

XII - MODEL QUESTION PAPER
BIOLOGY - ZOOLOGY
(FULL PORTION – TEST 1)

TIME: 1.30 hrs**MARKS: 35**

SECTION - A

I. Choose the correct answer: -**8 X 1 = 8**

1. An operon is a:

- (a) Protein that suppresses gene expression
- (b) Protein that accelerates gene expression
- (c) Cluster of structural genes with related function
- (d) Gene that switched other genes on or off

2. Multiple fission is seen in _____

- (a) Vorticella and ceratium
- (b) Plasmodium and paramecium
- (c) Amoeba and cyanobacteria
- (d) Vorticella and plasmodium

3. Which of the following is the correct sequence of event with reference to the central dogma?

- (a) Transcription, Translation, Replication
- (b) Transcription, Replication, Translation
- (c) Duplication, Translation, Transcription
- (d) Replication, Transcription, Translation

4. Name the person who was the first to use the term antibiotic

- (a) Selman Waksman
- (b) Alexander Flemming
- (c) Earnest Chain
- (d) Howard Florey

5. PAN stands for _____

- (a) Peroxyacetic nitrogen
- (b) Perchloro acetate
- (c) Peroxyacetyl nitrate
- (d) Peractyl nitroxide

6. _____ is a plant with hallucinogenic properties

- (a) Atropa belladonna (b) Rauwolfia vomitoria (c) Jatropha curcas (d) Pongamia

7. Assertion (A): Siamese twins are conjoined twins who are joined during birth.

Reason (R): Because, Dizygotic twins will be of same sex.

- (a) A and R are correct (b) A is correct but R is incorrect
(c) Both A and R are incorrect (d) R is the correct explanation for A

8. Match, the following list of microbes and their importance:

- a) Saccharomyces cerevisiae - (i) Production of immunosuppressive agents
b) Monascus purpureus - (ii) Ripening of Swiss cheese
c) Trichoderma polysporum - (iii) Commercial production of ethanol
d) Propionibacterium shermanii - (iv) Production of blood - cholesterol lowering agents.
(a) (iv) (iii) (ii) (i) (b) (iv) (ii) (i) (iii)
(c) (iii) (i) (iv) (ii) (d) (iii) (i v) (i) (ii)

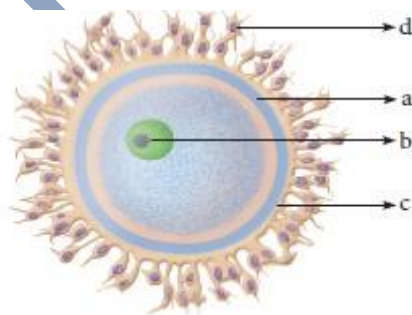
SECTION – B

II. Answer any four questions:-

4 X 2 = 8

9. What is the view of neo – lamarckism?

10. Identify the given diagram and label the parts:



11. How are STDs transmitted?

12. ELISA is a technique based on the principles of antigen-antibody reactions. Can this technique be used in the molecular diagnosis of a genetic disorder such as Phenylketonuria?

13. Define totipotency.

14. Given below are some human organs. Identify one primary and one secondary lymphoid organ. Explain its role. Liver, thymus, stomach, thyroid, tonsils.

SECTION – C

III. Answer any three questions. Qn. 19 is compulsory.

3 X 3 = 9

15. Explain how ADA deficiency can be corrected

16. Mention the symptoms of Down's syndrome.

17. Distinguish between structural gene, regulatory gene and operator gene

18. Give a schematic representation of spermatogenesis and oogenesis in humans.

19. Taking the example of Peppered moth, explain the action of natural selection. What do you call the above phenomenon?

SECTION – D

IV. Answer all the questions.

2 X 5 = 10

20. a) Write an essay on experimental approach to the origin of life.

(OR)

b) Write an essay on infertility and their causes.

21. a) Explain how recombinant Insulin can be produced.

(OR)

b) List out the major effects of Ozone Depletion.

XII - MODEL QUESTION PAPER
BIOLOGY - ZOOLOGY
(FULL PORTION – TEST 2)

TIME: 1.30 hrs**MARKS: 35**

SECTION - A

I. Choose the correct answer: -**8 X 1 = 8**

1. Which period was called “Age of fishes”?
(a) Permian (b) Triassic (c) Devonian (d) Ordovician
2. External fertilization is seen in _____
(a) Mammals and birds (b) Reptiles and sponges
(c) Fishes and birds (d) Sponges and amphibians
3. Which of the following is correct for r-selected species
(a) Large number of progeny with small size
(b) Large number of progeny with large size
(c) Small number of progeny with small size
(d) Small number of progeny with large size
4. Improvement of human race by encouraging the healthy persons to marry early and produce large number of children is called
(a) Positive eugenics (b) Negative eugenics
(c) Positive euthenics (d) Positive euphenics
5. Cryopreservation means it is a process to preserve plant cells, tissues or organs
(a) At very low temperature by using ether.
(b) At very high temperature by using liquid nitrogen
(c) At very low temperature of -196 by using liquid nitrogen
(d) At very low temperature by using liquid nitrogen

6. The vector for filariasis is

- (a) Culex mosquito (b) Anopheles mosquito
(c) Aedes aegypti (d) Tsetse fly

7. Assertion (A): Ovulation is the release of ovum from the Graafian follicle.

Reason (R): It occurs during the follicular phase of the menstrual cycle.

