Assignment 7

The due date for submitting this assignment has passed. As per our records you have not submitted this assignment. Due on 2019-03-20, 23:59 IST.

1) Which of these statements are correctly describing a Winogradsky Column:

- It is an artificial microbial ecosystem and a long term source of bacteria for enrichment cultures. 
- This column leads to the development of a diverse community of bacteria including sulphate reducers at the top and cyanobacteria in the bottom.
- There is a tightly packed mud in the bottom of the column containing small amount of CaCO3 (as a buffer) and gypsum (source of sulfate) to avoid trapping of air and the top is made open to allow access of air and sunlight.
- It is used to isolate phototrophic purple and green bacteria, sulfate reducing bacteria and many other anaerobes.

No, the answer is incorrect.
Score: 0

Accepted Answers:
- It is an artificial microbial ecosystem and a long term source of bacteria for enrichment cultures.
- It is used to isolate phototrophic purple and green bacteria, sulfate reducing bacteria and many other anaerobes.

2) The typical steps for fingerprinting of microbial community include:

- Extraction of DNA or RNA
- Cloning of the genes
- Doing PCR of gene of interest and separation of its products
- DNA Sequence analysis

No, the answer is incorrect.
Score: 0

Accepted Answers:
- Extraction of DNA or RNA
- Doing PCR of gene of interest and separation of its products
4) Which of the statements is correct?
- Sequence analysis is required for identification of bacterial community and inferring phylogenetic relationships.
- Primer dimer are seen in gel bands when generally lower concentration of target DNA are taken than the primers.
- Qiime is a software that performs microbial community analysis and used to analyze and sequence nucleic acid sequence data of microbes.
- All are correct statements.

No, the answer is incorrect.
Score: 0
Accepted Answers: All are correct statements.

5) Which of these statements are correct:
- Bioremediation is defined as a microbial cleanup of contaminants like oil, toxic chemicals etc. by stimulating the activities of indigenous microbes in some way.
- Converting the soluble and mobile uranium (iv) to insoluble and immobile uranium (vi) by releasing some energy is known as Uranium Sequestration.
- According to the research of Amy Pruden, permeable reactive barriers helped in reduction of sulfate by governing the microbes and simultaneously in precipitation of metals by increasing the pH.
- Geobacter is the bacteria which help in reduction of uranium by oxidizing acetate.

No, the answer is incorrect.
Score: 0
Accepted Answers:
Bioremediation is defined as a microbial cleanup of contaminants like oil, toxic chemicals etc. by stimulating the activities of indigenous microbes in some way.
According to the research of Amy Pruden, permeable reactive barriers helped in reduction of sulfate by governing the microbes and simultaneously in precipitation of metals by increasing the pH.
Geobacter is the bacteria which help in reduction of uranium by oxidizing acetate.

6) Say true or false:
Xenobiotics are the emerging biological compounds which cannot be degraded by microorganisms.
- True
- False

No, the answer is incorrect.
Score: 0
Accepted Answers: False

7) Which statements are correct for aerobic degradation of aromatic hydrocarbons:
- The three pathways of ring cleavage of aromatic hydrocarbons are formation of catechol, protocatechuate pathway and gentisate pathway.
During protocatechuate pathway the ring fission reaction occurs and the intermediates are formed in the degradation of acid.

Catechol funnel shows how various aromatic ring compounds can at last be converted to catechol and therefore can be made vulnerable to degradation.

All are correct.

No, the answer is incorrect.

Score: 0

Accepted Answers:
The three pathways of ring cleavage of aromatic hydrocarbons are formation of catechol, protocatechuate pathway and gentisate pathway.

Catechol funnel shows how various aromatic ring compounds can at last be converted to catechol and therefore can be made vulnerable to degradation.

8) Say true or false:

During progress of any reaction activation energy needed without enzymes is always lesser than the activation energy needed with enzymes.

True

False

No, the answer is incorrect.

Score: 0

Accepted Answers:
False

9) A catabolic process in citric acid cycle in which generation of acetyl-CoA occurs by breaking down fatty acids.

Deoxygenation

Glycolysis

Beta oxidation

Acetogenesis

No, the answer is incorrect.

Score: 0

Accepted Answers:
Beta oxidation

10) Which statements are correct:

(a). In Co-metabolism, cells grow on only one substrate but if transformation of other substrate is also necessary it requires energy.

(b). Poly-beta-hydroxybutyrate is the plastic which can be biosynthesized.

Both (a) and (b)

Only (a)

Only (b)

Both are incorrect.

No, the answer is incorrect.

Score: 0

Accepted Answers:
Both (a) and (b)