

KENDRIYA VIDYALAYA SANGATHAN: CHENNAI REGION**CLASS XII COMMON PRE-BOARD EXAMINATION 2016-2017****PRE-BOARD-I****Subject: Biology****Time Allotted: 3hrs****Max.Marks:70****General Instructions:**

- (i) There are total of 26 questions and five sections in the question paper. All questions are compulsory.
- (ii) Section A contains question number 1 to 5; Very Short Answer type questions of one mark each.
- (iii) Section B contains question number 6 to 10; Short Answer type I questions of two marks each.
- (iv) Section C contains question number 11 to 22; Short Answer type II questions of three marks each.
- (v) Section D contains question number 23, Value Based question of four marks.
- (vi) Section E contains question number 24 to 26, Long Answer type questions of five marks each.
- (vii) There is no overall choice in the question paper; however, an internal choice is provided in **one** question of **two** marks, **one** question of **three** marks and all the **three** questions of **five** marks. In these an examinee is to attempt any one of the two given alternatives.

SECTION-A

1. The meiocyte of an organism has 24 chromosomes. How many chromosomes are found in its
(a) Zygote (b) endosperm cells.
2. Name the cells which nourish the germ cells in human testes .Where are these cells located in the testes?
3. Write the names of the following
 - a) The most common species of bees suitable for apiculture.
 - b) The south Indian variety of sugarcane.
4. Name the ancestor of man based on the following details:
 - a) Man-like primates that lived about 15mya.Fossil found in Tanzania.
 - b) Human like, vegetarian, with brain size between 650cc and 800cc.

5. What do macrophages play in providing immunity to human body?

SECTION-B

6. Name the organic materials, the exine and intine of an angiosperm pollen grains are made up of. Explain the role of exine.

7. How does Cu T act as effective contraceptive for human female?

8. How can the DNA segments separated by gel electrophoresis be visualized and isolated?

OR

a) Why are exonucleases not useful in genetic engineering?

b) Why should a bacterial cell be made “competent” to introduce rDNA in to it?

9. Expand ELISA .State the principle, the ELISA is based on.

10. Explain Gause's competitive exclusion principle.

SECTION-C

11. Define apomixes. Mention two ways in which apomictic seeds develop.

12. a) Why are restriction endonucleases so called ?

b) What is a palindromic nucleotide sequence?

c) How do restriction endonucleases act on Palindromic site to create sticky ends?

13. Australian marsupials and placental mammals are the suitable examples of Adaptive radiation and convergent evolution. Explain giving reasons.

14. Draw a schematic sketch of pBR 322 plasmid and label the following in it.

a) any two restriction sites.

b) ori and rop genes.

c) two antibiotic resistant genes.

15. In Snapdragon a cross between true-breeding red flowered (RR) plants and true breeding white flowered (rr) plants showed a progeny of plants with all pink flowers.

a) The appearance of pink flower is not known as blending. Why?

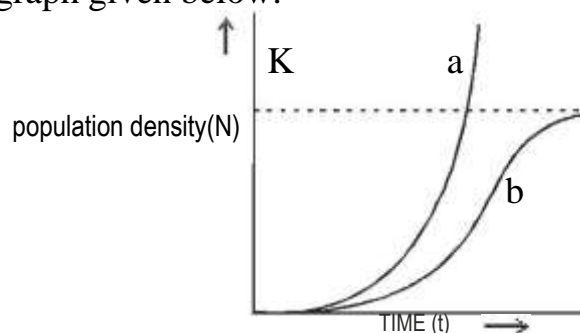
b) What is the phenomenon known as?

16. Explain how Industrial melanism supports Darwinian natural selection.
17. a) Name a drug used.
- as an effective sedative and painkiller.
 - for helping patients to cope with mental illness, but often misused.
- b) How do moderate and high dose of cocaine affect the human body?
18. a) Differentiate between in situ and ex situ approaches to conserve bio diversity.
- b) How is the population density of each of the following measured?
- Fish in a lake
 - Tigers in tiger reserve.
19. How is innate immunity different from the immunity that you acquire through vaccination? Describe any two ways by which innate immunity can be accomplished.

OR

Expand MOET. Explain the procedure of this technology in improving cattle production.

20. Describe any three methods of vector less introduction of rDNA in to host cells.
21. Study the graph given below:



- What does the curve “a” represent in the graph? What does ‘K’ stands for?
 - Which one of the two curves is considered a more realistic one for most of the animal population?
 - Which curve would depict the population of a species of deer if there are no predators in the habitat? Why is it so?
22. Particulate and gaseous pollutants along with harmless gases are released from the thermal power plants

- a) Name the two harmless gases released.
- b) Name the most widely used device for removing particulate pollutants from the air. Explain how the device works.

SECTION: D

23. In many villages, people do not go for vaccination because of some fear or religious beliefs; they feel they are healthy do not have the disease.
- a. How can we explain to them that vaccination will help to prevent the disease?
 - b. How can this idea be made to reach them?

SECTION: E

24. (a) Describe the formation of mature female gametophyte within an ovule in angiosperms.
- (b) Describe the structure of cell(s) that guides the pollen tube to enter the embryo-sac.

OR

Explain the different phases of menstrual cycle and correlate the phases with the different levels of ovarian hormones in human females.

25. Work out a monohybrid cross up to f₂ generation between two pea plants and two Antirrhinum plants both having contrasting traits with respect to colour of flower. Comment on the pattern of inheritance in the crosses carried above.

OR

Describe the process of transcription in a bacterium.

26. (a) What is Central dogma ? Who proposed it?
- (b) Describe Meselson and Stahl's experiment to prove that the DNA replication is semi-conservative.

OR

(a) A couple with blood groups 'A' and 'B' respectively have a child with blood group 'O'. Workout a cross to show how it is possible and the probable blood groups that can be expected in their other off-springs.

(b) Explain the genetic basis of blood groups in human population.
