



**Semester End Examination - January 2022**  
**Course Code : EEE 409 Course Name : Power Plant Engineering**  
**School of Engineering & Information Technology**

**Programme: B.Tech(ME) & B.Tech+M.Tech(ME)**  
**Time: 3 hrs**

**Semester: VII**  
**Max. Marks:100**

**PART - A (10 questions X 2 marks = 20 Marks)**

**Answer ALL the Questions**

1. Attempts all parts. All parts carry equal marks. Write answer of each part in short.
- a. State two characteristics of sodium-graphite reactor? [2]
- b. Define air pre-heaters? [2]
- c. List out the advantages of feed water treatment? [2]
- d. Why shielding of nuclear reactor is necessary? [2]
- e. What is catchment area? [2]
- f. Give typical example of control rod? [2]
- g. Define nuclear chain reaction? [2]
- h. State the advantages Steam re-heaters? [2]
- i. Define Wind energy? [2]
- j. Draw systematic diagram of Diesel power plant? [2]

**PART - B (4 questions X 5 marks = 20 Marks)**

**(Answer all questions)**

2. What are the Arrangements of various elements in a nuclear power station? [5]
3. Write a short note on Fast breed reactor? [5]
4. What is application of diesel power plant? [5]
5. What are reactor shielding and safety methods? [5]

**PART - C (3 questions X 10 marks = 30 Marks)**

**Answer Three out of Four Questions**

6. Explain briefly heat balance in steam cycle and plant heat rate with help of diagram? [10]  
Solve the following  $GCV=3300\text{kcal/kg}$ ,  
 $SP. \text{Coal}=0.701\text{kg/kw hr}$ . Find the PHR? ]
7. State briefly fast reactor and its advantages and disadvantages with help of diagram? [10]  
]
8. Discuss about Reactor control system? [10]  
]
9. Elaborate fuel handling system. [10]  
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**PART - D (2 questions X 15 marks = 30 Marks)**

**Answer Two out of Three Questions**

10. Describe ash handling system? Types of ash handling system with the help of diagram? [15]  
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11. If the engine working under Carnot cycle condition between two temperature  $T_1$  and  $T_2$  that is 500k and 900k respectively and heat input  $Q_1$  that is 11,000 joule Find out efficiency and work done [15]  
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- 12.(a) Explain briefly equipment used in hydroelectric power stations?  
(b) Discuss about the energy policy of India?

[15  
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