Name: Enrolment No:



UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, December 2022

Course: Power Generation and Power Station Management Program: MBA (Power Management)

Course Code: PIPM 7001

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

Section – A (2 marks * 10 = 20 Marks)

Fill in the blanks with the most suitable option. The options are given in front of each question. (CO1)

1.	Electricity Act 2003 aimed to create a regime in the Indian Power Sector.				
	(Monopoly, Market Based, Strictly Regulated, Highly Governed)				
2.	power technology generate DC power that need to be converted into A0				
	through an inverter. (Solar thermal, Solar PV, Wind, Biomass)				
3.	Large scale integration of renewables to the grid would necessitate adoption of				
	(Electricity storage mechanisms, Electric vehicles, Inverters)				
4.	AT&C loss of Indian power sector is around (10%, 20%, 30%)				
5.	power plants are used for peak load management. (Coal, Nuclear, Gas)				
6.	The circulation ratio in a supercritical boiler is (More than one, Equal				
	to one, Lesser than one)				
7.	In a sub-critical thermal (coal) power plant, the role of steam drum is to				
	(Heat water, Heat water and steam, Separate steam from water).				
8.	In a coal fired thermal power plant, higher specific coal consumption is an indicator o				
	efficiency. (Increased, Decreased, Stagnant)				
9.	is a base load power plant. (Solar PV, Wind, Coal)				
10.	Supercritical power plants have heat rates compared to subcritical				
	power plants. (Higher, Lower, Equal)				

Section – B (5 marks * 4 = 20 Marks)

Answer all questions from this section:

(CO1)

- 11. Briefly explain the following along with their impact on the economics of power generation:
 - a) PLF
 - b) Availability
 - c) Heat rate
 - d) Specific fuel consumption

Section – C (10 marks * 3 = 30 Marks)

Answer any three questions from this section:

(CO₂)

- 12. Discuss the merits and demerits of nuclear power plants.
- 13. From the perspective of satisfying the electricity needs of a country like India, it is unfair to compare 1 MW of thermal power (coal or gas based) capacity with 1 MW of renewable power (solar or wind) capacity. Justify.
- 14. Operation and maintenance of a hydro power plant is much simpler as compared to that of a coal fired power station. Justify.
- 15. Discuss the following data on cost of power supply and revenue realization in India and explain its impact on power sector:

Year	Average cost of supply(ACS) (paise/unit)	Average Revenue Realization(paise/unit)	ARR (on subsidy received basis) paise/unit
2013-14	519.03	441.31	77.72
2014-15	520.57	462.11	58.46
2015-16	530.57	482.55	48.02
2016-17	538.01	500.78	37.23
2017-18	550.06	519.81	30.26
2018-19	599.93	548.36	51.57

Section – D (30 marks * 1 = 30 Marks) Answer any one question from this section: (CO3)

16. Explain the challenges faced by India's power sector and suggest remedial measures.

OR

17. Renewables, electricity storage mechanisms and electric vehicles are changing the landscape of power sector like never before. In light of these technology interventions, discuss the future of Indian power sector.