- (a) A and R are correct (b) A is correct but R is incorrect
(c) Both A and R are incorrect (d) R is the correct explanation for A

8. Spread of cancerous cells to distant sites is termed as

- (a) Metastasis (b) Oncogenes (c) Proto-oncogenes (d) Malignant neoplasm

SECTION – B

II. Answer any four questions:-

4 X 2 = 8

9. Write a short note on Haemophilia.

10. Differentiate morphallaxis and epimorphosis

11. What is Genetic code?

12. Autoimmunity is a misdirected immune response – Justify.

13. List out the chemical alarm signals produced during inflammation.

14. Comment on parasitism.

SECTION – C

III. Answer any three questions. Qn. 19 is compulsory.

3 X 3 = 9

15. What are all the future challenges of HGP?

16. Write short note on African sleeping sickness.

17. Write about waste water treatment.

18. Can a disease be detected before its symptoms appear? Explain the principle involved.

19. Give an account on genetic control of Rh factor.

SECTION – D

IV. Answer all the questions.

2 X 5 = 10

20. a) Describe the different types of syngamy.

(OR)

b) Explain the process of transcription in Eukaryotes.

21. a) Write a brief account on different types of antigen –antibody reactions.

(OR)

b) Give an brief account on Tropical forest.

XII - MODEL QUESTION PAPER
BIOLOGY - ZOOLOGY
(FULL PORTION – TEST 3)

TIME: 1.30 hrs**MARKS: 35**

SECTION - A

I. Choose the correct answer: -**8 X 1 = 8**

1. Giant Amoeba refers to _____.
(a) Opalina (b) Trichonympha (c) Ceratium (d) Pelomyxa
2. DOPA stands for _____.
(a) 3,4 – dihydroxy phenyl acetate (b) 3,4 – dihydroxy phenyl alanine
(c) 3,4 – dihydroxy phenyl aspartate (d) 3,4 – dihydroxy phenyl aldehyde
3. DNA finger printing technique was developed by _____.
(a) Frederick Sanger (b) Alex Jeffrey (c) Hershey (d) Rosalind Franklin
4. Lamarck theory was disproved by _____.
(a) August Weismann (b) Weinberg (c) Haeckel (d) Wallace
5. Which of the following statement(s) is true regarding cancer cells?
(a) Neoplasm or tumor cells show uncontrolled growth
(b) They are metastatic
(c) They lack contact inhibition
(d) They may be benign or malignant
(a) (a) only (b) (b) and (c) (c) (d) only (d) All the above
6. Most of the adult stem cells are ____ and can act as a repair system of the body
(a) Totipotent (b) Pluripotent
(c) Multipotent (d) Oligopotent

7. Assertion (A): Streptomycin is an antibiotic.

Reason (R): Antibiotic are microbial chemicals inhibits the growth of pathogenic microbe.

- (a) A and R are correct (b) A is correct but R is incorrect
(c) Both A and R are incorrect (d) R is the correct explanation for A

8. In the e- waste generated by the mobile phones, which among the following metal is most abundant?

- (a) Copper (b) Silver (c) Palladium (d) Gold

SECTION – B

II. Answer any four questions:-

4 X 2 = 8

9. Write a short note on Haematopoiesis.
10. Differentiate morphallaxis and epimorphosis
11. Draw and label the structure of human ovum.
12. Give reason: Genetic code is universal.
13. List out the disadvantages of cloning animals.
14. Comment on sacred groves.

SECTION – C

III. Answer any three questions. Qn. 19 is compulsory.

3 X 3 = 9

15. Write a brief note on adaptations of terrestrial animals.
16. Write short note on antibiotic resistance.
17. Differentiate Homologous organs and Analogous organs.
18. Can a disease be detected before its symptoms appear? Explain the principle involved.
19. Removal of gonads cannot be considered as a contraceptive option. Why?

SECTION – D**IV. Answer all the questions.****2 X 5 = 10**

20. a) Write an essay on parthenogenesis.

(OR)

b) Explain the role of lactose as an inducer in a lac operon.

