BIOLOGY

BOOKS - VGS PUBLICATION-BRILLIANT

MODEL PAPER 1

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_3 plants ? What is the first stable compound formed Calvin cycle ?

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

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4. Define and terms phenotype and genotype.

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5. What are the components of a nucleotide ?

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6. Write any two chemical differences between DNA and RNA.

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7. What is down-stream processing ?

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8. Name the nematode that infects the roots of tobacco plants. Name the strategy adopted to prevent this infestation.

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9. What is meant by "hidden hunger"?

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10. What is Nucleopolyhedrovirus is being used for nowadays?

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11. Explain the role of the pink colour pigment in the root nodule of legume plants. What is it

called ?

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12. Define the terms quiescence and dormancy.

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13. Mention the difference between virulent phages and temperate phages.

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14. What is genotype of wrinkled phenotype of Pea seeds ?

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15. In a typical DNA molecule, the proportion of thymine is 20% of the N bases. Find out the percentages of other N bases.

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16. Define stop codon. Write the codons.

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17. How does one visualize DNA on an agar - gel ?

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18. What is GEAC and what are its objectives ?

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19. Give two examples of fungi used in SCP production.

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20. Name a microbe used for statin production. How do statins lower blood cholesterol level?

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21. What are the competitive enzyme inhibitors ? Mention one example.

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22. Where does the photolysis of H_2O occur ? What is its significance ?

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23. Name the Bacteria which is a common inhabitant of human intestine . How is it used in biotechnology ?

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24. What is point mutation? Give one example.

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25. What are the components of a nucleotide ?

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26. What is the difference between the template strand and a coding strand in a DNA molecule ?

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27. Name any two artificially restructured plasmids.

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28. Give any two reasons why the patent on Basmati should not have gone to an American company.

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29. A person who is allergic to pulses was advised to take a capsule of Spirulina daily. Give reasons for the advice.

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

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Section B

1. How does ascent of sap occur in tall trees ?

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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 a note on agricultural / horticultural applications of auxins.

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5. Explain the structure of T -even Bacteriophages .

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6. Explain the Law of Dominance using a monohybrid cross.

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7. Draw the schematic/diagrammatic presentation of the lac operon.

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8. What are some bio-safety issues concerned with genetically modified crops ?

Watch Video Solution

9. How does ascent of sap occur in tall trees ?

Watch Video Solution

10. Write briefly about enzyme inhibitors.

Watch Video Solution

11. Tabulate any eight differences between C_3 and C_4 plants/cycles.

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12. What are the physiological processes that are regulated by Ethylene in plants ?

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13. What are the nutritional groups of bacteria based on their source of energy and carbon ?

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14. Explain the Law of Dominance using a monohybrid cross.

Watch Video Solution

15. Draw the schematic/diagrammatic presentation of the lac operon.

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16. Give a brief account of Bt cotton.

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17. How does most of the water move within a healthy plant body and by which path ?

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18. Nitrogen is fixed into the soil not only by biological processes. Elaborate.

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19. With the help of a diagram, explain briefly the process of cyclic photophosphorylation.

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20. Write a note on agricultural / horticultural applications of auxins.

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21. Draw a neat labelled diagram of Euglena:

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22. Explain the Incomplete Dominance with example.

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23. Define a cistron. Differentiate between monocistronic and polycistronic transcription units with suitable examples.

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24. List out the beneficial aspects of transgenic plants.

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Section C

1. Explain the reactions of Kreb's cycle.

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

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3. Describe the tissue culture. technique and, what are the advantages of tissue culture over conventional method of plant breeding in crop improvement programmes ?

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4. 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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5. Give a brief account of the tools of recombinant DNA technology.

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6. Describe the tissue culture. technique and, what are the advantages of tissue culture over conventional method of plant breeding in crop improvement programmes ?

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7. Explain the reactions of Kreb's cycle.

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

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9. 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. What is chyme ?

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2. What are the columns of Bertin ?

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3. Write the difference between actin and myosin.

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4. What is 'insulin shock'?

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5. What is acromegaly.? Name the hormone responsible for this disorder.

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6. What is organ of Corti?

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7. What are the functions of Sertoli cells of the seminiferous tubules and the Leydig cells in man?

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8. What is compaction in human development ?

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9. What is electrocardiography and what are the normal components of ECG?

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10. Define the terms layer and broiler.

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11. What is meant by chloride shift?

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12. Define glomerular filtration.

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13. What is triad system?

Watch Video Solution

14. Name the keystone bone of the cranium. Where is it located ?

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15. Distinguish between diabetes insipidus and diabetes mellitus.

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16. What is erythropoietin? What is its function ?

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17. What in your view are the reasons for population explosion, especially in India ?

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

amniocentesis.

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19. What is apiculture ?

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20. Which substances in a sample are detected by direct and indirect ELISA respectively ?

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Section B

1. Describe the process of digestion of proteins in the stomach.

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2. Describe disorders of respiratory system.

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3. Draw a labelled diagram of the T.S. of the spinal cord of man.

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

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5. Describe the Genic Balance Theory of sex determination.

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6. Write a short note on the theory of mutations.

Watch Video Solution

7. Distinguish between homologous and analogous organs.

Watch Video Solution

8. Explain in brief structure of Insulin.

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9. How is respiratory movements regulated in Man?

Watch Video Solution

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

Watch Video Solution

11. Describe the structure of synovial joint with the help of a neat labelled diagram.

Watch Video Solution

12. Write short notes on B-cells..

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13. What is erythroblastosis foetalis?

Watch Video Solution

14. Distinguish between homologous and analogous organs.

Watch Video Solution

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

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16. Explain the different types of cancers.

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Section C

1. Write notes on the working of the heart of man.

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2. Describe female reproductive system of a woman with the help of a labelled diagram.

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3. What is crisscross inheritance ? Explain the inheritance of one. " sex linked recessive character in human beings.

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

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5. Describe the male reproductive system in Human.

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

Watch Video Solution

7. Describe the structure of the heart of a man.

Draw a neat labelled diagram of it.

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5. Which hormone is called anti-diuretic hormone ? Write the name of the gland that secretes it.

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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

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8. Explain in brief about queen bee.

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