Unit 3 - week 1

Assignment 1

The due date for submitting this assignment has passed. As per our records you have not submitted this assignment.

Due on 2019-02-13, 23:59 IST.

1) Given are the important components of insulin bioprocessing. Match the following:

A
1. Defined medium
2. Recombinant E. coli
3. Insulin

B
a. Inoculum
b. Product
c. Substrate

1-a, 2-b, 3-c
1-c, 2-a, 3-b
1-b, 2-a, 3-c
1-c, 2-b, 3-a

No, the answer is incorrect.
Score: 0
Accepted Answers:
1-c, 2-a, 3-b

2) Monoclonal antibodies are produced using specialized cells called

- Cambial meristematic cells
- Microalgae
- Stem cells
- Hybridomas

No, the answer is incorrect.
Score: 0
Accepted Answers:
Hybridomas

3) What methods of sterilization from below could be used while handling temperature sensitive items required for a bioprocess?

- a.
- b.
- c.

No, the answer is incorrect.
Score: 0
Accepted Answers:
...
4) The actual factories in a bioreactor which acts to produce desirable products could be:
- [□] Bacteria
- [□] Plant cell
- [□] Fungi
- [□] Animal cell

No, the answer is incorrect.
Score: 0
Accepted Answers:
- Bacteria
- Plant cell
- Fungi
- Animal cell

5) Bio-oil production from microalgae is majorly carried out in a photobioreactor because:
- [□] The medium used is light sensitive
- [□] The product, bio-oil is light sensitive
- [□] Microalgae is photosynthetic
- [□] Precursors are light sensitive

No, the answer is incorrect.
Score: 0
Accepted Answers:
- Microalgae is photosynthetic

6) Which mode of operation of a bioreactor is suitable for a bioprocess that has a toxic end product (toxic to the cells in the reactor)?
- [□] Only batch operation
- [□] Only continuous operation
- [□] Only fed-batch operation
- [□] Both continuous and fed-batch

No, the answer is incorrect.
Score: 0
Accepted Answers:
- Both continuous and fed-batch

7) During a bioprocess, it is important to monitor the parameters such as temperature, pH and DO using their respective probes as variations in these could:
- [□] Affect the growth of the organism
- [□] Yield and quality of the product produced
- [□] Alter an enzyme activity
- [□] Affect the inner surface of the bioreactor

No, the answer is incorrect.
Score: 0
Accepted Answers:
- Affect the growth of the organism
Yield and quality of the product produced
After an enzyme activity

8) When a single cell suspension is subjected to heating, the rate of decrease in viable cell concentration is ___________ to the viable cell concentration at any time.

- Inversely proportional
- Directly proportional
- Equal
- Not related

No, the answer is incorrect.
Score: 0
Accepted Answers:
Directly proportional

9) The main factors to be considered while designing a sterilization protocol are:

- Temperature
- Time of exposure
- Initial number of organisms
- Initial pH of the medium

No, the answer is incorrect.
Score: 0
Accepted Answers:
Temperature
Time of exposure
Initial number of organisms

10) The media used for a bioprocess is contaminated with single cells with similar thermal response characteristics. It has been observed that by maintaining the media at $75^\circ C$ for 5 min, 60% of the cells become non-viable. Determine the decimal reduction time. Choose the answer closest to your calculated answer.

- 7.2 min
- 9.6 min
- 12.6 min
- 16.6 min

No, the answer is incorrect.
Score: 0
Accepted Answers:
12.6 min