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HBSE MODEL PAPER 2024



Practice Papers

MODEL PAPERS

Marking Scheme

ANSWER KEY

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QUESTION PAPER

BIOLOGY CODE- 865

CLASS – XIIth

MAX MARKS 70 **TIME ALLOWED 3Hrs**

GENERAL INSTRTUCTIONS:

1. All questions are compulsory.
2. The question paper has five sections and 35 questions.
3. Section A has 18 questions of mark 1 each; Section B has 7 questions of 2 mark each ; Section C has 5 questions of 3 marks each ; Section D has2 case based questions of 4 marks each ; Section E has 3 questions of 5 marks each .
4. There is no overall choice .However internal choices have been provided in some questions. A student has to attempt only one of the alternatives in such questions.
5. Where ever necessary, neat and properly labeled diagrams should be drawn.

SECTION A

1. Choose the right one among the statements given below:
   - **a.** IUDs are generally inserted by user herself.
   - **b.** IUDs increase phagocytosis reaction in uterus.
   - **c.** IUDs suppress gametogensis.
   - **d.** IUDs once inserted need not be replaced

2. Hormones released by placenta are:-
   a. hPL ,hCG,oxytocin.
   b. hCL,hPL, prolactin.
   c. hCG,hPL,estrogen,progestrone
   d. hPL,hCG,estrogen,progestrone, relaxin.

3. Test cross involves:
   a. crossing of F1hybrid with a homozygous recessive genotype.

b. Crossing between F1 hybrids.
c. Crossing between two genotype with recessive traits.
d. Crossing between two genotype with dominant traits .

4. Human chromosomes with highest and least no of genes are:
    a. Chromosome 21 and Y.
    b. Chromosome 1 and X.
    c. Chromosome 1 and Y.
    d. Chromosome X and Y.
5. Evolutionary history of any organism is known as :-
    a. Palaeontology
    b. Phylogeny
    c. Ontology
    d. Ancestry
6. AIDS is caused by HIV. HIV does not spread by which of the following mean:
    a. Transfusion of contaminated blood
    b. Sharing of infected needles.
    c. Shaking hands with infected person.
    d. Sexual contact with infected person.

7. An example of endomycorrhiza :
    a. *Glomus*
    b. Rhizobium
    c. Agaricus
    d. Nostoc

8. PCR is most useful in :
    a. DNA synthesis
    b. Protein synthesis
    c. DNA amplification
    d. Amino acid synthesis

9. A transgenic animal has:
    a. Foreign DNA in its cells
    b. Foreign RNA in its cells
    c. Foreign DNA in some of its cells

d. Both B and C

10. A protozoan reproduce by binary fission. What will be the no of protozoan after six generation:
    a. 24
    b. 128
    c. 64
    d. 32

11. Interaction between fig tree and wasp is :
    a. Parasitism
    b. Mutualism
    c. Commensalism
    d. Predation

12. Red Data book contains :
    a. Useful plants
    b. Useful animals
    c. Endangered species
    d. Both A and B

13. Which of the following is a false fruit:
    a Banana
    b. Orange
    c Apple
    d Mango

14. Sickle.cell anemia is an example of:
    a. Point mutation
    b. Autosomal recessive disorder
    c. Mendelian disorder
    d. All of these

Assertion Reason based questions:

Answer these questions by choosing right option.

(a)Both A and R are true an R is right explanation of A

(b)Both A and R are true an R is not right explanation of A

(c) A is true and R is false

(d)A is false and R is true

15. Assertion A : A community constitute the biotic component of ecosystem
Reason R: Different type of organism's i.e. plants and animals together makes a community

16. Assertion A: Chemical pesticides are comparatively hazardous than biopesticides.
Reason R: Biopesticides degrade the environment quickly

17. Assertion A: One gene one enzyme hypothesis is applicable universally .

Reason R: One enzyme may contain one and more than one polypeptide chains.

18. Assertion A: All the individuals of purelines are heterozygous .

ReasonR: A heterozygous individual has two dissimilar forms of an allele.

SECTION B

19. Name the organic material found in exine layer of cell wall of pollen grain? Write down its advantage of it for pollen grain.
20. What is point mutation? Give example of it.
21. Wings of a bird and wings of butterfly are either analogous or homologous organ? Also tell the kind of evolution they represent.
22. What is GEAC? Write down its objectives.

OR

If we don't follow genetic barriers while creating GMO,it can be dangerous. Do you agree with this statement?

23. A person is advised antiretroviral therapy, which infection is he suffering from? Name the causative organism for this disorder.
24.

a. What is triple fusion? Name the nuclei involve in it.

Or

b. Why apomixis is preferred to produce seeds in hybrid crops?

25. Explain how XXY individuals can arise in human beings? Name the disorder and its symptoms?

SECTION C

26. How Hugo De Vries theory of evolution differs from Darwin Theory of evolution?
27.
    a. Why diseases like Tuberclosis,cholera,typhoid spread more commonly in crowded areas?
    b. What are vectors and pathogens?
28. what is advantage of genetically synthesized insulin over traditionally synthesized insulin? Name the organism used to produce this insulin?

OR

(a)Name the nematode that infests the tobacco plant and the part that it infests.
(b)How is *Agrobacterium* used to protect tobacco plant from this attack?

29. Why energy pyramids in a food chain are never inverted although pyramids of number can be inverted? Explain
30.
    a. Why tropics have greater species diversity?
    b. Which is better method of conservation of biodiversity according to you in situ or ex situ?

OR

Which approach of biodiversity conservation do you feel is more comprehensive to understand the importance of biodiversity broad utilitarian or narrow utilitarian.?

SECTION D

31. CASE STUDY 1

Overall ability to fight the disease causing agents is called immunity. It is of two types. One is of non specific type and another is of specific type .Immune response in specific type of immunity is because of two type of lymphocytes. One of these cells produce protein bodies called antibodies which counteract the pathogen .When a host is exposed to antigen , antibodies are produced in its body. Preformed antibodies are administered to develop immunity in some cases. Sometime immune system shows exaggerated response to certain antigen .These antigens are called allergens.

    a. What are interferons? (1)
    b. Name the antibody found in colostrum?(1)
    c. Name the lymphocytes that produce antibodies?(2)

OR

d. Differentiate between active immunity and passive immunity?(1)

32. CASE STUDY 2

Reproductive Health refers to a total well being in all aspect of reproduction.i.e.physical,social,imotional and behavioral .Our nation was the first nation in the world to initiate various action plan at world level towards attaining reproductively healthy society.Counselling and creating awareness among people about reproductive organs,adolescence and associated changes, safe and hygienic sexual practices,sexually transmitted diseases is the primary step towards reproductive health.Providing facilities to control STDs,medical termination of pregnancy, birth control,infertility,delivery,post natal child and maternal management is another aspect of reproduction and child care health.

a. In which year the family planning programs were initiated?(1)
b. What do you think that awareness regarding reproductive health can help to prevent STDs?(2)

OR

c. Write major task of RCH programme.(2)
d. Name any STD.(1)

SECTION E

33. What are the phases of menstrual cycle? What happens if an egg is fertilized?

OR

Write in brief about (a) Implantation (b) male accessory ducts.

34. What is semi conservative mode of replication? Explain Messelson and Stahl experiment to prove semi conservative replication?

OR

a) Explain in two lines: (1) Promoter (2) coding strand (3) polymorphism
b) Write salient feature of Human Genome Project.

35.

a. How a reporter enzyme help to monitor transformed cells in addition to selectable marker?

b. Explain gel electrophoresis

OR

Look at the diagram and identify the process. Explain the process and also write its applications.

