

02. Name the four nutritional categories of microorganisms based on their source of carbon and energy.

Nutritional category	Carbon source	Energy source
Photoautotroph		
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Chemoautotroph		
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(2 x 10 marks)

03. Briefly explain the purpose and principle of the following.

Gas pack anaerobic jar

Use.....

Principle.....

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Freeze drying

Use.....

Principle.....

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Autoclave

Use.....

Principle.....

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(4 x 3 marks)

04. Differentiate between the following (give two factors each).

a) Virulent phage and temperate phage

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b) Bacterial colonies and plaques

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a) Complex medium and a defined medium

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(8 x 3 marks)

05. Fill in the blanks using suitable names/words/phrases.

- a) The smaller an organism, is the ratio of surface area to volume.
- b) The five kingdom classification was proposed by
- c) The classification proposed by Carl Woese placed all life forms into three domain based on
- d) The bacterium is used as a biological insecticide for the control of lepidopteron larvae.
- e) The use of solid media for culturing microorganisms was introduced by the scientist
- f) During the golden age of microbiology, the causal agents of many diseases were discovered. Kitasato discovered the causal agent of

- g) The use of virulence reduced strains (attenuated) in vaccination was discovered by the scientist
- h) Different strains of bacteria can be identified based on their sensitivity to susceptible phages. This technique is known as
- i) There are two distinct types of prokaryotes, Eubacteria, and
- j) Amoebic dysentery is caused by
- k) Protozoa that move by amoeboid motion are called
- l) The scientist provided evidence for the existence of exceptionally heat resistant forms of bacteria.

(2 x 12 marks)

06. Briefly explain the following statements.

1. 'Phototrophic bacteria do not evolve oxygen during photosynthesis'.

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2. 'A bacterial culture may have an exceptionally long lag phase or may by pass the lag phase completely'.

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(4 x 2 marks)

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