BIOLOGY

BOOKS - SRIJAN BIOLOGY (ENGLISH)

SELF ASSESSMENT PAPER 3

Part I

1. What is genotype?

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2. DNA and RNA contain four bases each. Which of the following bases is not present in RNA ?

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3. What are flocs? Discuss their role in sewage treatment.

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4. What is biological significance of golden rice production?

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5. What is bioprospecting?

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6. Define Mycorrhiza

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7. Name a rod-shaped virus

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8. What is DNA polymorphism?

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9. The hormone that is released form the testes is:

A. Progesterone

B. Semen

C. Testosterone

D. Vasopressin

Answer:

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10. The first genetic material could be

A. Protein

B. Carbohydrates

C. DNA

D. RNA

Answer:

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11. Antivenom against snake poison contains

A. Antigens

B. Antigen-antibody complex

C. Antibodies

D. Enzymes

Answer:

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12. Which of these processes does not give off CO_2 ?

A. Lactate fermentation

B. Aerobic respiration

C. Alcoholic fermentation

D. Photosynthesis

Answer:

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13. Give one significant contribution of each of the following scientists

(i) Gregor Mendel (ii) Hargobind Khurana (iii) Kary mullis (iv) Hrshey & Chase

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14. Define the following terms:

Tubectomy

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15. Give Reasons:

Mother.s first milk is required for immunity

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16. 'Artificial insemination helps overcome several problems of normal mating in cattle". Do you agree ? Support you answer with any three reasons.

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Part Ii Section A

1. What is colostrum? How the milk production is normally regulated

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2. Males in whom testes fail to descend to the scrotum are generally infertile. Why?

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3. With the help of one example, explain the phenomena of-codominance and multiple allelism in human population.

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4. Why do sports persons often fall a victim to cocaine addiction?

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5. How are .sticky ends. formed on a DNA strand? Why are they so called?

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6. Despite having the great biodiversity why Amazon rain forest is under the risk of desertification.

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7. Describe broad-spectrum antibiotic. Give example

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8. Describe sexually transmitting diseases. Name some important STDs

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9. Why is ZIFT a boon to childless couples? Explain

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Part Ii Section B

1. Define an operon, giving an example, explain an inducible operon.

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2. State the function of histones in DNA packaging

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3. What are intra uterine devices?

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4. Explain how the act as contraceptive:

Saheli

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5. Explain the effects of drug addiction on family, society and the addicts.

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6. Draw and explain a logistic curve for a population of density (N) at the (t) whose intrinsic rate of natural increase is (r) and carrying capacity is (K)

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7. Why is there a need to conserve biodiversity? Name and explain any two ways that are responsible for the loss of biodiversity

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8. Define immunity. Describe different ways to develop immunity. Write two differences between active and passive immunity.

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9. Draw a well labeled diagram of a section of a megasporangium of an angiosperm and label funiculus, micropyle, embryo sac and nucellus.

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10. Starting with the zygote, draw the diagrams of the different stages of embryo development in a dicot.

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Part Ii Section C

1. What is a plasmid?

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2. What is meant by ADA deficiency? How is gene therapy a solution to this problem? Why is it not a permanent cure?

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3. Give a brief account of genetic engineering.

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4. How is insertional inactivation of an enzyme used as a selectable marker to differentiate recombinants from non-recombinants?

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5. Describe the double helix model of DNA with well labelled diagram

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6. Briefly describe the technique employed in DNA fingerprinting

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7. A cross between a red flower bearing plant and a white flower bearing plant of Antirrhinum produced all plants having pink flowers. Work out a cross to explain how this is possible.

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8. Give an account of artificial chromosomes in transfer of genetic material.

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