 hours of lighting per day and Rs 5.00 per unit cost of electricity, estimate annual monetary savings of the household for the two modes of replacement.	<b>30</b>	<b>CO2, CO3, CO4</b>
<b>Ques 9</b>	Adoption of Sustainable Development Goals and Paris Convention has radically transformed global energy industry in the favor of renewable energy and energy efficiency. Justify the statement citing examples.	<b>30</b>	<b>CO2, CO3</b>