

Code No: A107322302

Set No. 1

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

III B.Tech. II Sem., I Mid-Term Examinations, February – 2011

BIOCHEMICAL REACTION ENGINEERING-II

Objective Exam

Name: _____ **Hall Ticket No.**

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

I Choose the correct alternative:

1. ----- is defined as the ratio of mass or moles of product formed to the mass or moles of reactant consumed. []
a) Conversion b) Selectivity c) Yield d) method
2. Moles of product formed/moles of product that should have actually formed is []
a) conversion b) selectivity c) yield d) method
3. If we have feed 1 mol of glucose, out of which 0.1 mol of glucose has reacted and produced 0.2 mol of ethanol, the conversion rate will be []
a) 100% b) 200% c) 10% d) 20%
4. In batch reactor the component inflow will be always []
a) Maximum b) Constant c) Minimum d) zero
5. ----- is also called as full mixed reactor []
a) Batch b) Fed-batch c) CSTR d) Packed bed
6. In CSTR the dissolved O_2 concentration is ----- through out the bulk liquid phase. []
a) Maximum b) Constant c) Minimum d) zero
7. The biomass productivity of Batch and continuous cultures can be compared under the broadly applicable conditions, when []
a) $S_0 \gg K_s$ b) $S_0 \ll K_s$ c) $K_s \ll S_0$ d) All the above
8. In -----, cells can be grown with all nutrients in excess. []
a) Chemostat b) Turbidostat c) Nutristat d) tempostat
9. Fed batch reactors initially operated as []
a) Batch b) Fed-batch c) CSTR d) Packed bed.
10. When volumetric productivity of batch reactor compared with maximum productivity of chemostat, the ratio of final concentration to the inoculums concentration is approximately []
a) 1 b) 10 c) 100 d) 1

Cont.....2

Code No: A107322302

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Set No.1

II Fill in the blanks:

11. ----- is defined as the ratio of the amount of product formed to the amount of product that would have actually formed if all the feed material was converted to the product.
12. The overall mass balance for the batch reactors can be given as -----
13. Based on feeding mechanism the bioreactors are differentiated in to ----- groups.
14. Design equation for the batch reactor -----
15. The total batch time required for batch reactor is given by-----
16. In ----- reactor operation the dilution rate can be adjusted to maintain a constant value of the cell mass.
17. ----- is defined as the number of reactor volumes of feed at specified conditions, which can be treated at unit time.
18. Design equation for CSTR -----
19. In solidstate fermentation method microorganisms can grow in an environment of limited moisture without having -----
20. The leavening of bread by yeast is ----- process.

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Set No. 2

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Objective Exam

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

I Choose the correct alternative:

1. In batch reactor the component inflow will be always []
a) Maximum b) Constant c) Minimum d) zero
2. ----- is also called as full mixed reactor []
a) Batch b) Fed-batch c) CSTR d) Packed bed
3. In CSTR the dissolved O_2 concentration is ----- through out the bulk liquid phase. []
a) Maximum b) Constant c) Minimum d) zero
4. The biomass productivity of Batch and continuous cultures can be compared under the broadly applicable conditions, when []
a) $S_0 \gg K_s$ b) $S_0 \ll K_s$ c) $K_s \ll S_0$ d) All the above
5. In -----, cells can be grown with all nutrients in excess. []
a) Chemostat b) Turbidostat c) Nutristat d) tempostat
6. Fed batch reactors initially operated as []
a) Batch b) Fed-batch c) CSTR d) Packed bed.
7. When volumetric productivity of batch reactor compared with maximum productivity of chemostat, the ratio of final concentration to the inoculum concentration is approximately []
a) 1 b) 10 c) 100 d) 1
8. ----- is defined as the ratio of mass or moles of product formed to the mass or moles of reactant consumed. []
a) Conversion b) Selectivity c) Yield d) method
9. Moles of product formed/moles of product that should have actually formed is []
a) conversion b) selectivity c) yield d) method
10. If we have feed 1 mol of glucose, out of which 0.1 mol of glucose has reacted and produced 0.2 mol of ethanol, the conversion rate will be []
a) 100% b) 200% c) 10% d) 20%

Cont.....2

Code No: A107322302

:2:

Set No.2

II Fill in the blanks:

11. Design equation for the batch reactor -----
12. The total batch time required for batch reactor is given by-----
13. In ----- reactor operation the dilution rate can be adjusted to maintain a constant value of the cell mass.
14. ----- is defined as the number of reactor volumes of feed at specified conditions, which can be treated at unit time.
15. Design equation for CSTR -----
16. In solidstate fermentation method microorganisms can grow in an environment of limited moisture without having -----
17. The leavening of bread by yeast is ----- process.
18. ----- is defined as the ratio of the amount of product formed to the amount of product that would have actually formed if all the feed material was converted to the product.
19. The overall mass balance for the batch reactors can be given as -----
20. Based on feeding mechanism the bioreactors are differentiated in to ----- groups.

