

**PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)**

**MSc DEGREE EXAMINATION MAY 2022
(First Semester)**

Branch – ENVIRONMENTAL SCIENCE

ENERGY AND ENVIRONMENT

Time: Three Hours

Maximum: 50 Marks

SECTION-A (5 Marks)

Answer ALL questions

ALL questions carry EQUAL marks (5 x 1 = 5)

1. The energy available in a system to do useful work is called
 a) Enthalpy b) Entropy c) Gibbs energy d) Total energy
2. The semiconductor device that converts light energy into electrical energy is called
 a) Light cell b) Solar cell c) Lithium cell d) Cadmium cell
3. Coal which is hard and having carbon content more than 92% is
 a) Anthracite b) Lignite c) Peat d) Bituminous
4. Material that is used for slowing down the fission reaction is called
 a) Moderator b) Stabilizer c) Neutralizer d) Modulator
5. Gasohol is a fuel of
 a) Gasified alcohol b) Mixture of LPG and alcohol
 c) Mixture of petrol and alcohol d) Mixture of water and alcohol

SECTION - B (15 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks (5 x 3 = 15)

6. a. Analyze the problems associated with the conversion of energy from one type to another.
 OR
 b. Show how the conversion of energy units are carried out.
7. a. Justify the use of renewable energy resources.
 OR
 b. Explain the steps of energy conversions from heat to electricity.
8. a. Categorize the types of fossil fuels.
 OR
 b. Classify the types of coal.
9. a. Show the fission reaction.
 OR
 b. Explain fusion reaction.
10. a. Discuss the advantages of use of hydrogen gas.
 OR
 b. Explain fermentation process in production of methane.

Cont...

SECTION -C (30 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks

(5 x 6 = 30)

11 a Discuss Carnot cycle.

OR

b Differentiate enthalpy and entropy.

12 a Explain in detail the process of energy audit.

OR

b Recommend suitable renewable energy technology for a place based on meteorological/topographical conditions.

13 a Explain the process of petroleum refining.

OR

b Elucidate the environmental problems associated with petroleum products.

14 a Discuss the benefits and disadvantages of nuclear power plants.

OR

b Enumerate radioactive waste disposal methods.

15 a Categorize the types of biomass energy and the methods of their extraction.

OR

b Explain the advantages and disadvantages of energy production from solid wastes.

Z-Z-Z

END