

Code No: 07A3EC18

**R07****Set No. 2**

II B.Tech I Semester Examinations, November 2010

**PHYSICAL METALLURGY**

Metallurgy And Material Technology

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions  
All Questions carry equal marks

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1. Write short notes on the following:

- (a) Coring
- (b) Experimental methods of construction of equilibrium diagrams. [8+8]

2. Write a note on  $\alpha$ - $\beta$  brasses. Discuss the some of the important  $\alpha$ - $\beta$  brasses; discuss the properties and applications of these brasses. [16]

- 3. (a) Explain the necessity of alloying?
- (b) Explain the important properties of electron compounds? [8+8]

4. The lattice parameter of iron (BCC) is  $2.87\text{\AA}$ . Find the number of atoms / $\text{cm}^2$  on planes (100), (110) and (111). [16]5. Draw a binary phase diagram showing the formation of an intermediate phase ( $\gamma$ ) by a Peritectoid reaction. Label all the phases, areas, lines and write the various reactions involved in it. [16]

- 6. (a) What is quench annealing? Discuss its importance.
- (b) Explain why Brine solution gives faster cooling than water at the same temperature. [6+10]

- 7. (a) What are the limitations on the use of I - T diagrams.
- (b) What are the limitations of Austempering. [8+8]

8. Describe electrolytic polishing and etching of specimens? State its advantages and disadvantages? [16]

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Code No: 07A3EC18

**R07****Set No. 4**

II B.Tech I Semester Examinations, November 2010

**PHYSICAL METALLURGY**

Metallurgy And Material Technology

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions  
All Questions carry equal marks

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1. Write short notes on the following:

(a) Coring

(b) Experimental methods of construction of equilibrium diagrams. [8+8]

2. The lattice parameter of iron (BCC) is  $2.87\text{\AA}$ . Find the number of atoms /cm<sup>2</sup> on planes (100), (110) and (111). [16]

3. (a) What are the limitations on the use of I - T diagrams.

(b) What are the limitations of Austempering. [8+8]

4. (a) Explain the necessity of alloying?

(b) Explain the important properties of electron compounds? [8+8]

5. Draw a binary phase diagram showing the formation of an intermediate phase ( $\gamma$ ) by a Peritectoid reaction. Label all the phases, areas, lines and write the various reactions involved in it. [16]

6. (a) What is quench annealing? Discuss its importance.

(b) Explain why Brine solution gives faster cooling than water at the same temperature. [6+10]

7. Write a note on  $\alpha$ -  $\beta$  brasses. Discuss the some of the important  $\alpha$ -  $\beta$  brasses; discuss the properties and applications of these brasses. [16]

8. Describe electrolytic polishing and etching of specimens? State its advantages and disadvantages? [16]

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Code No: 07A3EC18

**R07****Set No. 1**

II B.Tech I Semester Examinations, November 2010

**PHYSICAL METALLURGY**

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) Explain the necessity of alloying?  
(b) Explain the important properties of electron compounds? [8+8]
2. Write a note on  $\alpha$ - $\beta$  brasses. Discuss the some of the important  $\alpha$ - $\beta$  brasses; discuss the properties and applications of these brasses. [16]
3. (a) What are the limitations on the use of I - T diagrams.  
(b) What are the limitations of Austempering. [8+8]
4. The lattice parameter of iron (BCC) is  $2.87 \text{ \AA}$ . Find the number of atoms / $\text{cm}^2$  on planes (100), (110) and (111). [16]
5. Describe electrolytic polishing and etching of specimens? State its advantages and disadvantages? [16]
6. Write short notes on the following:  
(a) Coring  
(b) Experimental methods of construction of equilibrium diagrams. [8+8]
7. (a) What is quench annealing? Discuss its importance.  
(b) Explain why Brine solution gives faster cooling than water at the same temperature. [6+10]
8. Draw a binary phase diagram showing the formation of an intermediate phase ( $\gamma$ ) by a Peritectoid reaction. Label all the phases, areas, lines and write the various reactions involved in it. [16]

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Code No: 07A3EC18

**R07****Set No. 3**

II B.Tech I Semester Examinations, November 2010

**PHYSICAL METALLURGY**

Metallurgy And Material Technology

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions  
All Questions carry equal marks

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1. Write a note on  $\alpha$ -  $\beta$  brasses. Discuss the some of the important  $\alpha$ -  $\beta$  brasses; discuss the properties and applications of these brasses. [16]
2. (a) Explain the necessity of alloying?  
(b) Explain the important properties of electron compounds? [8+8]
3. (a) What is quench annealing? Discuss its importance.  
(b) Explain why Brine solution gives faster cooling than water at the same temperature. [6+10]
4. Write short notes on the following:  
(a) Coring  
(b) Experimental methods of construction of equilibrium diagrams. [8+8]
5. Draw a binary phase diagram showing the formation of an intermediate phase ( $\gamma$ ) by a Peritectoid reaction. Label all the phases, areas, lines and write the various reactions involved in it. [16]
6. The lattice parameter of iron (BCC) is  $2.87\text{\AA}$ . Find the number of atoms / $\text{cm}^2$  on planes (100), (110) and (111). [16]
7. Describe electrolytic polishing and etching of specimens? State its advantages and disadvantages? [16]
8. (a) What are the limitations on the use of I - T diagrams.  
(b) What are the limitations of Austempering. [8+8]

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