VCD-131012. F.Y.B.Sc. SEM.-I BIOTECH-II 60 MARKS 2 HOURS 2- 120

NOTE: 1. All questions are compulsory.
2. Draw diagrams wherever necessary.

Q.1. Do as directed. (3)

(A) I. Define ANY THREE of the following :

i. Hydrophobic ends.
ii. Glycogen.
iii. Plasmids.
iv. Capsule.
v. Slime layer.
vi. Endospore. (2)

II. Fill in the blanks (ANY TWO)

i. Actinomycetes characteristically form long multinucleate filaments or hyphae that may branch to produce a network called as ----------.

ii. A ---------- is a portion of bacterial cell consisting of cytoplasmic membrane and cell material is bound to it.

iii. Storage product in Fungal Cell is ----------.

iv. Certain species of bacteria produce spores either within the cell known as ---------- (10)

(B) Answer ANY TWO of the following :

i. Write a brief account on Flagella and motility .
ii. Diagrammatically explain the morphology of Gram positive bacterium.
iii. Discuss the structure of Fungal cell with the help of labelled diagram.
iv. "Mesosomes are invaginations of plasma membrane in the shape of a tubule ". Justify. (2)

Q.2. Do as directed :

(A) I. State whether true or false (ANY TWO):

i. Water has highest dielectric constant.
ii. Glycogen is a stored food in plants.
iii. In RNA, instead of guanine, uracil is present.
iv. Water only serves as a hydrogen donor and not as a hydrogen acceptor.

II. Fill in the blanks (ANY TWO) (2)

i. Water forms a ----------surrounding solute particles while dissolving it.

ii. The isomers formed due to interchange of - OH and - H on carbon atoms are known as ----------.

iii. Lactose is made up of ---------- and ---------- monosaccharides.

iv. The pyrimidines present in DNA are ---------- and ----------

III. Define ANY ONE of the following : (1)

i. Dielectric constant.
ii. Nucleic acid.

(B) Answer ANY TWO of the following : (10)

i. Describe the properties of water.
ii. What are disaccharides ? Explain formation of disaccharide with an example.

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Q.2. (B) iii. Diagrammatically explain the structure of t-RNA and give its functions.

iv. Explain the various types of isomers in monosaccharides.

Q.3. (A) Do as directed :

I. Explain ANY TWO of the following terms:

i. LD_{50}
ii. Biotechnology.
iii. Generalized inFection.
iv. Minimal lethal dose.

II. Name ANY ONE of the following :

i. Any one Genetically modified plants.
ii. Any one microbial virulence Factors.

(B) Answer ANY TWO of the following :

i. How people have perceived biotechnology from past to its present ?
ii. Explain the sources of inFection.
iii. Write characteristic Features of Endotoxins.
iv. Write a note on Virulence Factors.

Q.4. Write a short note on ANY THREE of the following :

i. Gram positive cell wall.
ii. pH and pH meter.
iii. Pathogenicity.
iv. Life cycle of Bacillus megaterium and endospore Formation.
v. Physical properties of carbohydrates.
vi. Toxins.

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