


Name:	 UPES <small>UNIVERSITY OF TOMORROW</small>
Enrolment No:	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, December 2024

Course: Power Sector Structure & Functioning
Program: MBA Power Management
Course Code: PIPM7002

Semester: Ist
Time : 03 hrs.
Max. Marks: 100

Instructions:

SECTION A
10Qx2M=20Marks (Answer All Question)

S. No.	Question	Marks	CO
Q 1	What is Secondary Energy? Give at least one example.	2	CO1
Q 2	Name Chairman of CERC & CEA.	2	CO1
Q 3	What is the full form POSOCO, GCI & CTUI?	2	CO1
Q 4	What is installed generation capacity of India in 2024? How much units India has approx. generate in the financial year of 2023-24.	2	CO1
Q 5	Transmission Utilities are not allowed to do Power Trading. (True/False)? Explain.	2	CO1
Q 6	What is Open Access as per the Electricity Act 2003? Explain.	2	CO1
Q 7	What is Subsidy & Cross-subsidy?	2	CO1
Q 8	Explain Aggregate Technical & Commercial Losses.	2	CO1
Q 9	Electricity Act 2003 has -----Parts and -----Sections. (Fill up blank.)	2	CO1
Q 10	Expand MCP, MCV and ACP.	2	CO1

SECTION B
4Qx5M= 20 Marks

Q 1	What are major points of the Electricity Act 2003? Explain.	5	CO2
Q 2	Name five RLDCs with their respective Headquarters,.	5	CO2
Q 3	Explain main points of proposed National Electricity Policyj.	5	CO2
Q 4	Explain growth and development of power sector in India since 1991.	5	CO2

SECTION-C
3Qx10M=30 Marks

Q 1	Calculate first year Tariff of 10 MW Solar PV Plant in India assuming CERC norms and regulations 2024.	10	CO3
Q 2	Analyze critically India's growth plan for Non-Fossil Energy up to 2030 with suggestions for better implantation.	10	CO3

Q 3	Power Sector in India is moving from Conventional Energy to Non-Conventional Energy Resources – Evaluate this statement with your suggestions.	10	CO3
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SECTION-D
2Qx15M= 30 Marks

	<p>Short-term interventions addressing the current energy crisis must be accompanied by a steadfast focus on mid- and long-term goals of the energy transition. High fossil fuel prices, energy security concerns and the urgency of climate change underscore the pressing need to move faster to a clean energy system.</p> <p>Launched by the International Renewable Energy Agency (IRENA) at the Berlin Energy Transition Dialogue today, the Agency’s Outlook sets out priority areas and actions based on available technologies that must be realized by 2030 to achieve net zero emissions by mid-century. It also takes stock of progress across all energy uses to date, clearly showing the inadequate pace and scale of the renewables-based transition.</p> <p>“The energy transition is far from being on track and anything short of radical action in the coming years will diminish, even eliminate chances to meet our climate goals”, said Francesco La Camera, Director-General of IRENA. “Today, governments are facing multiple challenges of energy security, economic recovery and the affordability of energy bills for households and businesses. Many answers lie in the accelerated transition. But it’s a political choice to put policies in place that comply with Paris Agreement and the Sustainable Development Agenda. Investing in new fossil fuel infrastructure will only lock-in uneconomic practices, perpetuate existing risks and increase the threats of climate change.”</p> <p>“It is high time to act”, La Camera added. “Recent developments have clearly demonstrated that high fossil fuel prices can result in energy poverty and loss of industrial competitiveness. 80% of the global population lives in countries that are net-importers of fossil fuels. By contrast, renewables are available in all countries, offering a way out of import dependency and allowing countries to decouple economies from the costs of fossil fuels while driving economic growth and new jobs.”</p> <p>The Outlook sees investment needs of USD 5.7 trillion per year until 2030 including the imperative to redirect USD 0.7 trillion annually away from fossil fuels to avoid stranded assets. But investing in the transition would bring concrete socioeconomic and welfare benefits, adding 85 million jobs</p>		CO4
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worldwide in renewables and other transition-related technologies between today and 2030. These job gains would largely surpass losses of 12 million jobs in fossil fuel industries. Overall, more countries would experience greater benefits on the energy transition path than under business as usual, according to the Outlook.

Renewables would have to scale-up massively across all sectors from 14% of total energy today to around 40% in 2030. Global annual additions of renewable power would triple by 2030 as recommended by the Intergovernmental Panel on Climate Change (IPCC). At the same time, coal power would have to resolutely be replaced, fossil fuel assets phased out and infrastructure upgraded.

The Outlook sees electrification and efficiency as key drivers of the energy transition, enabled by renewables, hydrogen, and sustainable biomass. End-use decarbonization will take center-stage with many solutions available through electrification, green hydrogen, and the direct use of renewables. Notably electro mobility is seen as driver of energy transition progress, growing the sales of electric vehicles (EV) to a global EV fleet twenty times bigger than today.

However, a comprehensive set of cross-cutting, structural policies covering all technological avenues and just transition objectives is needed to achieve the necessary deployment levels by 2030. Increasing ambition in the National Determined Contributions (NDCs) and national energy plans under the Glasgow Climate Pact must provide certainty and guide investment strategies in line with 1.5°C.

Particularly the world's largest energy consumers and carbon emitters from the G20 and G7 must show leadership and implement ambitious plans and investments domestically and abroad. They would need to support the global supply of 65% renewables in power generation by 2030. Climate finance, knowledge transfer and assistance would have to increase for an inclusive and equal world.

Finally, enabling a rapid transition that complies with climate and development goals requires political commitment to support the highest level of international cooperation. Achieving Sustainable Development Goals and universal access to modern energy by 2030 must remain a vital pillar of a just and inclusive energy transition. A holistic global policy

	framework can bring countries together to enable international flow of finance, capacity and technologies.		
Q1	Analyze the challenges in getting investment for any projects of Energy transition projects.	15	CO4
Q 2	Elaborate the steps any Government can take in promoting Energy Transition	15	CO4