

**DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE**

**Regular End Semester Examination – Summer 2022**

**Course: B. Tech.**

**Branch : First Year**

**Semester : II**

**Subject Code & Name: BTES205E Energy and Environment Engineering**

**Max Marks: 60**

**Date:29/08/2022**

**Duration: 3.45 Hr.**

**Instructions to the Students:**

1. All the questions are compulsory.
2. Each question carries 12 marks.
3. Illustrate your answers with neat sketches, diagram etc., wherever necessary
4. The level of question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in ( ) in front of the question.
5. Use of non-programmable scientific calculators is allowed.
6. Assume suitable data wherever necessary and mention it clearly.

|  | (Level/CO)   | Marks |
|--|--------------|-------|
| <b>Q.1 Solve Any Two of the following.</b>   |              |       |
| A) Write the sequence of energy transformations taking place in the following:<br>Nuclear power plant, Gas turbine and Hydro Power plant       | BTES205-1/2  | 6     |
| B) Explain the function of following components used in power plant:<br>i) Condenser ii) Nuclear Fuel. iii) Penstock.                          | BTES 205-3   | 6     |
| C) What is a nuclear chain reaction? Explain the importance of moderator and control rods in a nuclear reactor with respect to chain reaction? | BTES 205-1/3 | 6     |
| <b>Q.2 Solve Any Two of the following.</b>   |              |       |
| A) What is the source of tidal energy? What are the potential sites of tidal energy in India?  | BTES 205-2/3 | 6     |
| B) What is Bio-mass? Write the percentage composition of Bio-gas. What are the environmental and health benefits of Bio-gas utilization?       | BTES 205-2   | 6     |
| C) How the Wind mills are classified? Sketch the diagram of a HAWT, and explain the function of its main components.                           | BTES 205-2   | 6     |
| <b>Q.3 Solve the following.</b>  |              |       |
| A) What do you understand by maximum energy efficiency in context with energy conservation principle? Discuss with a suitable example.         | BTES 205-1   | 6     |
| B) How do you conserve the energy in pharmaceutical industry? Write the suitable measures.   | BTES 205-1   | 6     |
| <b>Q.4 Solve Any Two of the following.</b>   |              |       |
| A) What are the fixed major sources of outdoor pollution? What effects does air pollution have on Health of animals and plants and materials.  | BTES 205-1   | 6     |
| B) Differentiate between   | BTES 205-4   | 6     |

- i) Dust and smoke.
- ii) Pollutants and Toxicant.
- iii) Smoke and Smog.

C) Explain the types of water pollutants in brief. How do vehicles responsible for water pollution? BTES 205-4 **6**

**Q. 5 Solve Any Four of the following.**

- A) What are the effects of noise pollution on children’s health? BTES 205-4 **3**
- B) What is marble cancer? How is Taj Mahal turning yellow? BTES 205-4 **3**
- C) Write in brief about the sources of thermal pollution and its effects. BTES 205-4 **3**
- D) How oil spills and sediments degrade the water quality? Explain. BTES 205-4 **3**
- E) Write briefly about the major sources of noise pollution. BTES 205-4 **3**
- F) What is radioactive pollution? What are its effects? BTES 205-4 **3**

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