

M. Sc. Semester-II Examination 2017

Environmental Science

Course: MEC-24

(Energy and Environment)

Time : Three Hours

Full Marks : 40

Questions are of value as indicated in the margin

Answer Question No.1 and **any four** from the rest

1. Write short notes on **any four** of the following : 2×4=8
 - (a) Energy and Society
 - (b) Petroleum reservoir
 - (c) Fast breeder reactor
 - (d) Tidal energy
 - (e) Gasohol
 - (f) Smart grid
 2. (a) Discuss the Indian government's goal to enhance the electricity generation from renewable energy sources. What are the advantages and disadvantages of these energy? (3+2)+3=8
(b) Suggest some methods for energy conservations.
 3. (a) Write a note on SPV (solar photovoltaic cell). 4+4=8
(b) What is 'passive solar energy' and how it can be exploited for our benefit?
 4. (a) Write the basic principle of electricity generation through wind turbines. 4+4=8
(b) Compare the advantages and disadvantages of horizontal and vertical axis wind turbines (HAWT & VAWT).
 5. (a) Write the basic principles and component of hydroelectric power plants. 4+4=8
(b) Describe the environmental impact of mega hydropower projects.
 6. (a) What is biogas? 1+4+3=8
(b) Discuss different factors affecting microbial community in anaerobic digestion for biogas production.
(c) What are the disadvantages of biogas technology?
 7. Write short notes on the following 4+4=8
 - (a) Hog fuel
 - (b) Advantage of using bioethanol over petrol.
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