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SARDAR PATEL UNIVERSITY
S. Y. B.Sc. (III SEMESTER) EXAMINATION

2021

Saturday, 2nd January

02.00 p.m. to 04.00 p.m.

USO3CBIO21 CONCEPT OF BIOLOGY

Total Marks: 70

Q.1. Select the correct answer and write it in the answer sheet (10)

1. The first life on earth emerged _____ years ago.
(a) 4 billion (b) 2 billion (c) 1 billion (d) 1 million
2. Protein synthesis is carried out by _____ in eukaryotic cell
(a) Smooth E R (b) Rough E R (c) Golgi Complex (d) Lysosome
3. _____ is movement of molecules through semi permeable membrane according to concentration gradient of water across the membrane
(a) Diffusion (b) Osmosis (c) Plasmolysis (d) Imbibition
4. Minute openings in the bark of branches and twigs are called _____
(a) Lenticels (b) Stomata (c) Cuticle (d) Trichome
5. The first product of Calvin cycle is _____
(a) OAA (b) PGA (c) PGAL (d) Citric acid
6. Metacentric chromosome has _____ arms.
(a) Equal (b) Unequal (c) Negligible (d) None of these
7. The clover leaf model is found in _____.
(a) z DNA (b) t RNA (c) mRNA (d) r RNA
8. Adenine pairs with _____ in a DNA molecule.
(a) Guanine (b) Thymine (c) Cytosine (d) Uracil
9. _____ RNA copies the message from DNA in transcription.
(a) r RNA (b) m RNA (c) t RNA (d) none of these
10. Translation occurs in _____ part of the cell.
(a) Cytoplasm (b) Nucleus (c) Chloroplast (d) Golgi body

Q.2. Write true or false for following (08)

1. The Oparin-Haldane hypothesis suggests that life arose gradually from inorganic molecules, with "building blocks" like amino acids
2. Plasma membrane is made up of double layer of phospholipids
3. Plasmolysis is the process of breakdown of cytoplasm
4. Imbibition facilitates water absorption
5. Telocentric chromosome has arms on both sides of centromere.
6. Cytosine pairs with Guanine in a DNA molecule.
7. In protein synthesis, t RNA functions in the cytoplasm.
8. Translation is copying of message from DNA molecule.

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[P.T.O.]

Q.3. Answer the following in brief (Any 10)

(20)

1. Explain Miller's experiment for evolution of life
2. Sketch and label the eukaryotic cell
3. Discuss the difference between plant cell and animal cell
4. Explain the process of diffusion in plant
5. What is Osmosis ?
6. Write in brief on Transpiration and its types
7. Write all about a sub metacentric and acrocentric chromosome.
8. Explain the chromosome position during metaphase of mitosis.
9. Write about nucleoside and nucleotide.
10. Explain the role of m RNA in protein synthesis.
11. What is role of t RNA in protein synthesis?
12. How do the Ribosomes work in protein synthesis?

Q.4. Write a detailed answer on following (Any four)

(32)

1. Discuss the theory of evolution given by Charles Darwin
2. Describe in detail the stages of cell division Mitosis. Write its significance
3. Describe the structure of stomata, Pigment systems and add note on cyclic phosphorylation
4. Give an illustrative account of Calvin cycle
5. Write about the structure and function of a chromosome.
6. Explain Watson & Crick model of DNA.
7. Write all about Transcription of Protein synthesis.
8. Explain in detail the Translation in Protein synthesis.

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