

Code No: 54051

Set No. 1

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

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

BIOPROCESS 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. Factors to be considered for selection of medium [      ]  
A) availability and cost B) high productivity C) low formation of undesired products D) all the above
2. Methonine is obtained from [      ]  
A) soya bean hydrolysate B) casein hydrolysate C) cane molasses D) corn steep liquor
3. What is the % of molasses in media formulation for penicillin production [      ]  
A) 10                      B) 20                      C) 30                      D) 40
4. Stiochiometry is used to calculate the quantity of product formed based on the law of [      ]  
A) conservation of mass B) conservation of energy C) conservation of momentum D) all the above
5. Valency of elemental carbon is [      ]  
A) -2                      B) +2                      C) -4                      D) +4
6. In biological systems energy is mainly stored and transferred by [      ]  
A) ATP                      B) GTP                      C) UTP                      D) ADP
7. In metabolism of living cells, what is the high energy phosphate compound [      ]  
A) phosphoenol pyruvate B) glucose-6-phosphate C) glycerol-3-phosphate D) sodium phosphate
8. What are the units of heat of combustion of the substrate [      ]  
A) J/Kg of substrate B) J/Kg of cells C) J/Kg of substrate.sec D) J/Kg of cells.sec
9. What is the oder of the given equation,  $-r_A=kC_A$  [      ]  
A) 0                      B) 1                      C) 2                      D) 3
10. In Monod model,  $\mu$  represents [      ]  
A) dynamic viscosity B) kinematic viscosity C) specific growth rate D) max specific growth rate

**Cont.....2**

**II Fill in the blanks:**

11. \_\_\_\_\_ is one of the widely used and cheapest sources of carbon in media formulation for commercial production.
12. \_\_\_\_\_ is the most important compound in energy transformations in cells.
13. The basic purpose of design of impellers is to \_\_\_\_\_ in the medium.
14. \_\_\_\_\_ is the general formula used for cells when composition analysis is not available.
15. Respiratory quotient is a ratio between \_\_\_\_\_
16. Biomass yield is greater in \_\_\_\_\_ cultures.
17. The abbreviation GTP means \_\_\_\_\_.
18. In aerobic fermentation process cells take up \_\_\_\_\_ oxygen.
19. The specific growth rate equation for substrate inhibition is \_\_\_\_\_.
20. The relation between doubling time and specific growth rate is given as \_\_\_\_\_.

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Set No. 2

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

BIOPROCESS 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. Stiochiometry is used to calculate the quantity of product formed based on the law of [      ]  
A) conservation of mass B) conservation of energy C) conservation of momentum D) all the above
2. Valency of elemental carbon is [      ]  
A) -2 B) +2 C) -4 D) +4
3. In biological systems energy is mainly stored and transferred by [      ]  
A) ATP B) GTP C) UTP D) ADP
4. In metabolism of living cells, what is the high energy phosphate compound [      ]  
A) phosphoenol pyruvate B) glucose-6-phosphate C) glycerol-3-phosphate D) sodium phosphate
5. What are the units of heat of combustion of the substrate [      ]  
A) J/Kg of substrate B) J/Kg of cells C) J/Kg of substrate.sec D) J/Kg of cells.sec
6. What is the oder of the given equation,  $-r_A = kC_A$  [      ]  
A) 0 B) 1 C) 2 D) 3
7. In Monod model,  $\mu$  represents [      ]  
A) dynamic viscosity B) kinematic viscosity C) specific growth rate D) max specific growth rate
8. Factors to be considered for selection of medium [      ]  
A) availability and cost B) high productivity C) low formation of undesired products D) all the above
9. Methonine is obtained from [      ]  
A) soya bean hydrolysate B) casein hydrolysate C) cane molasses D) corn steep liquor
10. What is the % of molasses in media formulation for penicillin production [      ]  
A) 10 B) 20 C) 30 D) 40

**Cont.....2**

**II Fill in the blanks:**

11. \_\_\_\_\_ is the general formula used for cells when composition analysis is not available.
12. Respiratory quotient is a ratio between \_\_\_\_\_
13. Biomass yield is greater in \_\_\_\_\_ cultures.
14. The abbreviation GTP means \_\_\_\_\_.
15. In aerobic fermentation process cells take up \_\_\_\_\_ oxygen.
16. The specific growth rate equation for substrate inhibition is \_\_\_\_\_.
17. The relation between doubling time and specific growth rate is given as \_\_\_\_\_.
18. \_\_\_\_\_ is one of the widely used and cheapest sources of carbon in media formulation for commercial production.
19. \_\_\_\_\_ is the most important compound in energy transformations in cells.
20. The basic purpose of design of impellers is to \_\_\_\_\_ in the medium.

