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UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, December 2017

Program:	M.Tech. Renewable Energy Engineering	Semester	: III
Subject (Course):	Renewable Energy Policies	Max. Marks	: 100
Course Code:	MNEG 803	Duration	: 3 Hrs
No. of page/s:	3		

Section A

All questions are mandatory: (Each question: 4 marks)

- 1) 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.
 - 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?
- 2) Name ANY FOUR Renewable Energy Technologies that can be used for Rural Electrification in India.
- 3) a) RGGVY and DDUGJY are two rural electrification schemes launched by the Govt. of India. What do these two abbreviations stand for?
b) What is the main purpose of the DDUGJY scheme?
- 4) Name the two main Biofuels for the transport sector in India. What are the major feedstocks from which these two Biofuels are produced?
- 5) Define the three types of 'Access to the Transmission System' for Renewable Energy power plants.

Section B

All questions are mandatory: (Each question: 10 marks)

- 6) Explain how the National Energy Policy proposes to achieve the four key objectives of India's Energy Policy.
- 7) Explain how the Unscheduled Interchange charges contribute towards grid discipline and help maintain grid stability. What is the role of 'Forecasting' in this connection?
- 8) Compare the policy of allowing Banking of electricity from SPV power plants for only one month (e.g. in Uttarakhand) with the policy that allows Banking for one whole year.
- 9) 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.

Section C

Answer both questions: (Each question: 20 marks)

- 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.

EITHER

- 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

- 11) 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?

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Section A

All questions are mandatory: (Each question: 4 marks)

- 1) Describe the Eligibility Criteria for a Renewable Energy Generator to become an 'Eligible Entity' under the Renewable Energy Certificate mechanism.
- 2) Identify four major barriers to mainstreaming Renewable Energy.
- 3) Explain the following terms:
 - a) Viability Gap Funding
 - b) Generation Tariff Parity
 - c) Bundling of renewable electricity
 - d) Feed in Tariff
- 4) Explain the reasons why 'Feeder Separation' is a part of the DDUGJY scheme to provide electricity to rural areas.
- 5) Explain why the National Biofuels Policy places a lot of importance on Research & Development on second generation biofuels from agricultural residues, etc.

Section B

All questions are mandatory: (Each question: 10 marks)

- 6)
 - a) Describe the strengths of Renewable Energy Auctions.
 - b) Explain the four Categories of auction design elements.

- 7) Discuss the advantages and benefits of Biofuels at the national, state and local levels (as given in the National Biofuels Policy).
- 8) Explain the features of the Indian Electricity Grid Code, 2010 that promote grid integration of power from renewable energy.
- 9) Discuss the key role played by the Solar Power Park Developer in the development of Solar Parks in JNNSM.

Section C

Answer both questions: (Each question: 20 marks)

- 10) Analyze the challenges of Rural Electrification in India.
 - 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.

EITHER

- 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) Indian Renewable Energy Development Agency (IREDA)

OR

- 11)
 - 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.