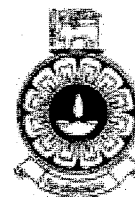


**THE OPEN UNIVERSITY OF SRI LANKA**  
**B.Sc. / B.Ed. DEGREE PROGRAMME – LEVEL 04**  
**BOU2103/BOE4103- PRINCIPLES OF MICROBIOLOGY**  
**FINAL EXAMINATION – 2015/2016**  
**DURATION: TWO (02) HOURS.**



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**DATE : 18<sup>th</sup> July 2016**

**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) 'Although viruses are considered as microorganisms, they are not included in any classification' briefly comment. .
  - b) Discuss the different methods which can be used to isolate and propagate plant viruses.
2.
  - a) What is meant by the term 'Aseptic techniques'?
  - b) Discuss the different methods used in the laboratory to isolate and purify bacteria.
  - c) List the specific aseptic techniques you would follow when carrying out the procedures you described in 'b'.
3. Write short notes on the following.
  - a) Gram's stain
  - b) Robert Koch's contribution to microbiology
  - c) Typical growth curve of a bacterium in a batch culture
4.
  - a) What do you understand by the term 'metabolism'?
  - b) Compare and contrast between Respiration and Fermentation as energy generation processes of bacteria.
  - c) Briefly state how ATP is generated during the above two processes.
5.
  - a) Compare and contrast transduction and conjugation as methods of gene transfer in bacteria.
  - b) With the help of suitable diagrams, briefly describe the steps involved in altering the genome of a bacterium using genetic engineering.