

B. Sc. Semester-III (Honours) Examination, 2020 (CBCS)

Subject: Physics

Paper: SEC-I (Renewable Energy)

Time: 2 Hours

Full Marks: 40

Answer any eight of the following questions: $8 \times 5 = 40$

1. What do you mean by conventional and non-conventional energy? State the advantages and disadvantages of non-conventional energy sources.
2. Define photovoltaic effect. Describe the solar cell function with neat structure.
3. What is green house and how does it work? Draw a schematic diagram of a solar distillation system.
4. What is the cause of wind? What is power curve of a wind turbine? On which factors does the power output of a wind turbine depend?
5. Define osmosis. Is osmosis an active process? Briefly discuss the principle of generating osmotic power.
6. Write a short note on biochemical conversion.
7. State the principle of generating hydroelectricity. What are the advantages and disadvantages of a hydroelectric power plant? Name two hydroelectric power plants in India.

8. Discuss the different kinds of geothermal resources. Give two natural examples of geothermal energy sources.
9. How does a piezoelectric generator work? How is piezoelectric voltage measured? Can piezoelectric charge a battery?
10. What is electromagnetic energy harvesting? Explain with diagram the working principle of a linear electromagnetic generator.

OR

B. Sc. Semester-III (Honours) Examination, 2020 (CBCS)

Subject: Physics

Paper: SEC-I (Weather Forecasting)

Time: 2 Hours

Full Marks: 40

The figures in the margin indicate full marks. Candidates are required to give their answers in their own words as far as practicable

Answer *any eight* of the following questions: $8 \times 5 = 40$

1. Discuss the salient features of the different atmospheric layers.
2. Discuss five important causes behind the formation of tropical cyclone.
3. Define Coriolis force and explain the role of Coriolis force in controlling the direction of wind.
4. Explain the mechanism of rainfall in the light of any theory.
5. Explain the blueness of sky during daytime. How does the sky appear from the surface of moon during daytime and why? Give an example of a perfect black body.
6. Distinguish between weather and climate.
7. Explain the importance of humidity in atmosphere.
8. What do you understand by air mass and front? Write down the conditions for development of air mass.
9. Discuss one natural cause and two man-made causes responsible for ozone depletion.
10. Distinguish between cyclone and anticyclone.