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HDU-003-0493001

Seat No. _____

B. Sc. / M. Sc. (Applied Physics) (CBCS) (Sem. III) Examination

November / December – 2017

Paper - IX : Nonconventional Energy Resources

Faculty Code : 003

Subject Code : 0493001

Time : $2\frac{1}{2}$ Hours] [Total Marks : **70**

Instructions : (1) All questions are compulsory.
(2) Figures on right side shows full marks.

1 Answer the following : (any **seven**) **14**

(1) State different sources of energy used in day to day life.
(2) What is minimum speed of wind required to generate energy ?
(3) Define renewable energy.
(4) Give the examples of non- renewable energy.
(5) What is biomass?
(6) Define the term 'waste'.
(7) Define radioactive energy.
(8) Which are the environmental concerns for radioactive waste ?
(9) What is aerobic respiration ?
(10) Give the full form of PV cells.

2 (a) Answer any **one** : **4**

(1) Energy use patterns of India - Discuss.
(2) State the requirement of human energy consumption.

(b) Answer any **two** : **10**

(1) Energy use pattern in world and its impact on the environment.
(2) Explain the power generation from wind energy
(3) State the advantages of wind energy
(4) Describe the environmental concerns wind energy

3 (a) Answer any **one** : **4**

(1) Write a note on Mie scattering and non-selective scattering.

(2) Explain briefly the Rayleigh scattering.

(b) Answer any **two** : **10**

(1) State the working of solar heater.

(2) How solar energy is harnessed by solar furnace and solar power plants.

(3) Discuss the absorption and reflection principle for harnessing solar energy.

(4) Explain briefly the mechanism of solar cells.

4 (a) Answer any **one** : **4**

(1) Define tidal energy. Explain the important component of tidal energy.

(2) Explain briefly the process of pyrolysis and energy plantation.

(b) Answer any **two** : **10**

(1) What is bio gas plant ? Explain fixed dome type biogas plant.

(2) What is energy plantation? Give some examples of energy plantations.

(3) What is hydropower plant? Explain the components of hydropower plant.

(4) State the environmental concerns of biogas plant.

5 (a) Answer any **one** : **4**

(1) Fission and fussion in nuclear energy - Discuss.

(2) What are fuel cells? Explain in detail.

(b) Answer any **two** : **10**

(1) Write a brief note on problems in harnessing geothermal energy.

(2) What is Nuclear energy?

(3) State different types of geothermal energy.

(4) Discuss the advantage and disadvantages of nuclear energy.
