DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY,
LONERE – RAIGAD - 402 103
End Semester Examination – December - 2017

Branch: B.Tech. **Semester: I**

Subject with Subject Code: Energy and Environmental Engineering (CHE106) **Marks: 60**

Date: 20 / 12 / 2017 **Time: 3 Hrs.**

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Instructions to the Students:

1. Each question carries 12 marks.
2. Attempt any five questions of the following.
3. Illustrate your answers with neat sketches, diagram, etc., wherever necessary.
4. If some part or parameter is noticed to be missing, you may appropriately assume it and should mention it clearly

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Q.1. Solve any Two of the following: **(6 × 2 = 12)**

(a) Explain the working of a Hydro Electric Power plant with a neat diagram? Write at least four advantages and disadvantages each of the Hydro Electric Power.

(b) Enumerate the various systems and components used in Thermal Power plant. Describe Fly ash circuit and Cooling water circuit in these power plants.

(c) What are the fossil fuels used for generation of conventional power? Write the correct type of energy produced by the following power plants.

i) kalkappam in Tamil Nadu,
ii) Reliance Power in Pokharan in Rajashthan,
iii) Almatti in Karnataka, and
iv) Koradi in Maharashtra

Q.2. Solve any Two of the following: **(6 × 2 = 12)**

(a) How the wind mills are classified? Show with a flow chart. Explain briefly about vertical wind mill with a neat sketch.

(b) Define solar energy? What is flat plate collector? Describe its components with suitable sketch.

(c) Give classification of fuel cells using a flowchart. What are the advantages and disadvantages of a fuel cell? State any four each.

Q.3. Attempt the following: **(6 × 2 = 12)**

(a) What do you mean by energy conservation? Explain the measures to be taken to reduce the energy conservation in domestic refrigerator. List any four measures.

(b) What is energy efficiency? Write atleast six practices that lead to increase in energy efficiency of the home appliances viz. mixer-grinder, water heater, flour mill, electric lighting, air conditioner, etc.

Q.4. Attempt the following: **(6 × 2 = 12)**

(a) What is the difference between primary and secondary air pollutants? Give some examples of each? List several illnesses that are caused by the dirty air.

(b) What is "sick building syndrome"? How do you prevent it? Write any four corrective steps for making air free from lead as a particulate matter pollutant.

Q.5. Solve the following: **(6 × 2 = 12)**

(a) What are the main causes of water pollution? Write at least four measures to be taken for controlling water pollution.

(b) What are the sources and their corresponding effects of noise pollution on human health? Explain in detail.

Q.6. Solve the following: **(6 × 2 = 12)**

(a) Define the term Water Pollution. Explain BOD and Eutriphication in connection with water pollution.

(b) What are the various methods of safe disposal of wastes? Describe the process of municipal sewage treatment with a simple sketch.