

UG (Sem-I) Examination- 2023
(Session- 2023-27)
PHYSICS AROUND US
MDC-1
MODEL QUESTION PAPER

TIME: 3 Hrs.

FULL MARKS: 70

Candidates are required to give their answers in their own words as far as practicable.

The figure in the margin indicates full marks.

Answer from all the Groups as directed. Group - A is compulsory.

Group-A

1. Choose the correct answer of the following questions : (10×2 = 20)
- A. Which of the following options is the correct sequence of the layers of atmosphere starting from Earth's atmosphere:
- i) Troposphere, stratosphere, mesosphere, thermosphere, exosphere
 - ii) Troposphere, mesosphere, stratosphere, thermosphere, exosphere
 - iii) Troposphere, mesosphere, thermosphere, stratosphere, exosphere
 - iv) None of the above
- B. The ozone layer, which absorbs the ultra-violet radiation, is found in which layer of the atmosphere:
- i) Ionosphere
 - ii) Stratosphere
 - iii) Troposphere
 - iv) Mesosphere
- C. The major constituent of the atmosphere by percentage is:
- i) Oxygen
 - ii) Carbon dioxide
 - iii) Nitrogen
 - iv) Water vapor
- D. Which of the following is the non-renewable source of energy:
- i) Wind energy
 - ii) Fossil fuels
 - iii) Solar energy
 - iv) none of the above
- E. Solar energy is a form of:
- i) Non-renewable energy.
 - ii) Conventional
 - iii) Non-Conventional
 - iv) Exhaustible
- F. India's share of nuclear energy in electricity generation is approximately:
- i) 0.3%
 - ii) 3%
 - iii) 10%
 - iv) 15%

G. LASER stands for:

- i) Light amplification by stimulated emission of radiation
- ii) Light amplification by spontaneous emission of radiation
- iii) Light amplitude by stimulated emission of radio waves
- iv) Light amplitude by spontaneous emission of radio waves

H. Which is/are the abiotic components of an ecosystem?

- i) Protein
- ii) Soil
- iii) Carbon
- iv) All of the above

I. Which ecological pyramid is always upright:

- i) Pyramid of number
- ii) Pyramid of energy
- iii) Pyramid of biomass
- iv) Pyramid of carbon

J. Which one of the following is an abiotic and renewable source of energy:

- i) Water
- ii) Forest
- iii) Iron ore
- iv) Livestock

Group-B

(4×5 = 20)

2. What is the physics behind climate change?
3. Explain the greenhouse effect?
4. Discuss the advantages of renewable sources of energy.
5. What is the importance of the ecosystem?
6. Explain the most common food preservation method.
7. What is meant by geothermal energy?

Group-C

(3×10 = 30)

8. What is the Food Chain? Explain the different types of food chains in the ecosystem.
9. What is the difference between geothermal and nuclear power energy?
10. What is energy harvesting and types of energy harvesting? Why do we need energy harvesting?
11. What are X-rays? How are x-rays produced?
12. Explain various applications of physics for agriculture purpose.