

Code No: 58045

Set No. 1

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**

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

**FLUIDIZATION ENGINEERING**

**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. Bubbling Fluidized Bed is formed when bed of solid particles levitate due to an introduction of fluid that flows through the bed at \_\_\_\_\_ fluid velocity [      ]  
A) Low      B) High      C) Medium      D) None
2. Volume flow rate divided by cross-sectional area gives \_\_\_\_\_ velocity [      ]  
A) Terminal      B) Superficial      C) Minimum fluidization      D) None
3. The Ergun equation can be used to calculate the pressure drop in \_\_\_\_\_ [      ]  
A) Pipes      B) Plate towers      C) Packed beds      D) None
4. The ratio of pore volume to its total volume is known as \_\_\_\_\_ [      ]  
A) Porosity      B) Effectiveness      C) Efficiency      D) None
5. Porosity is a fraction between \_\_\_\_\_ [      ]  
A) 0 – 100      B) 0 – 10      C) 0 – 1      D) None
6. The mass transfer occurs in fluidized beds is between \_\_\_\_\_ [      ]  
A) Bubble      B) Clouds      C) Emulsion      D) All
7. The M.T coefficient  $K_{bc}$  can thought of as an exchange volume  $q$  between [      ]  
A) Gas-solid      B) Bubble and the cloud      C) Cloud –emulsion      D) None
8. The pressure drop in fluidized beds is calculated from \_\_\_\_\_ equation [      ]  
A) Dalton      B) Ergun      C) Camaron      D) None
9. The pressure drop range for gas – solid fluidization is \_\_\_\_\_ [      ]  
A) < 0.5 kPa      B) > 20 kPa      C) 0.5-20 kPa      D) None
10. Most of the bed heights in fluidization in the range of \_\_\_\_\_ [      ]  
A) 0.3-15m      B) < 0.3m      C) > 15m      D) None

**Cont.....2**

**II Fill in the Blanks:**

11. In fluidization, radial gas dispersion coefficient was \_\_\_\_\_ with bed height.
12. In fluidization, the bubbles are shown in \_\_\_\_\_ phase.
13. If the gas velocity is continuously increased, it will become sufficiently rapid to carry the solid particles upward, out of the bed it is known as \_\_\_\_\_
14. In K-L model, the assumption that as all the bubbles are in \_\_\_\_\_
15. In fluidization,  $\alpha$  is the volume of wake per volume of \_\_\_\_\_
16. In mass transfer of fluidization, if  $K_{bc} = K_{cb}$  the typical value of  $K_{bc} =$  \_\_\_\_\_
17.  $\epsilon_{mf} = 0.415/\psi^{0.33}$  is the \_\_\_\_\_ at minimum fluidization.
18. The mixing index \_\_\_\_\_ with the height of particles layers in the bed.
19. Fluidization is a process similar to \_\_\_\_\_
20. ANOVA model used in the design analysis of \_\_\_\_\_ in fluidization.

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Set No. 2

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**

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**FLUIDIZATION ENGINEERING**

**Objective Exam**

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

**I. Choose the correct alternative:**

1. The ratio of pore volume to its total volume is known as \_\_\_\_\_ [     ]  
A) Porosity                      B) Effectiveness                      C) Efficiency                      D) None
2. Porosity is a fraction between \_\_\_\_\_ [     ]  
A) 0 – 100                      B) 0 – 10                      C) 0 – 1                      D) None
3. The mass transfer occurs in fluidized beds is between \_\_\_\_\_ [     ]  
A) Bubble                      B) Clouds                      C) Emulsion                      D) All
4. The M.T coefficient  $K_{bc}$  can thought of as an exchange volume  $q$  between [     ]  
A) Gas-solid                      B) Bubble and the cloud                      C) Cloud –emulsion                      D) None
5. The pressure drop in fluidized beds is calculated from \_\_\_\_\_ equation [     ]  
A) Dalton                      B) Ergun                      C) Camaron                      D) None
6. The pressure drop range for gas – solid fluidization is \_\_\_\_\_ [     ]  
A) < 0.5 kPa                      B) > 20 kPa                      C) 0.5-20 kPa                      D) None
7. Most of the bed heights in fluidization in the range of \_\_\_\_\_ [     ]  
A) 0.3-15m                      B) < 0.3m                      C) > 15m                      D) None
8. Bubbling Fluidized Bed is formed when bed of solid particles levitate due to an introduction of fluid that flows through the bed at \_\_\_\_\_ fluid velocity [     ]  
A) Low                      B) High                      C) Medium                      D) None
9. Volume flow rate divided by cross-sectional area gives \_\_\_\_\_ velocity [     ]  
A) Terminal                      B) Superficial                      C) Minimum fluidization                      D) None
10. The Ergun equation can be used to calculate the pressure drop in \_\_\_\_\_ [     ]  
A) Pipes                      B) Plate towers                      C) Packed beds                      D) None

