

Biogen Specific Teaching Material

Introduction to USP – Seed Train Development





Questions & Answers

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1. Why is the seed-train process time consuming?

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1. The seed train is time consuming because a conventional cryopreserved cell-bank vial contains low cell numbers.

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2. Higher seeding density helps reduce the 500-L production bioreactor growth phase by how many days?

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2. Higher seeding density helps reduce the 500-L production bioreactor growth phase by about five days.

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3. What is the purpose of a seed train?

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3. The purpose of a seed train is to generate an adequate number of cells for the inoculation of a production bioreactor.

4. What is significantly reduced when replacing spinners with Wave bioreactors?

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4. What is significantly reduced is the number of required manipulations in a laminar flow hood.

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5. Name at least three (3) advantages of using single-use technology over stainless steel systems.

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5. Possible answers: Enhanced facility flexibility, time savings in setup, cleaning, sterilization, reduced capital investment.

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6. Fill the gap: Disposable Wave bioreactors are _____ used in seed-train expansion processes because they also decrease contamination risk.

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6. routinely

7. Single-use technology offers few advantages over stainless-steel systems. (true or false?)

7. False. Single-use technology offers numerous advantages over stainless-steel systems.

8. Fill the gap: Perfusion bioreactors have shown success in manufacturing commercial

8. therapeutics

9. With perfusion processes, relatively small bioreactor will remove unstable product from cultures more quickly than the more conventional batch and fed-batch processes. (true or false?)

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9. True.

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10. Put the correct verb: "Higher seeding density helps _____ the 500-L production bioreactor growth phase by about five days."

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10. Possible answers: CUT, SLOW, REDUCE

Thank you for your attention!

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