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Set No. 3

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

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

BIOPROCESS 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. In biological systems energy is mainly stored and transferred by [      ]  
A) ATP                      B) GTP                      C) UTP                      D) ADP
2. In metabolism of living cells, what is the high energy phosphate compound [      ]  
A) phosphoenol pyruvate B) glucose-6-phosphate C) glycerol-3-phosphate D) sodium phosphate
3. What are the units of heat of combustion of the substrate [      ]  
A) J/Kg of substrate    B) J/Kg of cells              C) J/Kg of substrate.sec        D) J/Kg of cells.sec
4. What is the order of the given equation,  $-r_A = kC_A$  [      ]  
A) 0                      B) 1                      C) 2                      D) 3
5. In Monod model,  $\mu$  represents [      ]  
A) dynamic viscosity    B) kinematic viscosity    C) specific growth rate    D) max specific growth rate
6. Factors to be considered for selection of medium [      ]  
A) availability and cost    B) high productivity    C) low formation of undesired products    D) all the above
7. Methionine is obtained from [      ]  
A) soya bean hydrolysate    B) casein hydrolysate    C) cane molasses    D) corn steep liquor
8. What is the % of molasses in media formulation for penicillin production [      ]  
A) 10                      B) 20                      C) 30                      D) 40
9. Stiochiometry is used to calculate the quantity of product formed based on the law of [      ]  
A) conservation of mass    B) conservation of energy    C) conservation of momentum    D) all the above
10. Valency of elemental carbon is [      ]  
A) -2                      B) +2                      C) -4                      D) +4

**Cont.....2**

**II Fill in the blanks:**

11. Biomass yield is greater in \_\_\_\_\_ cultures.
12. The abbreviation GTP means \_\_\_\_\_.
13. In aerobic fermentation process cells take up \_\_\_\_\_ oxygen.
14. The specific growth rate equation for substrate inhibition is \_\_\_\_\_.
15. The relation between doubling time and specific growth rate is given as \_\_\_\_\_.
16. \_\_\_\_\_ is one of the widely used and cheapest sources of carbon in media formulation for commercial production.
17. \_\_\_\_\_ is the most important compound in energy transformations in cells.
18. The basic purpose of design of impellers is to \_\_\_\_\_ in the medium.
19. \_\_\_\_\_ is the general formula used for cells when composition analysis is not available.
20. Respiratory quotient is a ratio between \_\_\_\_\_

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Set No. 4

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

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

BIOPROCESS 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. What are the units of heat of combustion of the substrate [      ]  
A) J/Kg of substrate    B) J/Kg of cells            C) J/Kg of substrate.sec            D) J/Kg of cells.sec
2. What is the order of the given equation,  $-r_A = kC_A$  [      ]  
A) 0                            B) 1                            C) 2                            D) 3
3. In Monod model,  $\mu$  represents [      ]  
A) dynamic viscosity    B) kinematic viscosity    C) specific growth rate    D) max specific growth rate
4. Factors to be considered for selection of medium [      ]  
A) availability and cost    B) high productivity    C) low formation of undesired products    D) all the above
5. Methionine is obtained from [      ]  
A) soya bean hydrolysate    B) casein hydrolysate    C) cane molasses    D) corn steep liquor
6. What is the % of molasses in media formulation for penicillin production [      ]  
A) 10                            B) 20                            C) 30                            D) 40
7. Stoichiometry is used to calculate the quantity of product formed based on the law of [      ]  
A) conservation of mass    B) conservation of energy    C) conservation of momentum    D) all the above
8. Valency of elemental carbon is [      ]  
A) -2                            B) +2                            C) -4                            D) +4
9. In biological systems energy is mainly stored and transferred by [      ]  
A) ATP                            B) GTP                            C) UTP                            D) ADP
10. In metabolism of living cells, what is the high energy phosphate compound [      ]  
A) phosphoenol pyruvate    B) glucose-6-phosphate    C) glycerol-3-phosphate    D) sodium phosphate

**Cont.....2**

**II Fill in the blanks:**

11. In aerobic fermentation process cells take up \_\_\_\_\_ oxygen.
12. The specific growth rate equation for substrate inhibition is \_\_\_\_\_.
13. The relation between doubling time and specific growth rate is given as \_\_\_\_\_.
14. \_\_\_\_\_ is one of the widely used and cheapest sources of carbon in media formulation for commercial production.
15. \_\_\_\_\_ is the most important compound in energy transformations in cells.
16. The basic purpose of design of impellers is to \_\_\_\_\_ in the medium.
17. \_\_\_\_\_ is the general formula used for cells when composition analysis is not available.
18. Respiratory quotient is a ratio between \_\_\_\_\_
19. Biomass yield is greater in \_\_\_\_\_ cultures.
20. The abbreviation GTP means \_\_\_\_\_.

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