

THE OPEN UNIVERSITY OF SRI LANKA
 B.Sc. / B.Ed. DEGREE PROGRAMME - LEVEL 04
 BTU 2104 / BTE 4104 / BTI 4104 – PRINCIPLES OF MICROBIOLOGY
 ASSESSMENT TEST (NO BOOK TEST) - 2008/2009



DURATION – ONE (01) HOUR

Date: 18.10.2008

Reg. No.

Time: 11.00 am – 12.00 noon.

Answer All Questions.

Answers should be indicated in the space provided.

01. Figure 1 represents a typical growth curve of *Escherichia coli*.

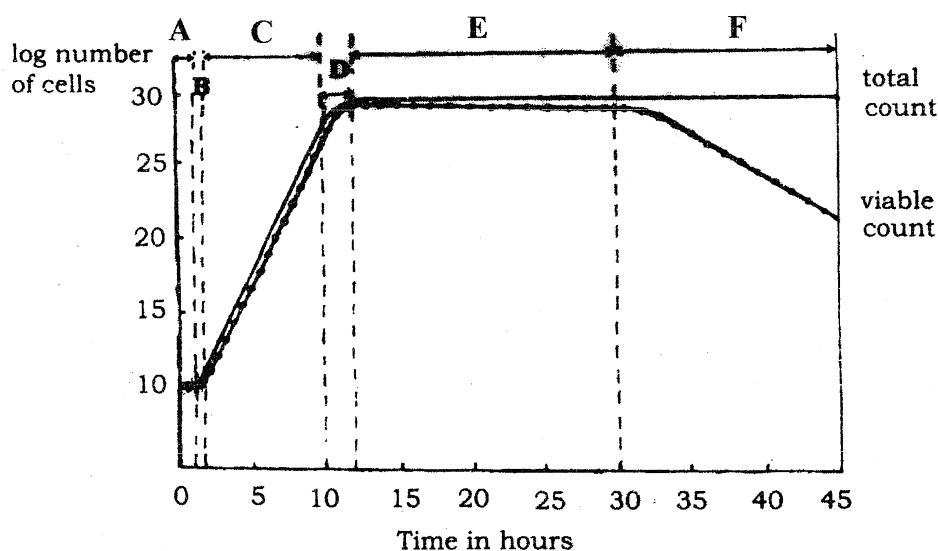


Figure 1

a. Name the different phases labeled A to F.

- A.
- B.
- C.
- D.
- E.
- F.

b. Give **two (02)** factors that determine the duration of the phase **A**.

i.

ii.

c. Explain the reasons for the shape of the phases **C** and **E**.

C.....

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.....

.....

E.....

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.....

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d. Why does the viable count decrease at phase **F**?

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e. What is meant by 'generation time' of a bacterial population?

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f. In which phase of the above curve you can calculate the generation time of *E. coli*?

.....

g. Using **Figure I**, calculate the generation time of *E. coli*.

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02. a. What is genetic engineering?

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b. List the basic steps in producing a genetically engineered bacterium.

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03. a. What are the **three (03)** main growth factors required by microorganisms?

i.....
ii.....
iii.....

b. Name the **four (04)** nutritional categories of microorganisms giving **two (02)** examples for each category.

Category	Examples
i.....	
ii.....	
iii.....	
iv.....	

- c. **Graphically** represent the effect of temperature on microbial growth rate.

04. a. Give **three (03)** essential features of an ideal antimicrobial chemical agent.

i.....

ii.....

iii.....

- b. Name **three (03)** fungal genera which produce antibiotics.

i.....

ii.....

iii.....

- c. Indicate **three (03)** side effects of antibiotics on the host.

i.....

ii.....

iii.....

- d. Chemotherapy of viral infections is difficult. Why?

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.....

- e. Name **three (03)** techniques of evaluating the effectiveness of antimicrobial chemical agents.

i.....
ii.....
iii.....

05. Differentiate between the following.

- a. Facultative aerobes and facultative anaerobes

Facultative aerobes

Facultative anaerobes

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- b. Conjugation and transduction in bacteria

Conjugation

Transduction

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.....
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- c. Fungistatic and fungicidal treatments

Fungistatic treatment

Fungicidal treatment

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