12/12/1

DOON UNIVERSITY, DEHRADUN

Semester Final Examination, First Semester, 2016

School of Environment & Natural Resources

M.Sc. (Natural Resource Management)

Course: ENR – 512: Energy Resources and their Management

Time Allowed: 3 Hours *Maximum Marks: 50*

Note: Attempt All Questions from Sections A,B,C

SECTION: A (a) (Short Answer Type Questions). Attempt ~~all~~ any five questions.

(Marks 5 x 2=10)

1. What is the energy payback period of wind generation ?
2. Explain EMR spectrum
3. What do you understand by earth's albedo?
4. Type of turbine used in Hydropower generation.
5. What are biofuels.? Name any two biofuels.
6. Why hydro power is preferred over thermal power?
7. What is first stage generation of bioenergy

SECTION: B (Short Answer Type Questions). Attempt any FIVE questions.

(Marks: 5 x 4=20)

1. Writ short notes on the following
   (a) Pyrolysis
   (b) HAWT
2. Explain the Lift and Drag Pricipal of Wind Energy.
3. What are the environmental impacts of Tidal energy?
4. Name three important reasons for choosing Brahmputra and Ganga basin as regions of high hydropower potential.

5. Name three important parameters required for calculating power output of a hydro-electric power plant.
6. With the help of diagram explain the working of Fixed-Dome type Biogas Plant.
7. How the use of renewable energy can support the climate change concerns?

SECTION: C (Long Answer Type Questions). Attempt any TWO Questions.

(Marks: 10 x 2= 20)

1. Discuss in detail the working principal of solar photovoltaic energy conversion.
2. What is the basic source of Geothermal Energy. Which are the regions in India where good potential for geothermal energy exist and why? Explain the various types of geothermal resources.
3. Draw a diagram of a hydro power plant. Define catchment area, dam, penstock, tailrace and turbines of a hydropower plant
4. Define Solidity, nacelle, power coefficient, cut-in, cut-out and design speed of a wind machine.