

BITS, Pilani, Dubai Campus

Comprehensive exam

1st Semester 2012-13

Course No: BIOT F212 / Course Title: Microbiology

Weight-age: 30 %

Total 60 marks

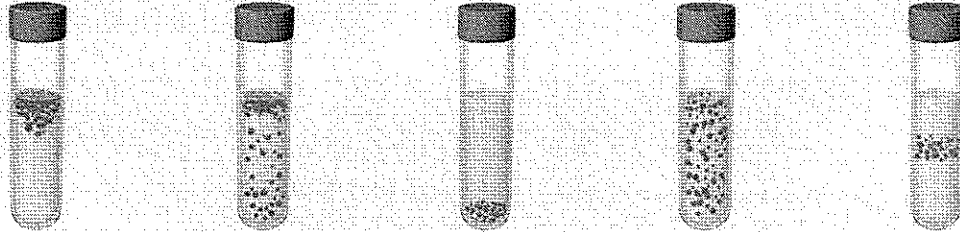
Date: 06.01.2013

1. a. Write the Importance of high pressure food preservation 2X5=10 marks
 - b. How is pest control can be done in environmental friendly way? Explain.
 - c. Infections may be acquired as a result of a hospital stay. Justify
 - d. List out any 6 Industrial products obtained from microbes?
 - e. How is Negative staining performed? Explain how it is beneficial?
2. a. What are the basic requirements for the growth of microbes?(list out) 2X5=10 marks
 - b. What are Capnophiles? Mention 3 ways by which we can grow them in the lab?
 - c. Explain NAG and NAM
 - d. How are inclusion bodies essential for bacteria? Explain with 2 examples
 - e. Fungi are considered Dimorphic. Justify with 2 examples.
3. a. Protozoa is a medically important phylum. Justify 2X5=10 marks
 - b. What are the various actions of antimicrobial agents on the growth of microbes?
 - c. Explain with a neat diagram the types and stages of viral multiplication
 - d. How is RNAi important in clinical microbiology? Explain
 - e. Which are the principal reservoirs of rabies? How?
4. a. What are the disadvantages of coulter counter? (List out) 2X5=10 marks
 - b. Differentiate between pour plate and spread plate method.
 - c. How is Cobalt-60 important in sterilization?
 - d. How Prokaryotic translation is different from eukaryotic translation?
 - e. What are the various kinds of occurrence of a Disease?
5. Write short notes on the following 4X2=8 marks
 - a. Virusoids
 - b. Confocal microscopy

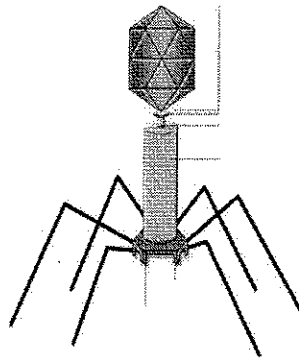
c. Probiotics

d. Bioremediation

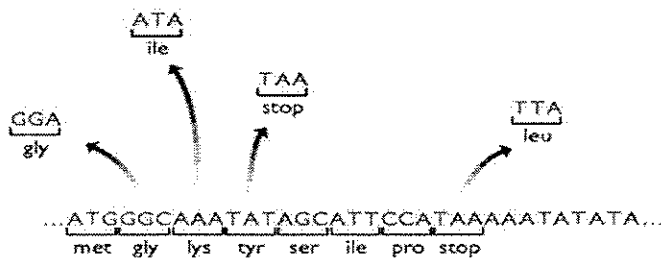
6. a. Mention type of the microbe based on its growth pattern in the diagram given below.
State one example for each type. 3X2= 6 Marks



b. Identify and label the parts



c. Mention various kinds of Mutations from the diagram given below



7. Schematically explain Pentose phosphate pathway

5 Marks

8. Mention whether *Treponema pallidum* is an exception or inclusion to Koch's Postulates

1 Mark

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Test 2 (open book)

Course No: BIOT F212

Course Title: Microbiology

Total 20 marks

Date: 09.12.2012

Duration : 50 mins.

1. A person with burn is known as compromised host why?
2. In secondary infection penicillin =G may not be very effective. justify the statement
3. How will you sterilize enzymes before use? Explain
4. To clear bacterial infection, which drug is preferred? Is it 2 -aminopurine or ciproflaxin and why? Explain
5. Is quats a surfactant? Explain how?
6. Diagrammatically explain the mechanism of catabolite control on operon model of gene expression.
7. Explain with one example how tansposons are potentially powerful mediator of evolution?
8. Define reservoir of infection and explain the types.
9. Is the relationship between human and *E.coli* mutualism or parasitism?
10. How sickle cell anemia gene is counterbalanced in malaria prone region? Explain.

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Quiz 2

Name:

ID No:

Course No: BIOT F212

Course Title: Microbiology

Weight-age: 5 %

Total 10 marks (DURATION: 20mts)

Date: 21.11.2012

1. Describe substrate level phosphorylation?
2. *Rhodospirillum rubrum* is an example for _____ and _____ is an example of chemoautotrophs on the basis of nutritional classification.
3. Elucidate the importance of pH indicator in the identification of micro organism by biochemical testing.
4. Differentiate alcoholic fermentation from lactic acid fermentation.
5. Mention any 4 cofactors in an enzymatic reaction.
6. Write about the MPN dilution series.
7. What is the major disadvantage of turbidity estimation method for viable bacterial cell number?
8. What are inhibitors? How it affects the enzyme activity? Explain with an example.
9. In which way Rhizobia produces energy from glucose?
10. Why there is an energy yield difference between NADPH and FADH₂ in electron transport chain? Explain

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Quiz 1

Course No: BIOT F212 / Course Title: Microbiology

Weight-age: 5 %

Total 10 marks (DURATION: 20 mts)

Date: 30.10.2012

1. Differentiate between southern and northern blotting.
2. What are the three different shapes of the bacteria? Give one example for each of these.
3. Expand the following abbreviations : ELISA, FAME, FISH, PFU
4. Compare and contrast prions & viroids
5. On which basis bacteria is classified in Bergey's manual?
6. Write the basic rules of binomial nomenclature.
7. In Which way G: C content is beneficial to a taxonomist?
8. Write a brief note on the following.
 - a. Thermotoga
 - b. Capsomeres
9. Define the following
 - a. slide agglutination test
 - b. Phage typing
 - c. Cytopathic effect
 - d. Proto-oncogene

(1x8)

(2)