

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)
BSc DEGREE EXAMINATION MAY 2024
(Sixth Semester)
Branch – PHYSICS

**DISCIPLINE SPECIFIC ELECTIVE – II ALTERNATIVE ENERGY
RESOURCES**

Time: Three Hours

Maximum: 50 Marks

SECTION-A (5 Marks)

Answer ALL questions

ALL questions carry EQUAL marks

(5 x 1 = 5)

- 1 What is the primary source of energy in non-conventional sources?
(i) Geothermal heat (ii) Sun
(iii) Wind (iv) Fossil fuels
- 2 Passive solar technology
(i) Photovoltaic (ii) Solar furnace
(iii) solar water heating (iv) solar thermo-mechanical system
- 3 Which of the following is not a biomass resource?
(i) Animal wastes (ii) Forestry residue
(iii) Agricultural residue (iv) Sunlight
- 4 _____ directly use low temperature hydrothermal source
(i) Electricity generation (ii) Waste treatment
(iii) Spas (iv) Gas stove
- 5 Fuel cell converts chemical energy to electrical energy using a reaction that -----
(i) eliminates combustion of fuel (ii) requires combustion of fuel
(iii) requires no ignition of fuel (iv) fuel is not required

SECTION - B (15 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks

(5 x 3 = 15)

- 6 a Classify conventional energy resources.
OR
b Write down the advantages of conventional energy resources.
- 7 a Explain the working of solar cooker.
OR
b Explain about solar desalination?
- 8 a Define biofuel. Give examples.
OR
b Define biomass gasification.

Cont...

- 9 a Explain about Geopressed resources with examples.
OR
b Outline the development of geothermal energy resources?
- 10 a Give the properties of Hydrogen.
OR
b Explain about Alkaline Fuel Cell.

SECTION -C (30 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks (5 x 6 = 30)

- 11 a Discuss about the conventional energy scenario in India.
OR
b Discuss the different types of energy sources and their roles in energy sector of India.
- 12 a Describe the solar passive space heating system with a diagram.
OR
b Elucidate the layers of solar pond and its importance.
- 13 a Explain biogas production from waste biomass.
OR
b Discuss about the Floating drum type biogas plants.
- 14 a Discuss Geothermal resources with examples.
OR
b State and explain Magma resources.
- 15 a Define the storage method for hydrogen and What materials are used to store hydrogen?
OR
b Discuss the principle and working of phosphoric acid fuel cell (PAFC).

Z-Z-Z

END