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UPES

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, December 2019

Program: MBA (Power Management) **Semester – I**
Subject (Course): Power Generation and Power Station Management **Max. Marks : 100**
Course Code : PIPM 7001 **Duration : 3 Hrs**
No. of page/s: 2

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, CO2)

1. India's annual per capita electricity consumption is _____ kWh. (1081, 1181, 1281)
2. With around 1,94,444 MW installed capacity, _____ has the biggest share in India's power generation capacity. (Coal, Hydro, Nuclear, Renewables)
3. Due to lower _____, the share of renewables in India's actual power generation is significantly lower than its share in India's installed capacity. (PLF, Availability, CUF)
4. In a coal fired power plant, higher specific fuel consumption is an indicator of _____ efficiency. (Increased, Decreased, Stagnant)
5. In a subcritical thermal (coal) power plant, the role of steam drum is to _____. (Heat water, Heat water and steam, Separate steam from water).
6. _____ power plant is capable of absorbing load fluctuations. (Hydro, Nuclear, Coal, Biomass)
7. Supercritical power plants have _____ heat rates compared to subcritical power plants. (Higher, Lower, Equal)
8. Of all types of power plants, _____ has the highest efficiency. (Coal, Nuclear, Hydro, Wind)
9. Electricity Act 2003 aimed to create a _____ regime in the Indian Power Sector. (Monopoly, Market Based, Strictly Regulated, Highly Governed)
10. The circulation ratio in a supercritical boiler is _____ (More than one, Equal to one, Lesser than one)

Section – B (5 marks * 4 = 20 Marks)

Answer all questions from this section: (CO2, CO3)

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, CO3)

12. Why electricity (power) is considered as the most favored form of electricity? What makes power management so challenging?
13. Why is it easier to operate and maintain a hydro power plant compared to a coal fired power plant?
14. Discuss the factors considered while finalizing the number of identical units within a power plant.
15. 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.

Section – D (30 marks * 1 = 30 Marks)

Answer any one question from this section: (CO3, CO4)

16. Explain the challenges faced by Indian power sector and suggest remedial measures.

OR

17. From economics and sustainable development perspective, hydro power has a big role to play in Indian power sector. Justify.