Code.No: RR310806 | RR | SET-1

III B.TECH – I SEM EXAMINATIONS, NOVEMBER - 2010
ENERGY ENGINEERING
(CHEMICAL ENGINEERING)

Time: 3hours **Max.Marks:80**

Answer any FIVE questions
All questions carry equal marks
- - -

1.a) Differentiate between ultimate and proximate analysis of coal.
b) Explain why some coals are caking and other are not.
c) Give an account on the classification of coal. [8+4+4]

2.a) State the differences between catalytic and thermal reforming processes.
b) Explain in detail semi-anthracite and anthracite coals. [8+8]

3.a) Classify petroleum based on the nature of hydrocarbons.
b) Define octane number. How is it determined? Suggest ways to improve octane number of an oil. [8+8]

4. Discuss the following with suitable illustrations.
a) Green – house effect
b) Photovoltaic systems
c) Indian scenario of non-conventional energy sources viz solar energy. [4+8+4]

5.a) Discuss the construction and working of a typical biogas plant with a neat sketch.
b) Give your suggestions and modifications for the existing pattern of energy consumption in India. [8+8]

6. Explain the mechanism of secondary batteries. Justify how efficient are they as a source for storage of chemical energy. [16]

7. Write a note on the following.
a) Alternate energy sources.
b) Applications of CNG.
c) Mechanical Energy storage systems [8+4+4]

8.a) Suggest methods for recycling of following materials
i) Aluminum Cans
ii) Lead in acid batteries.
b) Explain the difference between fixed dome type and floating dome type biogas plant. [8+8]

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Code.No: RR310806 | RR | SET-2

III B.TECH – I SEM EXAMINATIONS, NOVEMBER - 2010
ENERGY ENGINEERING
(CHEMICAL ENGINEERING)

Time: 3hours **Max.Marks:80**

Answer any FIVE questions
All questions carry equal marks
- - -

1.a) Classify petroleum based on the nature of hydrocarbons.
b) Define octane number. How is it determined? Suggest ways to improve octane number of an oil. [8+8]

2. Discuss the following with suitable illustrations.
a) Green – house effect
b) Photovoltaic systems
c) Indian scenario of non-conventional energy sources viz solar energy. [4+8+4]

3.a) Discuss the construction and working of a typical biogas plant with a neat sketch.
b) Give your suggestions and modifications for the existing pattern of energy consumption in India. [8+8]

4. Explain the mechanism of secondary batteries. Justify how efficient are they as a source for storage of chemical energy. [16]

5. Write a note on the following.
a) Alternate energy sources.
b) Applications of CNG.
c) Mechanical Energy storage systems [8+4+4]

6.a) Suggest methods for recycling of following materials
i) Aluminum Cans
ii) Lead in acid batteries.
b) Explain the difference between fixed dome type and floating dome type biogas plant. [8+8]

7.a) Differentiate between ultimate and proximate analysis of coal.
b) Explain why some coals are caking and other are not.
c) Give an account on the classification of coal. [8+4+4]

8.a) State the differences between catalytic and thermal reforming processes.
b) Explain in detail semi-anthracite and anthracite coals. [8+8]

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Code.No: RR310806 | RR | SET-3

III B.TECH – I SEM EXAMINATIONS, NOVEMBER - 2010
ENERGY ENGINEERING
(CHEMICAL ENGINEERING)

Time: 3hours **Max.Marks:80**

Answer any FIVE questions
All questions carry equal marks
- - -

1.a) Discuss the construction and working of a typical biogas plant with a neat sketch.
b) Give your suggestions and modifications for the existing pattern of energy consumption in India. [8+8]

2. Explain the mechanism of secondary batteries. Justify how efficient are they as a source for storage of chemical energy. [16]

3. Write a note on the following.
a) Alternate energy sources.
b) Applications of CNG.
c) Mechanical Energy storage systems [8+4+4]

4.a) Suggest methods for recycling of following materials
i) Aluminum Cans
ii) Lead in acid batteries.
b) Explain the difference between fixed dome type and floating dome type biogas plant. [8+8]

5.a) Differentiate between ultimate and proximate analysis of coal.
b) Explain why some coals are caking and other are not.
c) Give an account on the classification of coal. [8+4+4]

6.a) State the differences between catalytic and thermal reforming processes.
b) Explain in detail semi-anthracite and anthracite coals. [8+8]

7.a) Classify petroleum based on the nature of hydrocarbons.
b) Define octane number. How is it determined? Suggest ways to improve octane number of an oil. [8+8]

8. Discuss the following with suitable illustrations.
a) Green – house effect
b) Photovoltaic systems
c) Indian scenario of non-conventional energy sources viz solar energy. [4+8+4]

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Code.No: RR310806 | RR | SET-4

III B.TECH – I SEM EXAMINATIONS, NOVEMBER - 2010
ENERGY ENGINEERING
(CHEMICAL ENGINEERING)

Time: 3hours **Max.Marks:80**

Answer any FIVE questions
All questions carry equal marks
- - -

1. Write a note on the following.
   a) Alternate energy sources.
   b) Applications of CNG.
   c) Mechanical Energy storage systems [8+4+4]

2.a) Suggest methods for recycling of following materials
   i) Aluminum Cans
   ii) Lead in acid batteries.
   b) Explain the difference between fixed dome type and floating dome type biogas plant. [8+8]

3.a) Differentiate between ultimate and proximate analysis of coal.
   b) Explain why some coals are caking and other are not.
   c) Give an account on the classification of coal. [8+4+4]

4.a) State the differences between catalytic and thermal reforming processes.
   b) Explain in detail semi-anthracite and anthracite coals. [8+8]

5.a) Classify petroleum based on the nature of hydrocarbons.
   b) Define octane number. How is it determined? Suggest ways to improve octane number of an oil. [8+8]

6. Discuss the following with suitable illustrations.
   a) Green – house effect
   b) Photovoltaic systems
   c) Indian scenario of non-conventional energy sources viz solar energy. [4+8+4]

7.a) Discuss the construction and working of a typical biogas plant with a neat sketch.
   b) Give your suggestions and modifications for the existing pattern of energy consumption in India. [8+8]

8. Explain the mechanism of secondary batteries. Justify how efficient are they as a source for storage of chemical energy. [16]

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