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Code No: A107322302

Set No. 3

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BIOCHEMICAL REACTION ENGINEERING-II

Objective Exam

Name: _____ **Hall Ticket No.**

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

I Choose the correct alternative:

1. In CSTR the dissolved O_2 concentration is ----- through out the bulk liquid phase. []
a) Maximum b) Constant c) Minimum d) zero
2. The biomass productivity of Batch and continuous cultures can be compared under the broadly applicable conditions, when []
a) $S_0 \gg K_s$ b) $S_0 \ll K_s$ c) $K_s \ll S_0$ d) All the above
3. In -----, cells can be grown with all nutrients in excess. []
a) Chemostat b) Turbidostat c) Nutristat d) tempostat
4. Fed batch reactors initially operated as []
a) Batch b) Fed-batch c) CSTR d) Packed bed.
5. When volumetric productivity of batch reactor compared with maximum productivity of chemostat, the ratio of final concentration to the inoculum concentration is approximately []
a) 1 b) 10 c) 100 d) 1
6. ----- is defined as the ratio of mass or moles of product formed to the mass or moles of reactant consumed. []
a) Conversion b) Selectivity c) Yield d) method
7. Moles of product formed/moles of product that should have actually formed is []
a) conversion b) selectivity c) yield d) method
8. If we have feed 1 mol of glucose, out of which 0.1 mol of glucose has reacted and produced 0.2 mol of ethanol, the conversion rate will be []
a) 100% b) 200% c) 10% d) 20%
9. In batch reactor the component inflow will be always []
a) Maximum b) Constant c) Minimum d) zero
10. ----- is also called as full mixed reactor []
a) Batch b) Fed-batch c) CSTR d) Packed bed

Cont.....2

Code No: A107322302

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Set No.3

II Fill in the blanks:

11. In ----- reactor operation the dilution rate can be adjusted to maintain a constant value of the cell mass.
12. ----- is defined as the number of reactor volumes of feed at specified conditions, which can be treated at unit time.
13. Design equation for CSTR -----
14. In solidstate fermentation method microorganisms can grow in an environment of limited moisture without having -----
15. The leavening of bread by yeast is ----- process.
16. ----- is defined as the ratio of the amount of product formed to the amount of product that would have actually formed if all the feed material was converted to the product.
17. The overall mass balance for the batch reactors can be given as -----
18. Based on feeding mechanism the bioreactors are differentiated in to ----- groups.
19. Design equation for the batch reactor -----
20. The total batch time required for batch reactor is given by-----

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Set No. 4

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

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Objective Exam

Name: _____ **Hall Ticket No.**

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

I Choose the correct alternative:

1. In -----, cells can be grown with all nutrients in excess. []
a) Chemostat b) Turbidostat c) Nutristat d) tempostat
2. Fed batch reactors initially operated as []
a) Batch b) Fed-batch c) CSTR d) Packed bed.
3. When volumetric productivity of batch reactor compared with maximum productivity of chemostat, the ratio of final concentration to the inoculums concentration is approximately []
a) 1 b) 10 c) 100 d) 1
4. ----- is defined as the ratio of mass or moles of product formed to the mass or moles of reactant consumed. []
a) Conversion b) Selectivity c) Yield d) method
5. Moles of product formed/moles of product that should have actually formed is []
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a) 100% b) 200% c) 10% d) 20%
7. In batch reactor the component inflow will be always []
a) Maximum b) Constant c) Minimum d) zero
8. ----- is also called as full mixed reactor []
a) Batch b) Fed-batch c) CSTR d) Packed bed
9. In CSTR the dissolved O_2 concentration is ----- through out the bulk liquid phase. []
a) Maximum b) Constant c) Minimum d) zero
10. The biomass productivity of Batch and continuous cultures can be compared under the broadly applicable conditions, when []
a) $S_0 > K_s$ b) $S_0 < K_s$ c) $K_s < S_0$ d) All the above

Cont.....2

Code No: A107322302

:2:

Set No.4

II Fill in the blanks:

11. Design equation for CSTR -----
12. In solidstate fermentation method microorganisms can grow in an environment of limited moisture without having -----
13. The leavening of bread by yeast is ----- process.
14. ----- is defined as the ratio of the amount of product formed to the amount of product that would have actually formed if all the feed material was converted to the product.
15. The overall mass balance for the batch reactors can be given as -----
16. Based on feeding mechanism the bioreactors are differentiated in to ----- groups.
17. Design equation for the batch reactor -----
18. The total batch time required for batch reactor is given by-----
19. In ----- reactor operation the dilution rate can be adjusted to maintain a constant value of the call mass.
20. ----- is defined as the number of reactor volumes of feed at specified conditions, which can be treated at unit time.

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