Name: **Enrolment No:**	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, May 2025

Course: Energy Sector Structure and Functioning **Semester: II**
Program: BBA Green Energy & Sustainability **Time : 03 hrs.**
Course Code: OGET1001 **Max. Marks: 100**
Instructions: Set2

SECTION A
10Qx2M=20Marks

S. No.		Marks	CO
Q 1	Complete the Abbreviations a. MNRE b. MOP	**2**	**CO1**
Q2.	What is Primary Energy resources? Name any two.	**2**	**CO1**
Q3	What is Secondary Energy? Give example.	**2**	**CO1**
Q4	Name different types of Solar Energy. Name two.	**2**	**CO1**
Q5	What is the full form of CEA and UNFCCC?	**2**	**CO1**
Q6	Name four major Renewable energy.	**2**	**CO1**
Q7	What is Installed Renewable Energy Generation capacity in India at present? Give details.	**2**	**CO1**
Q8	Name Minister for Power in India.	**2**	**CO1**
Q9	1 barrel is equal to how many liters?	**2**	**CO1**
Q10	What is overall Installed Generation Capacity in India at present? Give Fuel-wise.	**2**	**CO1**
	SECTION B **4Qx5M= 20 Marks**		
Q 11	Name all five RLDCs with their Headquarters.	**5**	**CO2**
Q 12	What are the characteristics of Renewable Energy? Explain with five examples.	**5**	**CO2**
Q 13	What is Power Value Chain? Explain.	**5**	**CO2**
Q 14	Differentiate between Fossil Fuel and Non-Fossil Energy with examples.	**5**	**CO2**

SECTION-C **3Qx10M=30 Marks**			
Q 15	How growth and development of power sector happened in India? Discuss growth and development of power sector in India since 1910.	**10**	**CO3**
Q 16	"World is under Energy Transition which is going to affect Indian Energy Sector and Transportation in drastically manner" – Critically evaluate this statement.	**10**	**CO3**
Q 17	Explain Sustainable Energy. How you will select fuel taking care of Economy, Environment and overall Sustainability?	**10**	**CO3**
SECTION-D **2Qx15M= 30 Marks**			
	The Union Ministry of New and Renewable Energy (MNRE) announced August 12, 2021 that the country has achieved the milestone of installing 100 gigawatts (GW) of renewable energy capacity. This excluded large hydroelectricity capacities installed in the country, the ministry added. The press release for the announcement said: While 100 GW has been installed, 50 GW is under installation and 27 GW is under tendering. India has also enhanced its ambition to install 450 GW of renewable energy capacity by 2030. If large hydro is included the installed RE capacity increases to 146 GW at present as we have currently 46GW of large Hydro. The achievement is indeed a landmark in India's green portfolio but is still not an encouraging sign of the country attaining its 2022 target of 175 GW installation. In 2015-16, the Centre had announced it would install 175 GW of renewable energy (excluding large hydro) by 2022. This means, the country has 19 months to install the remaining 75 GW it had intended, considering the government was referring to the financial year of 2022-23. Looking at the past performance, the sector will have to make unprecedented progress in these months to achieve the target, according to energy experts. An analysis of monthly installed capacity in the first six months of 2021, after the first wave of the novel coronavirus disease (COVID-19) pandemic, explains this apprehension. Between January and June, only 1GW of renewable energy capacity was installed in a month on an average, according to data by the Central Electricity Authority (CEA) under the Union Ministry of Power. Moreover, the target set for installed solar energy capacity is 100 GW by March 2023 — 40 GW rooftop solar and 60 GW ground-mounted utility scale. The country has managed to install only 43.94 GW till July 31, 2021, the CEA data suggests. The rooftop solar installation has been particularly dismal at 7GW till December 2020, according to Bridge to India, a renewable energy consultancy. India has to quadruple its monthly installation rate to achieve its target within the stipulated time. The capacity addition has been concentrated in Karnataka (15.6 GW), Tamil Nadu (15.5 GW) Gujarat (14 GW), Rajasthan (11.4 GW), Maharastra (10.4 GW) till July 31, 2021, according to CEA. Installation in the eastern (1.7 GW) and north-eastern (0.4 GW) regions has been scanty, and in the islands		

	(38 megawatts) has been negligible. “The country has also enhanced its ambition to install 450 GW of renewable energy capacity by 2030,” read the press note by the ministry. Predictions by experts, however, are comparatively modest. “The capacity predicted at our end is 150 GW by 2025 and 400 GW by 2030,” said Samrat Sengupta, programme director of climate change & renewable energy department at the Centre for Science and Environment, a Delhi-based non-profit. Some long-term policies for the solar sector introduced recently may act as dampeners, he noted. The basic Customs duty on imported solar cells and modules effective April 1, 2022 and the mandatory registration for manufacturers of the same under the Approved List of Models and Manufacturers, are some of them, he added. Development in the wind energy industry slowed down in the last five years as solar energy gained a competitive advantage after changes in the feed-in tariff policy, said Sengupta. By 2025, renewable energy capacity development may be bolstered by the entry of competitive storage technology players in the Indian marker, predicted the researcher. ---------- **Attempt both questions :- (30 marks = 2X 15 Marks)**		
Q18	**Analyse the progress of India for achieving targets of Renewable Energy till 2030 as per facts given in passage and also known to you.**	**15**	**CO4**
Q19	**Give your suggestions for Renewable Energy growth and development in India in the coming decade for meeting target of emission reduction as per Paris Agreement.**	**15**	**CO4**