21. a) What is recombinant hepatitis B vaccine? Explain the production process.

(OR)

b) Name and explain any four lymphoid organs in humans.

XII - MODEL QUESTION PAPER
BIOLOGY - ZOOLOGY
(FULL PORTION – TEST 4)

TIME: 1.30 hrs**MARKS: 35**

SECTION - A

I. Choose the correct answer: -**8 X 1 = 8**

1. The skene's gland of female are homologous to
(a) Bulbourethral glands of the male (b) Cowper's gland of male
(c) Prostrate gland of male (d) Glans penis of male.
2. Competition between species leads to _____.
(a) Mutualism (b) Parasitism (c) Extinction (d) Ammensalism
3. Improvement of human race by encouraging the healthy persons to marry early and produce large number of children is called
(a) Positive eugenics (b) Negative eugenics (c) Positive euthenics (d) Positive euphenics
4. Identify the mismatched pairs
(a) Thorn of Bougainvillea and Tendril of cucurbita - Analogy
(b) Forelimbs of whale and cat - Analogy
(c) Octopus eye & Mammalian eye - Homology
(d) Root of sweet potato & stem of potato – Homology
5. Select the correct statement from the following.
(a) Biogas is produced by the activity' of aerobic bacteria on animal waste.
(b) Methanobacterium is an aerobic bacterium found in rumen of cattle.
(c) Biogas, commonly called gober gas, is pure methane.
(d) Activated sludge-sediment in settlement tank of sewage treatment plant is a right source of aerobic bacteria.
6. Most of the adult stem cells are ____ and can act as a repair system of the body
(a) Totipotent (b) Pluripotent (c) Multipotent (d) Oligopotent

7. Assertion (A): Semi-conservative model was proposed by Hershey and Chase.

Reason (R): The daughter DNA contains only new strands.

- (a) A and R are correct (b) A is correct but R is incorrect
(c) Both A and R are incorrect (d) R is the correct explanation for A

8. Identify the incorrect statement.

(i) EcoSan toilets is a sustainable way for handling human excreta by using dry composting toilets

(ii) It reduces waste water generation

(iii) It is based on recovery and recycling of nutrients from excreta

(iv) EcoSan toilets are used in several parts of India and Srilanka.

- (a) i and ii only (b) iii and iv only (c) all the above (d) none of the above

SECTION – B

II. Answer any four questions:-

4 X 2 = 8

9. Draw the diagrammatic representation of the spermatogenesis.

10. Differentiate female foeticide and infanticide.

11. Define Albinism.

12. Give reason: Genetic code is universal.

13. List out the salient features of mutation theory.

14. Define the key features of organic farming.

SECTION – C

III. Answer any three questions. Qn. 19 is compulsory.

3 X 3 = 9

15. Write three causes of infertility in human beings.

16. Auto immunity is a misdirected immune response. Justify.

17. List out the uses of transgenesis.

18. How can we identified criminals by using PCR technique?

19. Enumerate the goals and methodologies of human genome project.

SECTION – D

IV. Answer all the questions.

2 X 5 = 10

20. a) Write an essay on process of transcription.

(OR)

b) Write an essay on inheritance of X – linked genes.

21. a) Write an essay on waste water treatment.

(OR)

b) Write an essay on population interactions.

XII - MODEL QUESTION PAPER
BIOLOGY - ZOOLOGY
(FULL PORTION – TEST 5)

TIME: 1.30 hrs**MARKS: 35**

SECTION - A

I. Choose the correct answer: -**8 X 1 = 8**

1. The skene's gland of female are homologous to
(a) Bulbourethral glands of the male (b) Cowper's gland of male
(c) Prostrate gland of male (d) Glans penis of male.
2. Find the mismatch pair:
(a) Infertility - Uterine fibroids
(b) Cervical cancer - Vaginitis
(c) AIDS - Prolonged lymph nodes
(d) Syphilis - Gummas
3. Who coined the term pre - biotic soup?
(a) Oparin (b) Darwin (c) Haldane (d) Huxley
4. Special type of transverse division seen in Aurelia is called ____
(a) plasmotomy (b) strobilation (c) pedal laceration (d) sporulation
5. A gene showing codominance has:
(a) Alleles tightly linked on the same chromosome.
(b) Alleles that are recessive to each other
(c) Both alleles independently expressed in the heterozygote
(d) One allele dominant on the other
6. Who propounded the theory of recapitulation?
(a) Ernst Von Haeckel (b) Charles Darwin
(c) Thomas Huxley (d) Oparin

7. Assertion (A): More than half of earth's tropical forests have already been destroyed.

Reason (R): The length of daylight is about 12 hours and varies little in tropical forest.

