

Course No: BIPH 2315
Course Title: Biotechnology
Date: 14/03/2018
No. of Questions: (2)
Time: 1hours
Using Calculator (No)

University of Palestine



1st Exam For 2nd Sem.
2017/2018
Total Grade:

Instructor Name: Dr.Akram Atalla
Student No.: _____
Student Name: _____
College Name: Pharmacy & Biotechnology
Dep. / Specialist: _____
Using Dictionary (No)

Q1: choose the following answer :-

- Golden rice is a genetically modified crop plant where the incorporated genes are meant for biosynthesis of -----
 - vitamin A
 - vitamin C
 - vitamin B
 - Beta-carotene
- β -sheets are stabilized by
 - hydrophobic bonds
 - ionic bonds
 - hydrogen bonds
 - covalent bonds
 - all of the above
 - none of the above
- .What is true of plasmid?
 - Part of nuclear chromosome
 - Contains genes for vital activities
 - Found in viruses
 - Widely used in gene transfer
 - none of the above
- In ion-exchange chromatography
 - proteins are separated on the basis of their net charge
 - proteins are separated on the basis of their size
 - proteins are separated on the basis of their shape
 - either (b) or (c)
- Restriction endonucleases are most widely used in recombinant DNA technology. They are obtained from
 - Bacteriophages
 - Bacterial cells
 - Plasmids
 - All prokaryotic cell
- PCR proceeds in three distinct steps governed by temperature, they are in order of
 - Annealing, Synthesis (extension), Denaturation
 - Synthesis(extension), Annealing, Denaturation
 - Denaturation, Annealing, Synthesis(extension)
 - Denaturation, Synthesis(extension), Annealing

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7. A nucleoside is formed of
a) Pentose sugar, phosphate and nitrogen base)
b) phosphate and nitrogen base)
c) Pentose sugar and phosphate)
d) Pentose sugar and nitrogen base
e) none of the above
8. Which of the following may be added to stabilize the protein after yeast cells disruption?
A) NaCl
B) Protease inhibitor
C) Solvents
D) all of the above
E) none of the above
9. What is true about Bt toxin?
A) Bt protein exists as active toxin in the Bacillus
B) The inactive protoxin gets converted into active form in the insect gut
C) The concerned Bacillus has antitoxins
D) The activated toxin enters the ovaries of the pest to sterilise it and thus prevent its multiplication
10. Affinity chromatography deals with the
A) specific binding of a protein constituents for another molecule
B) protein - protein interaction
C) protein - carbohydrate interaction
D) all of the above
E) none of the above
11. Stirred-tank bioreactors have been designed for
A) Purification of the product
B) Addition of preservatives to the product
C) Availability of oxygen throughout the process
D) Ensuring anaerobic conditions in the culture vessel
D) all of the above
12. Transposons
A. are RNA sequences
B. are DNA sequences
C. are only found in eukaryotes
D. contain no genes
E. contain at least one gene
D. can often replicate

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13. Which one of the following bacteria has found extensive use in genetic engineering work in plants?

- A) Bacillus coagulans
- B) Xanthomonas citri
- C) Clostridium septicum
- D) Agrobacterium tumefaciens

14. Which of the following statements about SDS polyacrylamide gel electrophoresis is correct?

- A) Wanted proteins can be tested for their biological activity after separation by SDS polyacrylamide gel electrophoresis.
- B) Proteins are solubilized but not denatured when separated by SDS polyacrylamide gel electrophoresis.
- C) SDS polyacrylamide gel electrophoresis separates proteins on the basis of charge.
- D) SDS polyacrylamide gel electrophoresis separates proteins on the basis of size.

15. Which of the following statements about protein separation by gel filtration are correct? Please select all that apply.

- A) When a mixture of proteins is separated by gel filtration, the smallest molecular weight protein is eluted first.
- B) When a mixture of proteins is separated by gel filtration, the largest molecular weight protein is eluted first.
- C) When a mixture of proteins is separated by gel filtration, the smallest molecular weight protein is eluted last.
- D) When a mixture of proteins is separated by gel filtration, the smallest molecular weight proteins flow around the beads.

16. Enzymes, antibodies and hormones are basic needs for

- A. Proteins
- B. Calcium
- C. vitamin
- D. salts

17. A link between amino acid molecules in a poly peptide chain by condensation reaction is called

- A. peptide bond
- B. poly peptide linkage
- C. diol linkage
- D. amine linkage

18. Fermenters are designed for

- A. aerobic processes
- B. anaerobic processes
- C. both aerobic and anaerobic respiration
- D. antirobic processes

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19. What properties of a protein does hydrophobic interaction chromatography exploit for purification?

- a) Charged amino acids
- b) Hydrophobic amino acids on the protein surface
- c) Molecular weight
- d) Enzyme activity

20. Primary steps in protein purification includes

- a) Homogenization
- b) Differential centrifugation
- c) Solubilisation
- d) all of the above
- e) none of the above

Q2: answer the following answer

A. Name four types of different bioreactors?

B. Name at least five different chromatographic purification methods.

C. What are the major safety concerns in the purification of cell-expressed proteins?

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D. True or False: Glycosylation is an important post-translational change of pharmaceutical proteins.

Glycosylation is only possible in mammalian cells. Explain your Answer?

E. What are the advantages and disadvantages of using E. coli as host for production of recombinant proteins?

End of Questions
Good Luck