Code No: RR411802 **RR** **Set No. 2**

IV B.Tech I Semester Examinations,November 2010
STEEL MAKING
Metallurgy And Material Technology

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

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) Why is steel making called as an oxidation process? How is it different from iron making? Explain? [10]
   (b) What are the various oxidizing-agents useful for steel making? Which of them are used for modified conventional processes of steel making? [6]
2. (a) What happens when light-scrap is charged first than the pigs in an acid-open hearth process? [8]
   (b) What are the reactions possible due to addition of lumpy iron-ore in acid open hearth explain. [8]
3. (a) What is the role of alloying-additions made at the end of any steel making process? [8]
   (b) What is Stokes law? How does it govern the rate of removal of reaction-products from the metal? Explain. [8]
4. What considerations need to be given for vacuum treatment such that liquid-steel temperature is maintained as the tapping temperature? [16]
5. (a) Explain the refractory lining materials used for different parts of LD-converter
   (b) Describe the role played by tar in reducing the basic refractory lining wear rate? Give on example of a tarred-refractory and the process in which it is used. [8+8]
6. Explain the following stages of an arc furnace heat. [8+8]
   (a) Melting stage
   (b) Refining stage
7. (a) List out the conditions controlling the rate of dephosphorisation in Kaldo-process. [4]
   (b) Describe the typical heat carried out in Kaldo process? [6]
   (c) Give the sequence of elimination of impurities in a Kaldo process with help of a diagram. [6]
8. (a) Explain the Aston Byer's process of making wrought iron in detail? [8]
   (b) What are the properties of wrought iron and how does it differ from steel? [4]

(c) Give some of applications of wrought iron? [4]

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Code No: RR411802 **RR** **Set No. 4**

IV B.Tech I Semester Examinations,November 2010
STEEL MAKING
Metallurgy And Material Technology

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

Answer any FIVE Questions
All Questions carry equal marks

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1. Explain the following stages of an arc furnace heat. [8+8]
   (a) Melting stage
   (b) Refining stage
2. (a) What is the role of alloying-additions made at the end of any steel making process? [8]
   (b) What is Stokes law? How does it govern the rate of removal of reaction-products from the metal? Explain. [8]
3. (a) What happens when light-scrap is charged first than the pigs in an acid-open hearth process? [8]
   (b) What are the reactions possible due to addition of lumpy iron-ore in acid open hearth explain. [8]
4. (a) Why is steel making called as an oxidation process? How is it different from iron making? Explain? [10]
   (b) What are the various oxidizing-agents useful for steel making? Which of them are used for modified conventional processes of steel making? [6]
5. What considerations need to be given for vacuum treatment such that liquid-steel temperature is maintained as the tapping temperature? [16]
6. (a) Explain the refractory lining materials used for different parts of LD-converter
   (b) Describe the role played by tar in reducing the basic refractory lining wear rate? Give on example of a tarred-refractory and the process in which it is used. [8+8]
7. (a) List out the conditions controlling the rate of dephosphorisation in Kaldo-process. [4]
   (b) Describe the typical heat carried out in Kaldo process? [6]
   (c) Give the sequence of elimination of impurities in a Kaldo process with help of a diagram. [6]
8. (a) Explain the Aston Byer's process of making wrought iron in detail? [8]
   (b) What are the properties of wrought iron and how does it differ from steel? [4]

(c) Give some of applications of wrought iron? [4]

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Code No: RR411802 **RR** **Set No. 1**

IV B.Tech I Semester Examinations,November 2010
STEEL MAKING
Metallurgy And Material Technology

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

Answer any FIVE Questions
All Questions carry equal marks

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1. Explain the following stages of an arc furnace heat. [8+8]
   (a) Melting stage
   (b) Refining stage
2. (a) What is the role of alloying-additions made at the end of any steel making process? [8]
   (b) What is Stokes law? How does it govern the rate of removal of reaction-products from the metal? Explain. [8]
3. (a) Why is steel making called as an oxidation process? How is it different from iron making? Explain? [10]
   (b) What are the various oxidizing-agents useful for steel making? Which of them are used for modified conventional processes of steel making? [6]
4. (a) Explain the refractory lining materials used for different parts of LD-converter]
   (b) Describe the role played by tar in reducing the basic refractory lining wear rate? Give on example of a tarred-refractory and the process in which it is used. [8+8]
5. (a) List out the conditions controlling the rate of dephosphorisation in Kaldo-process. [4]
   (b) Describe the typical heat carried out in Kaldo process? [6]
   (c) Give the sequence of elimination of impurities in a Kaldo process with help of a diagram. [6]
6. (a) What happens when light-scrap is charged first than the pigs in an acid-open hearth process? [8]
   (b) What are the reactions possible due to addition of lumpy iron-ore in acid open hearth explain. [8]
7. What considerations need to be given for vacuum treatment such that liquid-steel temperature is maintained as the tapping temperature? [16]
8. (a) Explain the Aston Byer's process of making wrought iron in detail? [8]
   (b) What are the properties of wrought iron and how does it differ from steel? [4]

(c) Give some of applications of wrought iron? [4]

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Code No: RR411802 **RR** **Set No. 3**

IV B.Tech I Semester Examinations,November 2010
STEEL MAKING
Metallurgy And Material Technology

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

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) Why is steel making called as an oxidation process? How is it different from iron making? Explain? [10]
   (b) What are the various oxidizing-agents useful for steel making? Which of them are used for modified conventional processes of steel making? [6]
2. Explain the following stages of an arc furnace heat. [8+8]
   (a) Melting stage
   (b) Refining stage
3. (a) What happens when light-scrap is charged first than the pigs in an acid-open hearth process? [8]
   (b) What are the reactions possible due to addition of lumpy iron-ore in acid open hearth explain. [8]
4. (a) Explain the refractory lining materials used for different parts of LD-converter
   (b) Describe the role played by tar in reducing the basic refractory lining wear rate? Give on example of a tarred-refractory and the process in which it is used. [8+8]
5. (a) Explain the Aston Byer's process of making wrought iron in detail? [8]
   (b) What are the properties of wrought iron and how does it differ from steel? [4]
   (c) Give some of applications of wrought iron? [4]
6. What considerations need to be given for vacuum treatment such that liquid-steel temperature is maintained as the tapping temperature? [16]
7. (a) What is the role of alloying-additions made at the end of any steel making process? [8]
   (b) What is Stokes law? How does it govern the rate of removal of reaction-products from the metal? Explain. [8]
8. (a) List out the conditions controlling the rate of dephosphorisation in Kaldo-process. [4]
   (b) Describe the typical heat carried out in Kaldo process? [6]

(c) Give the sequence of elimination of impurities in a Kaldo process with help of a diagram. [6]

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