

**Code No: 58078**

**Set No. 1**

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**

**IV B.Tech. II Sem., II Mid-Term Examinations, April-2014**

**SUPER ALLOYS**

**Objective Exam**

**Name:** \_\_\_\_\_ **Hall Ticket No.**

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**Answer All Questions. All Questions Carry Equal Marks. Time: 20 Min. Marks: 10.**

**I. Choose the correct alternative:**

1. Vacuum induction melting of super alloys consists of \_\_\_\_\_ types of charges. [     ]  
A) One                      B) Two                      C) Three                      D) Three types and correction factor
2. For alloy 'RENE 41' the solutionizing and ageing temperatures are at [     ]  
A) 1065°C & 760°C                      B) 980°C & 720°C  
C) 1065°C & 200°C                      D) 980°C & 200°C
3. \_\_\_\_\_ is added to improve workability for nickel-iron base super alloys [     ]  
A) Boron                      B) Carbon                      C) Magnesium                      D) Silica
4. \_\_\_\_\_ strengthening is achieved by particles using as barriers to dislocation motion during deformation. [     ]  
A) Dispersion                      B) Solution                      C) Direct                      D) Indirect
5. \_\_\_\_\_ melting assures one of minimized macro and micro segregation. [     ]  
A) Electron beam                      B) Plasma                      C) Electro slag                      D) Vacuum arc
6. Wrought super alloys are generally more uniform with finer grain size and they have \_\_\_\_\_ properties. [     ]  
A) Low hardness                      B) Low tensile  
C) Low fatigue                      D) High tensile & fatigue
7. Dirty white spots are formed in \_\_\_\_\_ process employed for super alloys. [     ]  
A) VIM                      B) VAR                      C) ESR                      D) AOD
8. Special and important characteristic property of super alloys is [     ]  
A) High ductility                      B) Good formability  
C) High strength – high temperature                      D) High strength – to- weight ratio
9. Composition of Incoloy 800 is [     ]  
A) Ni - 46% Fe - 21% Cr                      B) Ni - 30% Cu - 3% Al - 0.6% Ti  
C) 60% Co - 30% Cr - 4.5% W                      D) Ni - Fe alloy
10. An example for age – hardenable turbine blade alloy. [     ]  
A) 18-8 austenitic steel                      B) Nimonic alloys  
C) Haste alloys                      D) Nickel – chromium alloys

**Cont.....2**

**II Fill in the Blanks:**

11. Columnar grain crystals are produced by \_\_\_\_\_.
12. Single crystal turbine blades show better corrosion resistance due to \_\_\_\_\_.
13. \_\_\_\_\_ at elevated temperatures exhibits characteristics of creep rupture.
14. \_\_\_\_\_ is one of the most widely used aluminide coating processes.
15. \_\_\_\_\_ are the keys to production of castings with hollow channels.
16. Ingot melting of super alloys is followed by \_\_\_\_\_ and then cogging to break down the as cast structure.
17. \_\_\_\_\_ heat treatment is not used because it forms excessive carbide precipitation in super alloys.
18. Alloy used in heat exchanges is of the type \_\_\_\_\_.
19. Creep resistance of pure iron is largely improved by the addition of small quantities of \_\_\_\_\_.
20. Alloys having high resistant to corrosion at elevated temperature, excellent thermal shock resistance and good electrical resistivity are \_\_\_\_\_.

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**Code No: 58078**

**Set No. 2**

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**

**IV B.Tech. II Sem., II Mid-Term Examinations, April-2014**

**SUPER ALLOYS**

**Objective Exam**

**Name:** \_\_\_\_\_ **Hall Ticket No.**

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**Answer All Questions. All Questions Carry Equal Marks. Time: 20 Min. Marks: 10.**

