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P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belagavi)

Seventh Semester, B.E. - Civil Engineering

Semester End Examination; Dec. - 2019

Energy and Environment

Time: 3 hrs

Max. Marks: 100

Note: Answer FIVE full questions, selecting ONE full question from each unit.

UNIT - I

- 1 a. Define Energy. Justify energy plays an important role in socio economic development of the country. 8
- b. Explain the classifications of energy sources along with an example. 8
- c. Discuss the Indian energy scenario. 4
- 2 a. What are the prospects of renewable energy sources in India listing its advantages? 8
- b. Write briefly about energy conservation. 6
- c. Discuss in brief Indian Electricity Act 2003. 6

UNIT - II

- 3 a. Acid rain is one of the worst forms of air pollution. Justify the statement. 8
- b. Briefly explain ozone layer depletion along with its effects. 6
- c. Bring out the salient features of air pollution Act. 6
- 4 a. Greenhouse effect is a global issue. Explain the term greenhouse effect and its consequences. 8
- b. Define sustainability. How it can be achieved with respect to energy? 6
- c. Write a note on global warming. 6

UNIT - III

- 5 a. With a neat sketch, explain the working of a hydro power project mentioning the components of a project. 8
- b. State the factors governing the selection of site for hydroelectric power plant. 6
- c. What are the advantages and disadvantages of hydropower project? 6
- 6 a. List down the advantages and disadvantages of nuclear power as compared to other sources. 6
- b. Write a note on disposal of nuclear waste. 6
- c. With a neat sketch, explain the power generation in nuclear power plant. 8

UNIT - IV

- 7 a. Define solar energy is the promising option for a developing country like India. Justify the statement. 6
- b. Enumerate the different types of concentrating type of collectors. Specify their advantages over the flat plate collectors. 8
- c. Write a note on photo voltaic solar energy conversion. 6

- 8 a. Describe the main considerations in selecting a site for wind energy plant. 6
- b. Explain briefly the horizontal wind mill with neat sketch. 8
- c. What is the basic principle of wind energy conversion system? Classify the wind energy conversion system. 6

UNIT - V

- 9 a. Describe the factors that affect bio digestion. 6
- b. What is meant by bio energy? Explain in detail principle of bio conversion. 6
- c. With the help of a neat diagram, explain the working of a drum type biogas plant. 8
- 10 a. What is meant by hybrid power system? Explain the need for hybrid energy technologies. 6
- b. Enumerate the advantages of hybrid energy technology. 6
- c. List various hybrid power system configurations. Explain solar and wind hybrid energy technology. 8

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