**Cont.....2**

**II Fill in the Blanks:**

11. In K-L model, the assumption that as all the bubbles are in \_\_\_\_\_
12. In fluidization,  $\alpha$  is the volume of wake per volume of \_\_\_\_\_
13. In mass transfer of fluidization, if  $K_{bc} = K_{cb}$  the typical value of  $K_{bc} =$  \_\_\_\_\_
14.  $\epsilon_{mf} = 0.415/\psi^{0.33}$  is the \_\_\_\_\_ at minimum fluidization.
15. The mixing index \_\_\_\_\_ with the height of particles layers in the bed.
16. Fluidization is a process similar to \_\_\_\_\_
17. ANOVA model used in the design analysis of \_\_\_\_\_ in fluidization.
18. In fluidization, radial gas dispersion coefficient was \_\_\_\_\_ with bed height.
19. In fluidization, the bubbles are shown in \_\_\_\_\_ phase.
20. If the gas velocity is continuously increased, it will become sufficiently rapid to carry the solid particles upward, out of the bed it is known as \_\_\_\_\_

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Set No. 3

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**

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

**FLUIDIZATION ENGINEERING**

**Objective Exam**

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

**I. Choose the correct alternative:**

1. The mass transfer occurs in fluidized beds is between \_\_\_\_\_ [     ]  
A) Bubble    B) Clouds    C) Emulsion    D) All
2. The M.T coefficient  $K_{bc}$  can thought of as an exchange volume  $q$  between [     ]  
A) Gas-solid    B) Bubble and the cloud    C) Cloud –emulsion    D) None
3. The pressure drop in fluidized beds is calculated from \_\_\_\_\_ equation [     ]  
A) Dalton    B) Ergun    C) Camaron    D) None
4. The pressure drop range for gas – solid fluidization is \_\_\_\_\_ [     ]  
A)  $< 0.5$  kPa    B)  $> 20$  kPa    C)  $0.5-20$  kPa    D) None
5. Most of the bed heights in fluidization in the range of \_\_\_\_\_ [     ]  
A)  $0.3-15$ m    B)  $< 0.3$ m    C)  $> 15$ m    D) None
6. Bubbling Fluidized Bed is formed when bed of solid particles levitate due to an introduction of fluid that flows through the bed at \_\_\_\_\_ fluid velocity [     ]  
A) Low    B) High    C) Medium    D) None
7. Volume flow rate divided by cross-sectional area gives \_\_\_\_\_ velocity [     ]  
A) Terminal    B) Superficial    C) Minimum fluidization    D) None
8. The Ergun equation can be used to calculate the pressure drop in \_\_\_\_\_ [     ]  
A) Pipes    B) Plate towers    C) Packed beds    D) None
9. The ratio of pore volume to its total volume is known as \_\_\_\_\_ [     ]  
A) Porosity    B) Effectiveness    C) Efficiency    D) None
10. Porosity is a fraction between \_\_\_\_\_ [     ]  
A)  $0 - 100$     B)  $0 - 10$     C)  $0 - 1$     D) None

