SARASWATHI NARAYANAN COLLEGE

(Autonomous Institution Affiliated to Madurai Kamaraj University)
(Reaccredited with Grade 'B' by NAAC)

Madurai – 625 022.

B.Sc. Physics – Summative Examinations – April - 2024

Code: LUPHSC41 **Semester: IV**

NON-CONVENTIONAL ENERGY SOURCES

Duration: 2 Hrs. **Max. Marks: 50**

Section – A **5 × 1 = 5**

I. Answer all questions. Choose the correct answer. K2

1. World Energy Needs are rising due to _____

   a) deforestation

   b) increasing population and Industrialization

   c) inflation

   d) natural calamities

2. The single solar cell voltage is about _____

   a) 0.2V b) 0.5 V

   c) 1.0V d) 2.0V

3. What is the main source for the formation of wind?

   a) Uneven land b) Sun

   c) Vegetation d) Seasons

4. How is hydrogen gas produced from fossil fuels?

   a) Partial oxidation of methane

   b) Electrolysis

   c) Evaporation

   d) Biomass gasification

5. Fuel cell converts chemical energy to electrical energy using a reaction that _____

a) eliminates combustion of fuel

b) requires combustion of fuel

c) requires no ignition of fuel

d) fuel is not required

II. Fill in the blanks. K1 **5 × 1 = 5**

6. Energy resources derived from natural organic materials are called _____
7. The solar heater function is to convert the solar energy in to _____
8. Wind energy is harnessed as _____ energy with the help of windmill or turbine.
9. _____ is the radioactive isotope of hydrogen.
10. Fuel cell performance is not limited by _____law of Thermodynamics.

SECTION – B **5 x 2 = 10**

Answer ALL the questions.

11. Define Renewable energy resources K1
12. How will you measure solar radiation? K2
13. State Wind energy conversion system.K3
14. What is meant by Hydrogen transportation? K4
15. Give any two applications of fuel cell. K5/6

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SECTION – C **3 x 10 = 30**

Answer any THREE questions.

16. Discuss the concept of energy consumption as a measure of prosperity of a nation- world energy future.K1
17. Elaborate the basic voltaic system for power generation and give the applications of Solar Photo Voltaic system.K2
18. Draw the diagram of Physical wind generating Station and explain its component and function. K3
19. Describe the different methods in hydrogen storage and its process in detail. K4
20. Discuss the Design and principle of operation of a fuel Cell with a neat diagram.K5/6