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**WT—315—2024**

**FACULTY OF SCIENCE**

**M.Sc. (Second Year) (Fourth Semester) EXAMINATION**

**NOVEMBER/DECEMBER, 2024**

**PHYSICS**

**Paper PHY-404(A)**

**(Energy Physics)**

**(Wednesday, 18-12-2024)**

**Time : 2.00 p.m. to 5.00 p.m.**

*Time—3 Hours*

*Maximum Marks—75*

*N.B. :—* (1) *All questions are compulsory.*

(2) *Figures to the right indicate full marks.*

1. Describe in detail Nuclear Energy. Discuss its advantages and disadvantages.  
Explain working principle of a solar cell. 15

*Or*

(a) Discuss various types of conventional energy sources in detail. 8

(b) Describe the different types of non-conventional energy sources. 7

2. Define solar energy collectors. Explain its working in detail. Discuss solar food drying technology. 15

*Or*

(a) Explain in detail the principle of conversion of solar radiations into electricity. 8

(b) Explain in detail construction and working principle of solar heater. 7

P.T.O.

3. Describe in detail conversion of Biogas energy into various types of energies. 15

*Or*

(a) What is Biomass energy ? Explain various factors affecting the generation of biomass energy. 8

(b) Describe how biomass can be converted to thermo-chemical and other energies. 7

4. Describe in detail production of hydrogen energy and its applications. 15

*Or*

(a) Describe working principle of a fuel cell. Explain its advantages and disadvantages. 8

(b) Discuss electrolytic methods for production of hydrogen energy. 7

5. Write short notes on any *three* :

(a) Fuel cells 5

(b) Biomass energy generation 5

(c) Solar ponds and solar energy 5

(d) Conventional and non-conventional energy sources. 5