

**THE OPEN UNIVERSITY OF SRI LANKA**  
**B.Sc. / B.Ed. DEGREE PROGRAMME – LEVEL 04**  
**BYU4303/BYE4303/BOU2103- PRINCIPLES OF MICROBIOLOGY**  
**FINAL EXAMINATION – 2017/2018**  
**DURATION: TWO (02) HOURS.**



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**DATE : 02<sup>nd</sup> October 2018**

**TIME : 9.30 a.m. – 11.30 a.m.**

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**ANSWER ANY FOUR QUESTIONS. USE FULLY LABELLED DIAGRAMS WHERE NECESSARY.**

1. a) Give a brief account of the different types of dyes used in staining of bacteria  
b) How would you differentiate simple staining from differential staining?  
c) Describe the Gram's stain and the spore stain methods as examples of differential stains, considering smear preparation, reagents used, purpose of each reagent, critical steps and expected result.
  
2. a) Write an account on the different types of media used for cultivation of microorganisms  
b) Discuss the methods used for long term storage and maintenance of pure cultures.
  
3. Write short notes on the following
  - a) Generalized transduction
  - b) Agar as a solidifying agent in microbiological media
  - c) Contribution of Robert Koch to the field of microbiology
  
4. a) Glycolysis is the first step in energy generation of organotrophic bacteria. What are the key events that take place during glycolysis?  
b) 'Energy generation processes of bacteria play an important role in the environment'. Comment.

5. a) Differentiate between an antiseptic and a disinfectant.
- b) Write a concise account on specific groups of antimicrobial chemical agents taking into consideration their mode of action and practical applications.
- c) List the factors that affect the potency of antimicrobial chemical agents.
6. a) Giving examples, write an account on the different modes of action of antibiotics.
- b) Why are antibiotics not effective against viruses?.
- c) What are the non-medical uses of antibiotics, and what are the possible disadvantages of such use.

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