**I. Choose the correct alternative:**

1. \_\_\_\_\_ strengthening is achieved by particles using as barriers to dislocation motion during deformation. [      ]  
A) Dispersion      B) Solution      C) Direct      D) Indirect
2. \_\_\_\_\_ melting assures one of minimized macro and micro segregation. [      ]  
A) Electron beam      B) Plasma      C) Electro slag      D) Vacuum arc
3. Wrought super alloys are generally more uniform with finer grain size and they have \_\_\_\_\_ properties. [      ]  
A) Low hardness      B) Low tensile  
C) Low fatigue      D) High tensile & fatigue
4. Dirty white spots are formed in \_\_\_\_\_ process employed for super alloys. [      ]  
A) VIM      B) VAR      C) ESR      D) AOD
5. Special and important characteristic property of super alloys is [      ]  
A) High ductility      B) Good formability  
C) High strength – high temperature      D) High strength – to- weight ratio
6. Composition of Incoloy 800 is [      ]  
A) Ni - 46% Fe - 21% Cr      B) Ni - 30% Cu - 3% Al - 0.6% Ti  
C) 60% Co - 30% Cr - 4.5% W      D) Ni - Fe alloy
7. An example for age – hardenable turbine blade alloy. [      ]  
A) 18-8 austenitic steel      B) Nimonic alloys  
C) Haste alloys      D) Nickel – chromium alloys
8. Vacuum induction melting of super alloys consists of \_\_\_\_\_ types of charges. [      ]  
A) One      B) Two      C) Three      D) Three types and correction factor
9. For alloy 'RENE 41' the solutionizing and ageing temperatures are at [      ]  
A) 1065°C & 760°C      B) 980°C & 720°C  
C) 1065°C & 200°C      D) 980°C & 200°C
10. \_\_\_\_\_ is added to improve workability for nickel-iron base super alloys [      ]  
A) Boron      B) Carbon      C) Magnesium      D) Silica

**Cont.....2**

**II Fill in the Blanks:**

11. \_\_\_\_\_ is one of the most widely used aluminide coating processes.
12. \_\_\_\_\_ are the keys to production of castings with hollow channels.
13. Ingot melting of super alloys is followed by \_\_\_\_\_ and then cogging to break down the as cast structure.
14. \_\_\_\_\_ heat treatment is not used because it forms excessive carbide precipitation in super alloys.
15. Alloy used in heat exchanges is of the type \_\_\_\_\_.
16. Creep resistance of pure iron is largely improved by the addition of small quantities of \_\_\_\_\_.
17. Alloys having high resistant to corrosion at elevated temperature, excellent thermal shock resistance and good electrical resistivity are \_\_\_\_\_.
18. Columnar grain crystals are produced by \_\_\_\_\_.
19. Single crystal turbine blades show better corrosion resistance due to \_\_\_\_\_.
20. \_\_\_\_\_ at elevated temperatures exhibits characteristics of creep rupture.

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### Set No. 3

**IV B.Tech. II Sem., II Mid-Term Examinations, April-2014**

## Objective Exam

**Name:** \_\_\_\_\_ **Hall Ticket No.** \_\_\_\_\_

**Answer All Questions. All Questions Carry Equal Marks. Time: 20 Min. Marks: 10.**

**I. Choose the correct alternative:**

1. Wrought super alloys are generally more uniform with finer grain size and they have \_\_\_\_\_ properties. [      ]

A) Low hardness                                  B) Low tensile  
C) Low fatigue                                  D) High tensile & fatigue
2. Dirty white spots are formed in \_\_\_\_\_ process employed for super alloys. [      ]

A) VIM                                  B) VAR                                  C) ESR                                  D) AOD
3. Special and important characteristic property of super alloys is [      ]

A) High ductility                                  B) Good formability  
C) High strength – high temperature                                  D) High strength – to- weight ratio
4. Composition of Incoloy 800 is [      ]

A) Ni - 46% Fe - 21% Cr                                  B) Ni - 30% Cu - 3% Al - 0.6% Ti  
C) 60% Co - 30% Cr - 4.5% W                                  D) Ni - Fe alloy
5. An example for age – hardenable turbine blade alloy. [      ]

A) 18-8 austenitic steel                                  B) Nimonic alloys  
C) Haste alloys                                  D) Nickel – chromium alloys
6. Vacuum induction melting of super alloys consists of \_\_\_\_\_ types of charges. [      ]

A) One                                  B) Two                                  C) Three                                  D) Three types and correction factor
7. For alloy ‘RENE 41’ the solutionizing and ageing temperatures are at [      ]

A) 1065°C & 760°C                                  B) 980°C & 720°C  
C) 1065°C & 200°C                                  D) 980°C & 200°C
8. \_\_\_\_\_ is added to improve workability for nickel-iron base super alloys [      ]

A) Boron                                  B) Carbon                                  C) Magnesium                                  D) Silica
9. \_\_\_\_\_ strengthening is achieved by particles using as barriers to dislocation motion during deformation. [      ]

A) Dispersion                                  B) Solution                                  C) Direct                                  D) Indirect
10. \_\_\_\_\_ melting assures one of minimized macro and micro segregation. [      ]

