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Roll No . 0502 MEIS1025

## ME-7005(2) (CBGS)

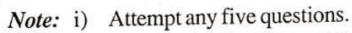
## **B.E. VII Semester**

Examination, November 2019

## Choice Based Grading System (CBGS) Power Technology

Time: Three Hours

Maximum Marks: 70



- ii) All questions carry equal marks.
- a) Define chain reaction. List out advantages and disadvantages of Nuclear Power Station.
  - b) What are the reasons for using cadmium as a control rod in nuclear reactor? Suggest other suitable materials for control rod and moderator.
- a) Write short notes on the following:
  - i) Carbon dating
  - ii) Large Hadron Collider (LHC)
  - iii) Biological effects of radiation
  - iv) Nuclear waste disposal
  - Explain the International Thermonuclear Experimental Reactor (ITER) in detail.
- 3. a) Define the following terms related to solar radiation.
  - i) Diffuse radiation
  - ii) Beam radiation
  - iii) Insolation
  - iv) Solar Constant



- b) Describe in brief, solar thermal energy storage and utilisation.
- 4. a) Explain the working of solar pond and solar water heaters.
  - b) What is the basic principle of wind energy conversion?

    Describe basic concept of aerodynamics.
- 5. a) Describe different types of wind turbines on the basis of axis of rotation with the help of neat sketch.
  - b) Explain the wind machine classifications and applications.



- 6. a) List and explain the main constituents of biomass materials.
  - State various routes of biomass energy conversion to other form of energy.
- 7. a) Explain biomass general chemical thermodynamics and combustion.
  - b) What is hydrogen energy? How hydrogen as an energy source can be stored in different ways?
- 8. a) What are the different methods for production of Hydrogen?
  - b) Explain the working of a fuel cell and list the different types of fuel cells with brief explanation of each type.



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