**Cont.....2**

**II Fill in the Blanks:**

11. In mass transfer of fluidization, if  $K_{bc} = K_{cb}$  the typical value of  $K_{bc} =$  \_\_\_\_\_
12.  $\epsilon_{mf} = 0.415/\psi^{0.33}$  is the \_\_\_\_\_ at minimum fluidization.
13. The mixing index \_\_\_\_\_ with the height of particles layers in the bed.
14. Fluidization is a process similar to \_\_\_\_\_
15. ANOVA model used in the design analysis of \_\_\_\_\_ in fluidization.
16. In fluidization, radial gas dispersion coefficient was \_\_\_\_\_ with bed height.
17. In fluidization, the bubbles are shown in \_\_\_\_\_ phase.
18. If the gas velocity is continuously increased, it will become sufficiently rapid to carry the solid particles upward, out of the bed it is known as \_\_\_\_\_
19. In K-L model, the assumption that as all the bubbles are in \_\_\_\_\_
20. In fluidization,  $\alpha$  is the volume of wake per volume of \_\_\_\_\_

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Set No. 4

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**

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**FLUIDIZATION ENGINEERING**

**Objective Exam**

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

**I. Choose the correct alternative:**

1. The pressure drop in fluidized beds is calculated from \_\_\_\_\_ equation [      ]  
A) Dalton      B) Ergun      C) Camaron      D) None
2. The pressure drop range for gas – solid fluidization is \_\_\_\_\_ [      ]  
A) < 0.5 kPa      B) > 20 kPa      C) 0.5-20 kPa      D) None
3. Most of the bed heights in fluidization in the range of \_\_\_\_\_ [      ]  
A) 0.3-15m      B) < 0.3m      C) > 15m      D) None
4. Bubbling Fluidized Bed is formed when bed of solid particles levitate due to an introduction of fluid that flows through the bed at \_\_\_\_\_ fluid velocity [      ]  
A) Low      B) High      C) Medium      D) None
5. Volume flow rate divided by cross-sectional area gives \_\_\_\_\_ velocity [      ]  
A) Terminal      B) Superficial      C) Minimum fluidization      D) None
6. The Ergun equation can be used to calculate the pressure drop in \_\_\_\_\_ [      ]  
A) Pipes      B) Plate towers      C) Packed beds      D) None
7. The ratio of pore volume to its total volume is known as \_\_\_\_\_ [      ]  
A) Porosity      B) Effectiveness      C) Efficiency      D) None
8. Porosity is a fraction between \_\_\_\_\_ [      ]  
A) 0 – 100      B) 0 – 10      C) 0 – 1      D) None
9. The mass transfer occurs in fluidized beds is between \_\_\_\_\_ [      ]  
A) Bubble      B) Clouds      C) Emulsion      D) All
10. The M.T coefficient  $K_{bc}$  can thought of as an exchange volume  $q$  between [      ]  
A) Gas-solid      B) Bubble and the cloud      C) Cloud –emulsion      D) None

**Cont.....2**

**II Fill in the Blanks:**

11. The mixing index \_\_\_\_\_ with the height of particles layers in the bed.
12. Fluidization is a process similar to \_\_\_\_\_
13. ANOVA model used in the design analysis of \_\_\_\_\_ in fluidization.
14. In fluidization, radial gas dispersion coefficient was \_\_\_\_\_ with bed height.
15. In fluidization, the bubbles are shown in \_\_\_\_\_ phase.
16. If the gas velocity is continuously increased, it will become sufficiently rapid to carry the solid particles upward, out of the bed it is known as \_\_\_\_\_
17. In K-L model, the assumption that as all the bubbles are in \_\_\_\_\_
18. In fluidization,  $\alpha$  is the volume of wake per volume of \_\_\_\_\_
19. In mass transfer of fluidization, if  $K_{bc} = K_{cb}$  the typical value of  $K_{bc}$  = \_\_\_\_\_
20.  $\epsilon_{mf} = 0.415/\psi^{0.33}$  is the \_\_\_\_\_ at minimum fluidization.

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