A) Electron beam                                  B) Plasma                                  C) Electro slag                                  D) Vacuum arc

## Cont....2

**II Fill in the Blanks:**

11. Ingot melting of super alloys is followed by \_\_\_\_\_ and then cogging to break down the as cast structure.
12. \_\_\_\_\_ heat treatment is not used because it forms excessive carbide precipitation in super alloys.
13. Alloy used in heat exchanges is of the type \_\_\_\_\_.
14. Creep resistance of pure iron is largely improved by the addition of small quantities of \_\_\_\_\_.
15. Alloys having high resistant to corrosion at elevated temperature, excellent thermal shock resistance and good electrical resistivity are \_\_\_\_\_.
16. Columnar grain crystals are produced by \_\_\_\_\_.
17. Single crystal turbine blades show better corrosion resistance due to \_\_\_\_\_.
18. \_\_\_\_\_ at elevated temperatures exhibits characteristics of creep rupture.
19. \_\_\_\_\_ is one of the most widely used aluminide coating processes.
20. \_\_\_\_\_ are the keys to production of castings with hollow channels.

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## Set No. 4

**IV B.Tech. II Sem., II Mid-Term Examinations, April-2014**

## Objective Exam

**Name:** \_\_\_\_\_ **Hall Ticket No.** \_\_\_\_\_

**Answer All Questions. All Questions Carry Equal Marks. Time: 20 Min. Marks: 10.**

**I. Choose the correct alternative:**

- Special and important characteristic property of super alloys is [     ]  
A) High ductility                      B) Good formability  
C) High strength – high temperature       D) High strength – to- weight ratio
- Composition of Incoloy 800 is [     ]  
A) Ni - 46% Fe - 21% Cr                  B) Ni - 30% Cu - 3% Al - 0.6% Ti  
C) 60% Co - 30% Cr - 4.5% W            D) Ni - Fe alloy
- An example for age – hardenable turbine blade alloy. [     ]  
A) 18-8 austenitic steel                  B) Nimonic alloys  
C) Haste alloys                              D) Nickel – chromium alloys
- Vacuum induction melting of super alloys consists of \_\_\_\_\_ types of charges. [     ]  
A) One                      B) Two                      C) Three                      D) Three types and correction factor
- For alloy ‘RENE 41’ the solutionizing and ageing temperatures are at [     ]  
A) 1065°C & 760°C                      B) 980°C & 720°C  
C) 1065°C & 200°C                      D) 980°C & 200°C
- \_\_\_\_\_ is added to improve workability for nickel-iron base super alloys [     ]  
A) Boron                      B) Carbon                      C) Magnesium                      D) Silica
- \_\_\_\_\_ strengthening is achieved by particles using as barriers to dislocation motion during deformation. [     ]  
A) Dispersion                  B) Solution                      C) Direct                      D) Indirect
- \_\_\_\_\_ melting assures one of minimized macro and micro segregation. [     ]  
A) Electron beam                  B) Plasma                      C) Electro slag                      D) Vacuum arc
- Wrought super alloys are generally more uniform with finer grain size and they have \_\_\_\_\_properties. [     ]  
A) Low hardness                      B) Low tensile  
C) Low fatigue                      D) High tensile & fatigue
- Dirty white spots are formed in \_\_\_\_\_ process employed for super alloys. [     ]  
A) VIM                      B) VAR                      C) ESR                      D) AOD

## Cont....2

**II Fill in the Blanks:**

11. Alloy used in heat exchanges is of the type \_\_\_\_\_.
12. Creep resistance of pure iron is largely improved by the addition of small quantities of \_\_\_\_\_.
13. Alloys having high resistant to corrosion at elevated temperature, excellent thermal shock resistance and good electrical resistivity are \_\_\_\_\_.
14. Columnar grain crystals are produced by \_\_\_\_\_.
15. Single crystal turbine blades show better corrosion resistance due to \_\_\_\_\_.
16. \_\_\_\_\_ at elevated temperatures exhibits characteristics of creep rupture.
17. \_\_\_\_\_ is one of the most widely used aluminide coating processes.
18. \_\_\_\_\_ are the keys to production of castings with hollow channels.
19. Ingot melting of super alloys is followed by \_\_\_\_\_ and then cogging to break down the as cast structure.
20. \_\_\_\_\_ heat treatment is not used because it forms excessive carbide precipitation in super alloys.

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