



**I- First question (9 marks)**

**A)- Please answer the following:-**

**(4 marks/2 each)**

- 1-Mention the impacts of antimicrobials in milk?
- 4-Enumerate the undesirable fermentations that may occur in milk and how to differentiate between sweet curdling and acid curdling of milk?

**B)-Mark (✓) for true and (X) for wrong, then correct the wrong statement**

**(5 marks/one each)**

- 1- Direct microscopic method is used for counting bacteria in milk products.
- 2-Stormy fermentation test is used for detection of aerobic spore former in milk.
- 3-Clot on boiling test gives positive results at acidity% 0.21%.
- 4-Resazurin reduction test depend on time of reduction.
- 5- Brownish or greenish sediment of milk indicate fecal pollution, while yellowish and mucoid sediment indicate acute mastitis.

**II- Second question (5 marks)**

**Discuss in details the following:-**

- 1- The effect of temperature on the growth of psychrotrophes in food. **(1 marks)**
- 2- ABR test **(2 marks)**
- 3- Nisin as an antimicrobial in dairy industry **(2 marks)**

**III- Third question (6 marks)**

**A)-Complete the following sentences:-**

**(3 marks/ 1.5 each)**

1. Indicator organisms are defined as ..... and their presence indicates,.....<sup>(1)</sup>.....<sup>(2)</sup>.....<sup>(3)</sup>..... and .....<sup>(4)</sup>.....
2. Milk enzymes are classified into.....<sup>(1)</sup>....., .....<sup>(2)</sup>....., .....<sup>(3)</sup>..... and .....<sup>(4)</sup>.....

**B)- Write about :-**

**(3 marks/ 1.5 each)**

- 1- Whey protein.
- 2- Swab contact method used for detection of efficiently sterilized milk utensils and equipments.

**IV- Fourth question (5 marks/one each)**

**Give reason(s) of the following:-**

- a- Mechanical agitation of whole milk lowers its viscosity.
- b- Skim milk has bluish tinge.
- c- Determination of freezing point of milk useful for detection of adulteration.
- d- Dairy men should be healthy and clean.
- e- Kjeldahl method determines milk proteins indirectly.

**With best wishes**

**Head of food control department**

**Prof. Dr. Azza M.M. Deeb**