

12. (a) Discuss fluidized bed combustion. What are the advantages and limitations of FBC?

Or

- (b) Classify pulveriser. Explain with neat sketch the working of any two burners.
13. (a) (i) How much power is generated by fissioning of 1 g of U^{235} per day? (8)
(ii) Explain the mechanism of moderator. (8)

Or

- (b) (i) Discuss the methods of enriching uranium. (8)
(ii) Differentiate between light water and heavy water reactor. (8)
14. (a) How "intercooling" improves the thermal efficiency of a simple open cycle gas turbine power plant? Show the variation of thermal efficiency with pressure ratio, with and without "intercooling".

Or

- (b) With the help of neat diagram, explain the exhaust system of a diesel power plant.
15. (a) What are energy rates? Explain its types.

Or

- (b) (i) Define load factor, utility factor, plant operating factor and capacity factor. (8)
(ii) The maximum demand of a factory is 250 kW and the annual load factor is 50%. This load is to be supplied by a diesel plant costing Rs. 400 per kW and having a running cost for fuel and oil of 6 paise per kWh generated. Rate of interest and depreciation on diesel engine plant is 10%. The wages of the operating staff per year are Rs. Calculate the total annual cost of providing this supply. (8)