



BIOLOGY

BOOKS - ARIHANT PUBLICATION

SAMPLE PAPER 4

Section A Botany Group I

1. Primary succession on rocks starts with :

A. herbs

B. lichens

C. trees

D. animals

Answer:



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2. Choose the correct answer from the choices given under each bit.

Disease-free plants can be obtained by culturing

A. meristem

B. roots

C. nodes

D. leaves

Answer:



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3. Choose the correct answer from the choices given under each bit.

When corolla have free petals, it is called

A. gamopetalous

B. polygamous

C. polypetalous

D. apocarpous

Answer:



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4. Choose the correct answer from the choices given under each bit.

During replication of DNA, which of the following enzymes unwinds the double helix?

A. DNA gyrase

B. Ligase

C. Primase

D. Helicase

Answer:



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5. Choose the correct answer from the choices given under each bit.

Semidwarf, high yielding variety of wheat is

A. Kalyan Sona

B. Jaya

C. IR-8

D. None of the above

Answer:



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6. Correct the statements of each bit, if necessary, by changing the underlined words only.

A hydrophytic leaf very often has thick cuticle



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7. Correct the statements of each bit, if necessary, by changing the underlined words only.

Rhizobium a free-living bacterium fixes

atmospheric nitrogen by associating with roots of legume plants.



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8. Correct the statements of each bit, if necessary, by changing the underlined words only.

The pyramid of biomass can never be inverted.



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9. ABO blood group is an example of



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10. Correct the statements of each bit, if necessary, by changing the underlined words only.

Montreal protocol in 1997 was signed to reduce the emission of CO_2 , nitrous oxide and methane by 5%.



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Section A Botany Group Ii

1. Write short notes on the following in 2 to 3 sentences.

Pleiotropy



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2. Write short notes on the following in 2 to 3 sentences.

Sporulation and gemmule formation



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3. Write short notes on of the following in 2 to 3 sentences.

Central dogma



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4. Write short notes on any three of the following in 2 to 3 sentences.

Single cell protein



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5. Write short notes on any three of the following in 2 to 3 sentences.

Parasitism



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6. Write short notes on the following in 2 to 3 sentences.

Biosphere reserves



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7. Differentiate between any one pair of the following : with 2 to 3 important points

Transpiration and Guttation



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8. Differentiate between the following : with 2 to 3 important points

Replication and Transcription



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9. Differentiate between the following with 2 to 3 important points : Parthenocarpy and Parthenogenesis



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Section A Botany Group Iii

1. Answer any two questions, each within 200 words.

Give an account of primary air pollutants.



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2. Describe briefly about the process of double fertilization with suitable diagram.



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3. Answer the following within 200 words.

Give an account of laws of inheritance proposed by Mendel.



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4. Give an account of structure of DNA.



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Section B Zoology Group I

1. Choose the correct answer from the choices given under each bit/Give the answer in one word only.

Inhibin that inhibits the secretion of FSH is secreted from

- A. anterior pituitary cells
- B. granulosa cells
- C. Sertoli cells
- D. Both (ii) and (iii)

Answer:



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2. Choose the correct answer from the choices given under each bit/Give the answer in one word only.

The enzyme used to join DNA segments is

A. ligase

B. primase

C. helicase

D. endonuclease

Answer:



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3. Choose the correct answer from the choices given under each bit/Give the answer in one word only.

The connecting link between Annelida and Arthropoda is

A. Euglena

B. Peripatus

C. Echidna

D. Archaeopteryx

Answer:



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4. Choose the correct answer from the choices given under each bit/Give the answer in one word only.

The plant from which cocaine is obtained.



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5. Choose the correct answer from the choices given under each bit/Give the answer in one word only.

The organisation that maintains Red Data Book.



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6. Fill in the blanks with correct answer(s)/
Correct the underlined portion of the sentences.

The process which transforms zygote to morula is called



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7. DNA fragments can be separated and detected using_____.



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8. Fill in the blanks with correct answer(s)/
Correct the underlined portion of the

sentences.

Low sperm count (> 10 Million/mL³ of semen)
is called



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9. Fill in the blanks with correct answer(s)/
Correct the underlined portion of the
sentences.

A complement of $47 + XXY$ will be indicative of
Turner syndrome.



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10. Fill in the blanks with correct answer(s)/

Correct the underlined portion of the sentences.

The process of uptake of plasmid DNA is called bombardment.



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Section B Zoology Group li

1. Answer the following (restrict each answer 2 to 3 important sentences).

What is phagocytosis?



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2. Answer the following (restrict each answer 2 to 3 important sentences).

Mention the objective and applications of Human Genome Project (HGP).



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3. Answer the following (restrict each answer 2 to 3 important sentences).

Comment on lactational amenorrhea.



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4. Answer the following (restrict each answer 2 to 3 important sentences).

What is Mantoux reaction?



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5. Answer any three of the following (restrict each answer 2 to 3 important sentences).

What are the functions of placenta as an endocrine gland?



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6. Answer the following (restrict each answer 2 to 3 important sentences).

Sex-determination in grasshopper and birds.



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7. Differentiate between any one of the following : (restrict the answer 3 to 4 important sentences).

Parasitism and Commensalism



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8. Differentiate between any one of the following : (restrict the answer 3 to 4 important sentences).

Primary treatment and Secondary treatment of sewage



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9. Differentiate between the following :
(restrict the answer 3 to 4 important sentences).

Mutation and Genetic recombination



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Section B Zoology Group Iii

1. Give an account of the human male reproductive system.



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2. Answer any two questions (restrict each answer within 200 words):

Describe the embryological evidences of organic evolution.



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3. Answer the question (restrict each answer within 200 words).

Explain the genetic basis, clinical symptoms, diagnosis and treatment of any two chromosomal disorders in human.



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4. Answer any two questions (restrict each answer within 200 words).

Write notes on any two of the following :

Predation



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5. Answer the questions (restrict each answer within 200 words).

Write notes on of the following :

Sexually transmitted diseases



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6. Answer any two questions (restrict each answer within 200 words).

Write notes on any two of the following :

Malaria



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7. Answer the questions (restrict each answer within 200 words).

Write notes on of the following :

Biopiracy





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