



Name:

Computer Number:

First question

Please read the following carefully and mark it with True or False and correct the False: (/ 1 Mark)

1. The cationic form is green or red with absorbance at 470 nm. (...**T**...)

Correction:

2. Phosphoric acid is one of the Bradford reagents. (...**T**...)

Correction:

Second question

Choose only one correct answer on the following questions: (/ 5 Marks)

- 1) In SDS-PAGE experiment, before loading the samples into the gel.....
Is added to the samples in eppendorf tube.
- A. TEMED
 - B. Isopropanol
 - C. **Laemmli buffer.**
 - D. B-mercaptoethanol.
- 2) In order to visualize the separated proteins on SDS-PAGE, proteins must be
- A. **Stained with coomassie brilliant blue R.**
 - B. Stained with bromophenol blue.
 - C. Heated for 5 minutes at 100°C.
 - D. Placed in the destaining solution for 1-2 hours, and then placed in the coomassie staining solution for 30 minutes to 2 hours.

- 3) SDS-Page is used in the molecular biology for
- A. Extracting protein.
 - B. Lysing cells and extracting the total proteins.
 - C. Measuring protein concentration
 - D. Analyzing protein concentration.
- 4) Bradford assay :
- A. Depends on the sodium dodecyl sulfate that is present in the reagents.
 - B. Is a spectroscopic analytical procedure used to measure the concentration of protein in a solution.
 - C. Depends on bovine serum albumin protein in the solution.
 - D. Is a colorimetric protein assay that can analyze the number and the size of polypeptide subunits.
- 5) One of the following is **not** one of the protein quantification methods:
- A. Bicinchoninic acid.
 - B. Near UV absorbance.
 - C. Sonication.
 - D. 2-D Quant kit.
- 6) Detergent which is used with protein to be separated:
- A. Nonidet P-40.
 - B. Triton x-100.
 - C. Sarkosyl.
 - D. All of the above.
- 7)induce the formation of large pore gels.
- A. Polymers such as polyethylene glycol.
 - B. Tris.
 - C. Glycine.
 - D. Glycerol.
- 8)begins to breakdown almost immediately when dissolved in water, therefore, the accumulation of water in results in a rapid loss of reactivity. This is why solutions should be prepared fresh daily.
- A. Acrylamide.
 - B. Ammonium persulfate.
 - C. Urea.
 - D. Bis acrylamide.

- 9)factor that can affect the homogeneity of polyacrylamide gels.
- Protein size.
 - Isoelectric point of polypeptides.
 - Gel thickness.**
 - None of the above.
- 10) The BSA standard curve is called:
- Bovine spectrophotometer analytical curve.
 - Protein purity curve.
 - Calibration curve Bradford macro assay.**
 - Melting curve assays.

Third question

Fill in the blanks with the correct words: (/ 5 Marks)

-**low**..... acrylamide concentrations are to separate**high**.... molecular weight proteins, while**high**..... acrylamide concentrations are used to separate proteins of**low**..... molecular weight.
- In SDS-PAGE , the polymerization is initiated by**TEMED**.... and**APS**.....
- Gels less than**3%**..... acrylamide are almost fluid . So, the effective range of a polyacrylamide gel is between.....**5-20%**..... for a uniform gel concentration.
-**large**..... polypeptides bind more SDS than**small**..... polypeptides, thus migrate as a**negatively charged**..... SDS- protein complex through a porous gel of polyacrylamide in relation to their size. Since SDS-PAGE separates proteins by their size , it is less effective at**resolving proteins with similar molecular weight**.....
- The effective resolving range of polyacrylamide gel is determined by**gel pore size**...,**buffers**...,**pH**.....,**glycerol**.....

6. Polymerization that is too fast ...< 10 minutes.... Or too slow> 60 minutes.... Leads to non uniform polymerization.
7.estimation of protein size.... and..... estimation of protein purity.... are two of the reasons of SDS-PAGE usages.

مع تمنياتي لكن بالتوفيق والنجاح
استاذة ريم الشريف