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PBA-003-0493001 Seat No. _____

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

November / December - 2018

Non-Conventional Energy Resources : Paper - IX

(New Course)

Faculty Code : 003

Subject Code : 0493001

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

Instructions : (1) All questions are compulsory
(2) Numbers in the right margin indicate marks

1 Attempt any **seven** short questions : **14**

(1) Define Nonrenewable energy.
(2) Write the examples of renewable energy.
(3) What is the common form of Energy?
(4) State the disadvantages of Nuclear Energy.
(5) What is bioenergy?
(6) Define Nuclear Fusion.
(7) Define the term "Nuclear Waste".
(8) Define biomass.
(9) What is the fuel cell?
(10) Give the full form of DMFC and SOFC.

2 (a) Write answers of any **two** : **10**

(1) State different sources of energy used in day-to-day life.
(2) How does a Wind Turbine Generate Power?
(3) Explain the major application of wind power.
(4) State advantages and disadvantages of Wind Energy.

(b) Write answer of any **one** : **4**

(1) Discuss the Energy use patterns of India
(2) Write a comment on the Environmental Consideration of Wind Energy.

3 (a) Write answers of any **two** : **10**

(1) Write a note on Rayleigh Scattering, Mie Scattering and Nonselective Scattering.

(2) How does Solar Power Plant work?

(3) Explain the working of Solar Cooker.

(4) State the working of Solar heater.

(b) Write answer of any **one** : **4**

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

(2) Explain briefly the mechanism of solar cells.

4 (a) Write answers of any **two** : **10**

(1) Explain floating dome type biogas plant.

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

(3) Explain the working principal of hydropower plant.

(4) Write advantages and disadvantages of biomass energy

(b) Write answer of any **one** : **4**

(1) State Environmental constrains of biogas.

(2) Write a short note on Biofuels.

5 (a) Write answers of any **two** : **10**

(1) What are the major applications of Geothermal Energy?

(2) Write a brief note on problems in harnessing Geothermal Energy

(3) Explain the principle of operation of alkaline fuel cell.

(4) Write a note on Molten Carbonate Fuel Cells (MCFC).

(b) Write answer of any **one** : **4**

(1) State Environmental impact of Geothermal Energy.

(2) What are the potential applications of fuel cell?