

Name:

Enrolment No:



**UNIVERSITY OF PETROLEUM AND ENERGY STUDIES**

**End Semester Examination, December 2018**

**Program: MBA (Power Management)**

**Semester – III**

**Subject (Course): Wind and Alternative Sources of Energy**

**Max. Marks : 100**

**Course Code : PIPM 8002**

**Duration : 3 Hrs**

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

**Section – A (2 marks \* 10 = 20 Marks)**

S. No.		Marks	CO
	<b>Fill in the blanks with the most suitable word/figure. Correct filling of each blank will fetch 2 marks.</b>		
1.	Wind energy is the energy content of air in motion due to _____ heating of earth's surface.	2	CO1
2.	For both wind and biomass energy, _____ energy is the input source of energy.	2	CO1
3.	Biomass gasification leads to the generation of _____ gas that is a mixture of _____ and _____ .	6	CO1
4.	Based on location, wind power projects can be classified as _____ , _____ and _____ wind farm.	6	CO1
5.	Out of the total target of _____ MW installed capacity from solar, wind, biomass and small hydro to be completed by year 2022 in India, _____ MW is the targeted installed capacity from wind.	4	CO1

**Section – B (5 marks \* 4 = 20 Marks)**

**Answer all questions in this section:**

6.	Briefly explain the following:		
a)	Betz Law	5	CO1
b)	Wind Park Effect	5	CO1

c)	Biomass Gasification	5	CO1
d)	Residue to Product Ratio (RPR) of a Crop	5	CO1
<b>Section – C (10 marks * 3 = 30 Marks)</b>			
<b>Answer all questions in this section:</b>			
7.	Draw a hypothetical power curve for a 1 MW wind turbine indicating cut-in speed, rated speed and cut-out speed parameters.	10	CO2, CO3, CO4
8.	Derive the relationship between wind power, swept area and wind velocity.	10	CO2, CO3
9.	Discuss Sweden’s waste management practices (including waste to energy practices) that make it a world leader in this area.	10	CO2, CO3
<b>Section – D (30 marks * 1 = 30 Marks)</b>			
<b>Answer any one question from this section:</b>			
10.	Municipal solid waste has immense potential to address energy and non-energy issues of the cities in India. Justify.	30	CO2, CO3, CO4
11.	Compare the potentials of solar and wind power in India, discuss their pros and cons, and suggest a comprehensive framework for their promotion in the country.	30	CO1, CO2, CO3, CO4

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<b>Section – C (10 marks * 3 = 30 Marks)</b>			
<b>Answer all questions in this section:</b>			
7.	Discuss the various options to improve wind power at a particular site.	10	CO2, CO3, CO4
8.	Assuming yourself as a policymaker, discuss policy measures that can help create a market for biogas run vehicles.	10	CO2, CO3
9.	Discuss Sweden’s waste management practices (including waste to energy practices) that make it a world leader in this area.	10	CO2, CO3
<b>Section – D (30 marks * 1 = 30 Marks)</b>			
<b>Answer any one question from this section:</b>			
10.	Municipal solid waste has immense potential to address energy and non-energy issues of the cities in India. Justify.	30	CO2, CO3, CO4
11.	Municipal solid waste has immense potential to address energy and non-energy issues of the cities in India. Justify.	30	CO2, CO3, CO4