

Name:	
Enrolment No:	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, December 2018

Course: Renewable Energy Policies, EPEC 8007	Semester: III
Programme: M.Tech. Renewable Energy Engineering	
Time: 03 hrs.	Max. Marks: 100
Instructions:	

SECTION A

S. No.		Marks	CO
Q 1	<p>In June 2015, the Union Cabinet chaired by the Prime Minister, Shri Narendra Modi, gave its approval for stepping up of India's solar power capacity target under the Jawaharlal Nehru National Solar Mission (JNNSM) by five times.</p> <p>a) What was the new target set for JNNSM in June 2015? b) By which year will this target be achieved? c) What are the two main segments of SPV that comprise this target? d) What are the targets for each of these two segments?</p>	4	CO1
Q 2	<p>Identify four major barriers to mainstreaming Renewable Energy and explain briefly (in one or two sentences) why they prevent large-scale deployment of Renewable Energy in India.</p>	4	CO1
Q 3	<p>What do the following Abbreviations stand for:</p> <p>a) STU b) IEGC c) PGCIL d) BOOT e) SLDC f) CERC g) INDC h) UI</p>	4	CO2
Q 4	<p>Explain the reasons why 'Feeder Separation' is an important part of the DDUGJY scheme to provide electricity to rural areas.</p>	4	CO3
Q 5	<p>Explain the following terms (briefly in one or two sentences):</p> <p>a) Low-Voltage Ride Through capability b) Accelerated Depreciation c) Generation Tariff Parity d) Viability Gap Funding</p>	4	CO1 CO3

SECTION B			
Q 6	Discuss the National Biofuels Policy by looking at its Aim, Vision, Goals, Strategy and Approach. Explain the important role played by Second Generation Biofuels in achieving these Goals.	10	CO4
Q 7	The Solar Power Park Developer (SPPD) is the Implementing Agency of Solar Park nominated by the State Government. Explain the responsibilities of the SPPD and discuss the key role played by the SPPD in the successful development and management of Solar Parks.	10	CO2
Q 8	a) What is meant by “Reverse Auction” ? b) Describe the strengths of Renewable Energy Auctions in India. c) Explain the four Categories of auction design elements.	10	CO2
Q 9	a) What is meant by Unscheduled Interchange ? b) Explain how the Unscheduled Interchange charges contribute towards grid discipline and help maintain grid stability. c) What is the role of ‘Forecasting’ in this connection? OR Explain the main features of the Indian Electricity Grid Code, 2010 that are related to grid integration of power from solar and wind power plants.	10	CO3
SECTION-C			
Q 10	Analyze critically the main features of the Jawaharlal Nehru National Solar Mission (JNNSM) by examining the following: a) Objective and Aims of the Mission. a) Importance of the Mission. b) Targets of the JNNSM. c) Financial requirements for achieving the revised targets. d) Central Financial Assistance for Solar Parks. e) Guidelines for Development of Solar Parks. f) Scope of the Solar Parks. g) The major stakeholders in the Solar Parks and their roles and responsibilities.	20	CO1 CO2
Q 11	Analyze the relationship between the principal stakeholders in the Renewable Energy Certificate (REC) mechanism with the help of a schematic showing the ‘Operational Framework of the REC mechanism’. Discuss the roles and responsibilities of the principal stakeholders. OR Analyze the methodology and recommendations of Niti Aayog’s ‘Expert Group on 175 GW Renewable Energy by 2022’. Is the 175 GW target achievable by 2022?	20	CO1 CO2

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SECTION A

S. No.		Marks	CO
Q 1	What do the following Abbreviations stand for: a) CTU b) UPCL c) CFA d) NLDC e) SERC f) IEGC g) INDC h) RRF	4	CO2
Q 2	Explain the following terms (briefly in one or two sentences): a) Spinning Reserve b) Bundling of renewable electricity with thermal power c) Low-Frequency Ride Through capability d) Generation Tariff Parity	4	CO1 CO3
Q 3	Explain briefly the four categories of Auction Design Elements (with respect to Renewable Energy Auctions in India).	4	CO2
Q 4	Due to high Oil Imports, India is trying to substitute petrol and diesel with Biofuels. What are the two main Biofuels being used to substitute petrol and Diesel in India? Give one major feedstock for each of these two Biofuels	4	CO4
Q 5	What is meant by 'Feeder Separation'? Explain why it is an important part of the rural electrification strategy of the DDUGJY scheme.	4	CO3
SECTION B			
Q 6	Discuss MNRE's Renewable Energy Targets for India by the year 2022 in Solar, Wind, Bioenergy and Small Hydropower. Explain the role of Niti Aayog in formulating plans for the successful achievement of these targets.	10	CO1
Q 7	Discuss the success of the Solar Parks program under the JNNSM in promoting the large-scale deployment of Solar Photovoltaic power plants in India. Analyze the	10	CO1 CO2

	roles of the main stakeholders in development of Solar Parks.		
Q 8	Discuss the advantages and benefits of Biofuels at the national, state and local levels (as given in the National Biofuels Policy).	10	CO4
Q 9	Analyse and discuss Govt. of India's policy and plans to provide adequate transmission infrastructure for Grid Integration of Solar & Wind power plants that is necessary for capacity addition. OR Analyse and discuss how the "CEA (Technical Standards for Connectivity to the Grid) Amendment Regulations, 2013" aims to improve grid efficiency and grid discipline by means of 'Technical requirements from Wind Generators and SPV Inverters', 'Unscheduled Interchange Charges', etc.	10	CO3
SECTION-C			
Q 10	Analyze the challenges of Rural Electrification for providing 24x7 electricity to all the villages in India by discussing the following: a) How is the Govt. of India addressing these challenges with schemes such as DDUJGY. b) Discuss the role of Mini-Grids / Micro-Grids for Rural Electrification. c) Discuss the main interventions proposed in the National Energy Policy to promote Rural Electrification.	20	CO3
Q 11	Discuss the key roles played by the following agencies in implementing Govt. of India's Energy Policies that lead to the large scale deployment of all the renewable energy technologies, especially solar photovoltaics: a) Ministry of New and Renewable Energy (MNRE) b) Solar Energy Corporation of India (SECI) c) Electricity Regulatory Commissions (Central and State) OR a) Discuss the role of Renewable Energy Certificates (REC) in ensuring the success of the Renewable Purchase Obligation (RPO) program. b) Discuss the two mechanisms used for pricing of RECs, including their merits and demerits. c) Explain the meaning of Floor Price and Forbearance Price of RECs.	20	CO1 CO2