

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2026
(Sixth Semester)

Branch -**PHYSICS**

MAJOR ELECTIVE COURSE – II : ALTERNATE ENERGY RESOURCES

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** marks (10 × 1 = 10)

Module No.	Question No.	Question	K Level	CO
1	1	The oil shock mainly affected which sector first? (i) Agriculture (ii) Transportation (iii) Education (iv) Healthcare	K1	CO1
	2	What is the main objective of non-conventional energy development? (i) Increase imports (ii) Reduce energy demand (iii) Reduce pollution (iv) Replace electricity	K2	CO1
2	3	Flat plate collectors are mainly used in (i) Solar furnaces (ii) Solar water heaters (iii) Solar ponds (iv) Solar desalination	K1	CO2
	4	Solar water pumps are best suited for (i) Urban areas (ii) Coastal areas (iii) Remote villages (iv) Industrial zones	K2	CO2
3	5	Which is NOT a biomass resource? (i) Firewood (ii) Animal waste (iii) Coal (iv) Crop residue	K1	CO3
	6	Fixed dome plant is popular because of (i) High cost (ii) Complex design (iii) Low gas yield (iv) Low maintenance	K2	CO3
4	7	Geothermal energy is obtained from (i) Earth's interior (ii) Sun (iii) Wind (iv) Ocean	K1	CO4
	8	Geothermal energy is considered as (i) Non-renewable (ii) Renewable (iii) Exhaustible (iv) Polluting	K2	CO4
5	9	Fuel cells convert which energy to electricity? (i) Thermal energy (ii) Chemical energy (iii) Mechanical energy (iv) Nuclear energy	K1	CO5
	10	Why hydrogen is considered a clean fuel? (i) It is cheap (ii) It produces water on combustion (iii) It is heavy (iv) It is radioactive	K2	CO5

Cont...

SECTION - B (35 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks (5 × 7 = 35)

Module No.	Question No.	Question	K Level	CO
1	11.a.	Discuss the importance of non-conventional energy sources.	K3	CO1
		(OR)		
	11.b.	Enumerate about green house effect and consequence of global warming as an environmental aspect of energy.		
2	12.a.	Explain the principle, working and applications of box type solar cookers with neat diagram.	K5	CO2
		(OR)		
	12.b.	Analyze the working of solar pond power plants and their advantages.		
3	13.a.	Explain the photosynthesis process and its importance in biomass energy.	K2	CO3
		(OR)		
	13.b.	With neat sketch explain the fixed dome type biogas plant.		
4	14.a.	Elucidate the hydrothermal and magma geothermal resources in detail.	K4	CO4
		(OR)		
	14.b.	Discuss the advantages and disadvantages of small hydro schemes.		
5	15.a.	Explain the hydrogen storage techniques.	K5	CO5
		(OR)		
	15.b.	Describe the working of phosphoric acid fuel and alkaline fuel cell.		

SECTION - C (30 Marks)

Answer ANY THREE questions

ALL questions carry EQUAL Marks (3 × 10 = 30)

Module No.	Question No.	Question	K Level	CO
1	16	Explain the availability of primary conventional and non - conventional energy resources in India.	K2	CO1
2	17	Describe the working principle of solar desalination systems.	K3	CO2
3	18	Discuss in detail the biomass conversion technologies.	K5	CO3
4	19	Elaborate all the components in layout of a micro hydro scheme.	K5	CO4
5	20	Describe the different methods of hydrogen production.	K4	CO5

Z-Z-Z END