BIOLOGY

BOOKS - VGS PUBLICATION-BRILLIANT

MODEL PAPER 4

Section A

1. What are porins? What role do they play in diffusion?

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2. What is the primary acceptor of CO_2 in C_4 plants. What is the first compound formed as a result of primary carboxylation in the C_4 pathway ?

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3. What is transduction ? Who discovered it and in which organism ?

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4. What is point mutation? Give one example.

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5. What are the components of a nucleotide ?

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6. The proportion of nucleotides in a given nucleic acid are Adenine 18%, Guanine 30%,

Cytosine 42% and uracil 10%. Name the nucleic acid and mention the number of strands in it.

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7. What is the full form of PCR ? How is it useful in Biotechnology?

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8. What is GEAC and what are its objectives ?

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9. Give two examples of wheat varieties introduced in India, which are high yielding and disease resistant.

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10. Why does 'Swiss-Cheese' have big holes ? Name the bacteria responsble for it.

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Section B

1. Define and explain water potential.

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2. What are the steps involved in formation of a root nodule?

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3. Write briefly about enzyme inhibitors.

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4. Write any four physiological effects of cytokinins in plants.

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5. Explain the structure of TMV.

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6. Mention the advantages of selecting pea plant for experiment by Mendel.

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7. What are the important features of Genetic code ?

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8. List out the beneficial aspects of transgenic plants.

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Section C

1. Give an account of glycolysis, Where does it occur ? What are the end products? Trace the fate of these products in both aerobic, and anaerobic respiration.

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2. Explain briefly the various processes of recombinant DNA technology.

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3. You are a Botanist working in the area of plant breeding. Describe the various steps that you will undertake to release a new variety.

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Section A

1. Mention any two occupational respiratory disorders and their causes in human beings?

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2. What is juxtaglomerular apparatus ?

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3. Distinguish between red muscle fibers and white muscle fibers.

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4. Name two cranial sutures and their locations.

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5. What is 'insulin shock'?

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6. Distinguish between diabetes insipidus and diabetes mellitus.

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7. What are the measures one has to take to prevent from contracting STDs?

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8. What is 'amniocentesis' ? Name any two disorders that can be detected by amniocentesis.

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9. List out any two Indian carps and two exotic carps

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10. MRI scan in harmless-justify.

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Section B

1. Draw a neat labelled diagram of LS of tooth.

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2. How is respiratory movements regulated in Man?

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3. Give an account of Synaptic transmission.

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4. Explain the mechanism by which HIV multiplies and leads to AIDS.

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5. How is sex determined in human beings ?

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6. Explain Darwin's theory of Natural Selection with industrial melanism as an experimental proof.

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7. Distinguish between homologous and analogous organs.

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8. Explain the different types of cancers.

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Section C

1. Describe the structure of the heart of man with the help of neat labelled diagram.

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2. What are multiple alleles Describe multiple alleles with the help of ABO blood groups in man.

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