Code No: R05411810 **R05** **Set No. 2**

IV B.Tech I Semester Examinations,NOVEMBER 2010
LIGHT METALS AND ALLOYS
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) Write a short note on Aluminium ores.
   (b) What is reductive roasting of an oxide concentrate? Discuss. [8+8]
2. Discuss in detail about the fluoride process for Beryl treatment. [16]
3. Explain the kinetics of ageing of age hardenable alloys. [16]
4. (a) How do the interstitial elements affect mechanical properties of commercially pure titanium?
   (b) Why is 0.2 % Pd added to titanium? What is 'E L 1' commercially pure titanium? What are its special applications? [6+10]
5. Discuss in detail the classifications of Titanium alloys. [16]
6. (a) What Zn - Al composition show high super plasticity?
   (b) What are the typical applications for Zinc casting alloys in engineering design?
   (c) What are some of major advantages of Zinc alloys in engineering design? [4+6+6]
7. Discuss about:
   (a) Grain refinement and
   (b) Sand casting of Magnesium alloys. [8+8]
8. (a) What are the sources of Zirconium? What are the other minerals associated with Zirconium minerals?
   (b) What is the general treatment given to Zircon?
   (c) What are the methods for separating Hafnium from Zirconium? [4+6+6]

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Code No: R05411810 **R05** **Set No. 4**

IV B.Tech I Semester Examinations,NOVEMBER 2010
LIGHT METALS AND ALLOYS
Metallurgy And Material Technology

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

Answer any FIVE Questions
All Questions carry equal marks

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2. (a) Write a short note on Aluminium ores.
   (b) What is reductive roasting of an oxide concentrate? Discuss. [8+8]
3. Discuss in detail about the fluoride process for Beryl treatment. [16]
4. Discuss about:
   (a) Grain refinement and
   (b) Sand casting of Magnesium alloys. [8+8]
5. Explain the kinetics of ageing of age hardenable alloys. [16]
6. (a) What Zn - Al composition show high super plasticity?
   (b) What are the typical applications for Zinc casting alloys in engineering design?
   (c) What are some of major advantages of Zinc alloys in engineering design? [4+6+6]
7. Discuss in detail the classifications of Titanium alloys. [16]
8. (a) What are the sources of Zirconium? What are the other minerals associated with Zirconium minerals?
   (b) What is the general treatment given to Zircon?
   (c) What are the methods for separating Hafnium from Zirconium? [4+6+6]

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Code No: R05411810 **R05** **Set No. 1**

IV B.Tech I Semester Examinations,NOVEMBER 2010
LIGHT METALS AND ALLOYS
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) What are the sources of Zirconium? What are the other minerals associated with Zirconium minerals?
   (b) What is the general treatment given to Zircon?
   (c) What are the methods for separating Hafnium from Zirconium? [4+6+6]
2. Discuss about:
   (a) Grain refinement and
   (b) Sand casting of Magnesium alloys. [8+8]
3. Explain the kinetics of ageing of age hardenable alloys. [16]
4. Discuss in detail about the fluoride process for Beryl treatment. [16]
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   (b) Why is 0.2 % Pd added to titanium? What is 'E L 1' commercially pure titanium? What are its special applications? [6+10]
8. (a) Write a short note on Aluminium ores.
   (b) What is reductive roasting of an oxide concentrate? Discuss. [8+8]

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Code No: R05411810 **R05** **Set No. 3**

IV B.Tech I Semester Examinations,NOVEMBER 2010
LIGHT METALS AND ALLOYS
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) How do the interstitial elements affect mechanical properties of commercially pure titanium?
   (b) Why is 0.2 % Pd added to titanium? What is 'E L 1' commercially pure titanium? What are its special applications? [6+10]
2. Discuss in detail the classifications of Titanium alloys. [16]
3. (a) What are the sources of Zirconium? What are the other minerals associated with Zirconium minerals?
   (b) What is the general treatment given to Zircon?
   (c) What are the methods for separating Hafnium from Zirconium? [4+6+6]
4. Discuss about:
   (a) Grain refinement and
   (b) Sand casting of Magnesium alloys. [8+8]
5. Explain the kinetics of ageing of age hardenable alloys. [16]
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   (c) What are some of major advantages of Zinc alloys in engineering design? [4+6+6]
8. Discuss in detail about the fluoride process for Beryl treatment. [16]

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