

SHAHEED BHAGAT SINGH STATE TECHNICAL CAMPUS, FEROZEPUR

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Total number of pages: [1]

Total number of questions: 08

M.Tech. -CHE/ 4th Sem
Advanced Energy Technology
Subject Code: MTCH-414
Batch: 2011 onwards

Time allowed: 3 Hrs

Max Marks: 100

Important Instructions:

- Attempt any five questions.

Q.1. Draw schematic layout of a diesel power plant and explain its different components.

Q.2. (a) Discuss the state-of-the-art conversion technologies that help to use biomass material efficiently.

(b) Why hydrogen called a secondary energy source? Name the various methods of hydrogen production. (10+10)

Q.3. (a) Why solar energy is known as the 'ultimate source of energy'? Name and explain any one instrument used for measuring solar radiation and sunshine.

(b) Explain with neat sketch, the working of a Vortex boiler.

Q.4. (a) Explain the principle of release of nuclear energy by fusion and fission reaction.

(b) Explain the sodium-graphite nuclear reactor.

(8 + 12)

Q.5. How energy can be stored? Explain in detail mechanical and chemical storage techniques.

Q.6. (a) With the help of neat diagram, explain the working of liquid metal cooled reactor.

(b) Write a short note on the wastes produced by nuclear power plant.

(12+8)

Q.7. (a) Differentiate biomass and biogas.

(b) Explain the different types of fuels used for steam generation.

Q.8. (a) Write a short note on photosynthesis and anaerobic fermentation.

(b) Discuss the environmental aspects of energy utilization.