

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Regular End Semester Examination – Winter 2022

Course: B. Tech.

Branch:

Semester: I

Subject Code & Name: BTES105/BTE205E Energy and Environment Engineering

Max Marks: 60

Date: 29/03/2023

Duration: 3 Hr.

Instructions to the Students:

1. All the questions are compulsory.
2. Illustrate your answers with neat sketches, diagram etc., wherever necessary
3. 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.
4. Use of non-programmable scientific calculators is allowed.
5. Assume suitable data wherever necessary and mention it clearly.

	(Level/CO)	Marks
Q.1 Solve Any Two of the following.		
A) What are the advantages of conventional energy sources? Explain with a simple diagram the working of a gas based thermal power plant and list at least two such power plants in India.	Remember/CO1	6
B) Why nuclear power plants are important for the development of the nation? Explain with a neat diagram the function of nuclear reactor and its components in the nuclear power plant.	Remember/CO1	6
C) What are the disadvantages of coal based thermal power plants over the hydroelectric power plant? Write any four. Discuss coal and ash circuit of a coal based thermal power plant.	Remember/CO1	6
Q.2 Solve Any Two of the following.		
A) With a neat diagram, explain how wind energy can be converted into electrical energy.	Understand/CO2	6
B) Explain how ocean tides are generated and how the power can be tapped? Discuss the limitations of this method.	Understand/CO2	6
C) What is the main advantage and disadvantage of biogas power? What are the main constituents? What are the factors affecting on the performance of biogas digester?	Remember /CO2	6
Q.3 Solve Any Two of the following.		
A) Why should you look for BEE star labels when buying appliances? How the energy efficiency in industries can be improved?	Remember/CO3	6
B) Define energy conservation. What energy conservation practices can be implemented while transportation by vehicles on roads.	Remember/CO3	6
C) How one can improve the energy conservation in home appliances like refrigerator and Air conditioner? Explain.	Remember/CO3	6
Q.4 Solve Any Two of the following.		
A) Define primary and secondary air pollutants. Give the various causes of air pollution and write their remedies. Any four.	Understand/CO4	6
B) Why deforestation is considered as major reason for air pollution? Explain the measures to be taken to control the air pollution. Any six.	Remember/CO4	6

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| C) | What are the four causes of particulate matter? What are their categories? How does it affect the environment? And how do you reduce the pollution arises due to particulate matter? | Remember/CO4 | 6 |
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Q. 5 Solve Any Two of the following.

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| A) | Define Noise pollution. What are the effects of noise pollution on humans and wildlife? | Remember/CO5 | 6 |
| B) | Explain the concept of BOD and COD used for measuring water pollution. | Remember/CO5 | 6 |
| C) | What causes the thermal pollution? How can we prevent thermal pollution? How can thermal pollution be prevented? | Remember/CO5 | 6 |

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