KENDRIYA VIDYALAYA KOLLAM

HALF YEARLY EXAMINATION (2016-17)

BIOLOGY(Theory)

CLASS XII

Time allowed: 3 Hours **Max. Marks : 70**

General Instructions:

- *All questions are compulsory.*
- *Question paper consists of four sections A, B, C, D and E. Section A contains 5 questions of 1 mark each. Section B contains 5 questions of 2 marks each. Section C contains 12 questions of 3 marks each Section D one question of 4 marks and section E contain 3 questions of 5 marks each.*
- *There is no overall choice. However an internal choice is provided in one question of 2 marks, one question of 3 marks and three questions 5 marks weight age. Student has to attempt only one of the alternatives in such questions.*
- *Wherever necessary the diagrams drawn should be neat and properly labeled.*

SECTION: A

1. Name the type of flower which favours cross pollination.

2. Name two chemical alarm signals which cause inflammatory response.
3. Who developed the principle/method of automated DNA sequencer?

4. A haemophilic son was born to normal parents.Give the genotypes of the parents.

5. Name the organism commercially used for the production of single cell protein.

SECTION: B

6. Mention the location and function of tapetum in the microsporangium of angiosperms.State the characteristic features of the cells forming tjhis layer.

7. Write the steps involved in DNA finger printing.
   OR
   Write the goals of Human genome project.

8. Lymph nodes, spleen, Peyer's patches of small intestine, appendix.
   (i)What do the above organs relate to?

ite one significant combined function of both Bone marrow and ymus.

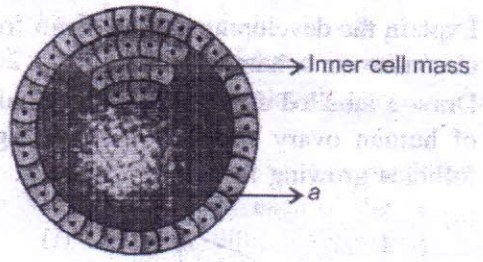
e a disorder, give the karyotype and write the symptoms a human rs from, as a result of monosomy of sex chromosome.

ne the two special type of lymphocytes in humans. How do they er in their roles in immune response?

SECTION: C

hat is apomixis?
tate the way in which apomictic seeds develop
hat is the importance of apomixis in hybrid seed industry?

dy the figure given below and answer the questions that follow;



ame the stage of human embryo the figure represents
lentify (a) in the figure and mention its function
lention the fate of the inner cell mass after implantation in the terus
here are the stem cells located in this embryo?

scribe Harshey and Chase experiment.Write the conclusion they at after the experiment.

OR

e the aim and describe Meselson and Stahl's experiment

hat is adaptive radiation?Explain with the help of a suitable le,where adaptive radiation has occurred to represent convergent on

a pea plant round seed is dominant over wrinkled seed. What will the expected phenotypic and genotypic ratio of the offspring in a ss between

a. Heterozygous round and heterozygous round.
b. Homozygous round and heterozygous round
c. Heterozygous round and wrinkled

Draw a schematic labelled illustration of lac operon in a switched on state

(b) Write the role of lactose in lac operon.

17 Give reason for each of the following

a) Smoking leads to deficiency of oxygen in the body tissues

b) Chewing tobacco causes an increase in blood pressure

c) Periodic recurrence of chill and high fever during malarial attack

18. a) Give an example where mutation breeding has been carried out successfully for introducing disease resistance in to crops?

b) What is the use of cyclosporin A in the medical field?Write the scientific name of the organism from which it is obtained.

c) Name the fungus that often forms mycorrhizal association

19. Mention and describe any three methods to overcome inbreeding depression in animal husbandry.

20. Describe the development of a 7-celled female gametophyte from a megaspore mother cell

21 Give a schematic representation showing the events of spermatogenesis in human male.

22. Explain the mechanism of sex determination in insects like Drosophila and honeybee

SECTION: D

23. An active member of an awareness group conducts regular programmes to sensitise public against alcoholism amongst youth- a serious health hazard in his locality

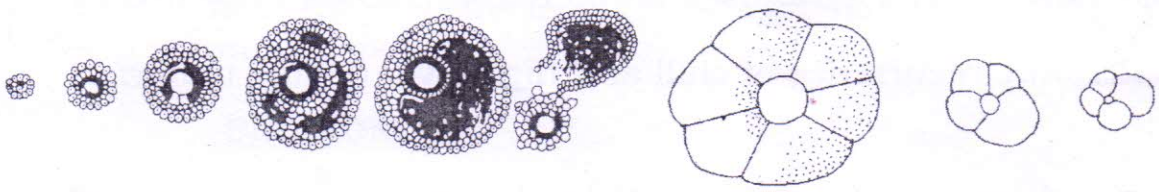
i) Why is alcoholism a serious issue?

ii) How can this member sensitise the public?

iii) Identify the values this member is trying to propagate amongst the people in his locality?

SECTION :E

24. The following is the illustration of the sequence of ovarian events "a" to "i" in a human female:



A B C D E F G H I

(*a*) Identify the figure that illustrates corpus luteum and name the pituitary hormone that influences its formation.

(*b*) Specify the endocrine function of corpus luteum. How does it influence the uterus?Why is it essential?

(*c*) What is the difference between "d" and "e"?

OR

a) Explain how the following act as contraceptives?
   (i) CuT (ii) Saheli
b) List out and explain any three methods that are categorized under Assisted reproductive technology (ART)

25. a) Explain industrial melanism to illustrate natural selection
b) Explain the three different ways in which natural selection operates

O R

a) Describe the initiation step of translation
b) What is satellite DNA? Name their two types. Mention the basis for the classification of satellite DNA

26 a)Explain the different steps involved in sewage treatement before it can be released in to water bodies.

c) What are methanogens?Name an example.

OR

a) Briefly describe various steps involved in plant breeding.
b) How is it possible to recover healthy banana plants from a diseased but desirable quality banana plant? Explain.