

Laxmi Narayan Dubey College, Motihari

Internal Assessment Examination-2023

1st SEMESTER

SUBJECT: PHYSICS (Multidisciplinary Course MDC)

Name of Course: PHYSICS AROUND US

Full Marks: 15

PART –A

Answer any FIVE

(5 ×1=5)

A. Objective/ Multiple Choice Type Questions:

1. What is the primary greenhouse gas responsible for trapping heat in the Earth's atmosphere? A) Oxygen B) Carbon dioxide (CO₂) C) Nitrogen D) Hydrogen
2. Laser hydrothermal energy utilizes lasers to: A) Generate electricity from water B) Extract minerals from deep-sea vents C) Create artificial geysers D) Enhance geothermal power production
3. Which of the following is a significant advantage of using CNG as a vehicle fuel? A) High carbon emissions B) Limited refueling infrastructure C) Lower greenhouse gas emissions D) Frequent fuel shortages
4. Geothermal energy is derived from: A) The gravitational pull of the Earth B) The heat stored in the Earth's crust C) Tidal movements in the oceans D) Wind patterns near volcanoes
5. What is the most common method for producing hydrogen for use as a fuel? A) Electrolysis of water B) Fracking C) Oil refining D) Coal combustion
6. The "greenhouse effect" refers to the: A) Cooling of the Earth's surface B) Warming of the Earth's surface due to human activities C) Absence of greenhouse gases in the atmosphere D) Natural cooling of the Earth's atmosphere
7. In laser hydrothermal energy, what is the primary source of heat used to generate electricity? A) Solar radiation B) Microwave radiation C) Radioactive materials D) High-energy lasers
8. Which type of vehicles is commonly converted to run on CNG for environmental benefits? A) Electric scooters B) Bicycles C) Heavy-duty trucks and buses D) Private jets
9. What is a "geothermal reservoir" in the context of geothermal energy? A) A large underground cave system B) A natural hot spring C) A subsurface rock formation with trapped heat D) A type of geothermal power plant
10. Which element is most commonly used as a fuel source in hydrogen-based fuel cells? A) Carbon B) Oxygen C) Hydrogen D) Nitrogen

PART –B
Answer any FIVE

(5 ×1=5)

B. Fill in the blanks:

1. CNG, or Compressed Natural Gas, is a cleaner-burning alternative to traditional _____ fuels.
2. Geothermal energy harnesses the heat stored in the Earth's _____ to generate electricity and heat buildings.
3. In hydrogen-based fuel cells, _____ is combined with oxygen to produce electricity, with water as the only byproduct.
4. The Keeling Curve shows the continuous increase in atmospheric _____ levels over time.
5. Geothermal power plants use wells to tap into _____ reservoirs beneath the Earth's surface.
6. The primary greenhouse gas associated with climate change is _____.
7. Fuel cell vehicles powered by _____ offer zero-emission transportation options.

PART –C
Answer any FIVE

(5 ×1=5)

C. Short Type Questions:

1. What is the main driver of climate change, primarily responsible for global warming?
2. What is the term for the uppermost layer of soil where most plant roots are located?
3. What does the term "agro physics" refer to in agriculture?
4. Name one environmental advantage of using CNG as a vehicle fuel compared to traditional gasoline.
5. How does geothermal energy harness heat from the Earth's interior to produce electricity?
6. What type of device is used to convert hydrogen into electricity and heat in hydrogen-based fuel systems?
7. What is the name of the natural process where certain gases trap heat in the Earth's atmosphere, similar to a blanket around the planet?
8. What is the term for the ability of soil to retain and supply essential nutrients to plants?
9. How can agro physics contribute to improving crop yields in agriculture?
10. What are the primary components of natural gas, which is used as a source of CNG?