- (a) A and R are correct (b) A is correct but R is incorrect
(c) Both A and R are incorrect (d) R is the correct explanation for A

8. Pick out the correct statements

- a) Haemophilia is a sex-linked recessive disease
b) Down's syndrome is due to aneuploidy
c) Phenylketonuria is an autosomal recessive gene disorder
d) Sickle cell anaemia is an X-linked recessive gene disorder

- (a) a) A and D are correct (b) B and D are correct
(c) A, C and D are correct (d) A, B and C are correct

SECTION – B

II. Answer any four questions:-

4 X 2 = 8

9. What is Braxter – Hick's contractions?
10. VNTR can serve as genetic markers – Give reason.
11. Define CVS.
12. What are coprolites?
13. Draw and label the parts of microbial fuel cell.
14. Differentiate between Eurytherms and Stenotherms.

SECTION – C

III. Answer any three questions. Qn. 19 is compulsory.

3 X 3 = 9

15. Define plasmotomy.
16. Define AQI. What will be the air quality if AQI is between 0-50?
17. How are viral diseases classified?

18. Differentiate divergent evolution and convergent evolution.

19. In E.coli, three enzymes β - galactosidase, permease and transacetylase are produced in the presence of lactose. Explain why the enzymes are not synthesized in the absence of lactose.

SECTION – D

IV. Answer all the questions.

2 X 5 = 10

20. a) Write an essay on experimental approach to the origin of life.

(OR)

b) Write an essay on infertility and their causes.

21. a) Write an essay on biogas production.

(OR)

b) Explain the structure of immunoglobulin with neat labelled diagram.

XII - MODEL QUESTION PAPER
BIOLOGY - ZOOLOGY
(FULL PORTION – TEST 6)

TIME: 1.30 hrs

MARKS: 35

SECTION - A

I. Choose the correct answer: -

8 X 1 = 8

1. Insulin molecule is made up of two polypeptide chains. The chain A has _____ amino acids and chain B has _____ amino acids.
 (a) 26, 27 (b) 22, 29 (c) 21, 30 (d) 20, 31
2. Sexual mode of reproduction in protozoa is _____.
 (a) Anisogamy (b) Plasmogamy (c) Plasmotomy (d) Schizogony
3. Which one of the following is not the function of placenta.
 (a) To facilitate supply of oxygen and nutrients to the embryo
 (b) To secrete oestrogen
 (c) To facilitate the removal of carbon-di-oxide and material from embryo
 (d) To secrete oxytocin during parturition.
4. Kyoto protocol was endorsed at _____.
 (a) CoP-3 (b) CoP -5 (c) CoP -4 (d) CoP -6
5. Match the following list of microbes and their importance:
 (i) *Saccharomyces cerevisiae* - 1. Production of immunosuppressive drugs
 (ii) *Monascus purpureus* - 2. Ripening of swiss cheese
 (iii) *Trichoderma polysporum* - 3. Commercial production of ethanol
 (iv) *Propionobacterium shermanii* - 4. Production of blood – cholesterol lowering agents
 (a) 4 3 2 1 (b) 4 2 1 3 (c) 3 1 4 2 (d) 3 4 1 2
6. The active form of *Entamoeba histolytica* feeds upon:
 (a) Erythrocytes, mucosa and submucosa of colon
 (b) Mucosa and submucosa of colon only

(c) Food in Intestine

(d) Blood only

7. Assertion (A): Tubectomy is the surgical sterilization in women,

Reason (R): It blocks the transport of the gametes and prevent contraception.

(a) A and R are correct (b) A is correct but R is incorrect

(c) Both A and R are incorrect (d) R is the correct explanation for A

8. Who proposed central dogma?

(a) Watson and Crick (b) Beadle and Tatum

(c) Jacob and Monad (d) Crick

SECTION – B

II. Answer any four questions:-

4 X 2 = 8

9. Comment: a) Infertility b) Contraception

10. Differentiate mRNA and tRNA.

11. PCR is a useful tool for early diagnosis of an infectious disease. Explain.

12. Autoimmunity is a misdirected immune response – Justify.

13. Define phenotypic adaptation with an example.

14. What is biomagnification?

SECTION – C

III. Answer any three questions. Qn. 19 is compulsory.

3 X 3 = 9

15. What is parthenogenesis? Give two examples from animals.

16. Describe the structure of HIV.

17. What are Transgenic animals? Give examples.

18. List out the various causes for biodiversity losses.

19. List out the properties of gene.

SECTION – D

IV. Answer all the questions.

2 X 5 = 10

20. a) Describe Meselson and Stahl experiment of DNA replication.

(OR)

b) Explain the structure of haemoglobin with suitable diagram.

21. a) Write the steps involved in PCR.

(OR)

b) Explain the structure of human sperm with neat labelled diagram.



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