Pratap Public School, Karnal

Set-A

TERM-II Practice Test-1

Class - XII

Subject - Biology (044)

Time : 2 Hours M.M :35

Name ..... Roll No. ..... Section .....

General Instructions:-

i) All question are compulsory.

ii) The question paper has three sections and 13 questions. All questions are compulsory.

iii) Section-A has 6 questions of 2 marks each; Section-B has 6 questions of 3 marks each; and Section-C has a case-based question of 5 marks.

iv) 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.

v) Wherever necessary, neat and properly labeled diagrams should be drawn.

(SECTION- A)

1. A young boy when brought a pet dog home started to complain of watery eyes and running nose. The symptoms disappeared when the boy was kept away from the pet.
   a) Name the type of anti body and the chemicals responsible for such a response in the boy.
   b) Mention the name of any one drug that could be given to the boy for immediate relief from such a response.
2. Baculoviruses are excellent candidates for IPM in an ecologically sensitive areas. Explain giving two reasons.

   OR

   a) A certain patient is suspected to be suffering from Acquired Immuno deficiency syndrome. Which diagnostic technique will you recommend for its detection?
   b) Name the type of immunity provided by anti-tetanus serum and polio vaccine. What is the difference between the constituents of the two vaccines.
3. Write the source of Morphine. State any three physical properties of Morphine.
4. Give four examples to prove that microbes release gases during metabolism?
5. Humming birds live among the bushes in tropics, while penguins live in icebergs. They cannot survive if their habitats are reversed. Justify.
6. a) Mention any two activities of animals which get cues from diurnal and seasonal variations in light intensity.

b) Pollinating species of wasps show mutualism with specific fig plants. Mention the benefits the female wasps derive from the fig trees from such an interaction.

OR

How do organisms cope with stressful environmental conditions, which are localised or of short duration? (2×6=12)

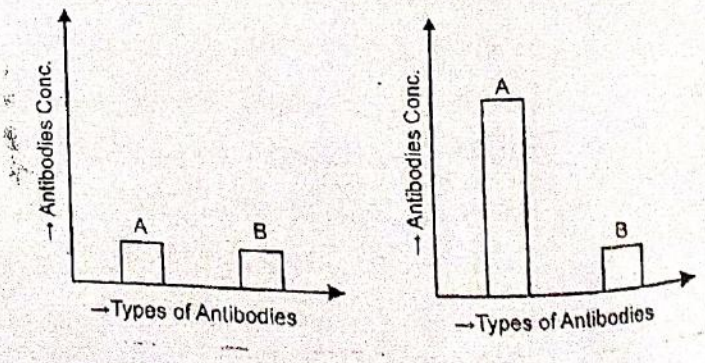
(Section-B)

7. i) A and B are communicable diseases and C and D are non-communicable. A is transmitted through a vector and B through droplet infection. C is caused due to deficiency of a hypothalamic hormone and D is a degenerative disease.
   Identify A, B, C and D.
   ii) Malaria, typhoid, pneumonia and amoebiasis are some of the human infectious diseases. Which one of these are transmitted through mechanical carriers?

OR

How do normal cells get transformed into cancerous neoplastic cells? Elaborate giving three examples of inducing agent.

8. A and B are two different cloning vectors in two different bacterial colonies cultured in chromogenic substrate. Bacterial colonies with cloning vector A were colorless, whereas those with B were blue colored. Explain giving reasons the cause of different colours.
9. Why have certain regions been declared as biodiversity 'hot spots' by environmentalists of the world? Name any two hot spot regions of India.
10. i) What is IFM? How can it help in conservation of forests?
    ii) Why are conventional methods not suitable for assessment of biodiversity of bacteria.
11. A mouse model testing was done for developing a new vaccine against a virus. In this method mice were vaccinated and their blood samples were collected and tested, the mice develop mild disease symptoms. After few days mice were again infected with pathogen. No symptoms developed and again their blood samples were taken.
    Two graphs show antibodies concentration in mice.
    a) Identify A and B in the graph.
    b) Which form of pathogen was used in Vaccination?
    c) How does vaccination work?
    d) Mice do not show any distance symptoms during 2nd exposure. Why?



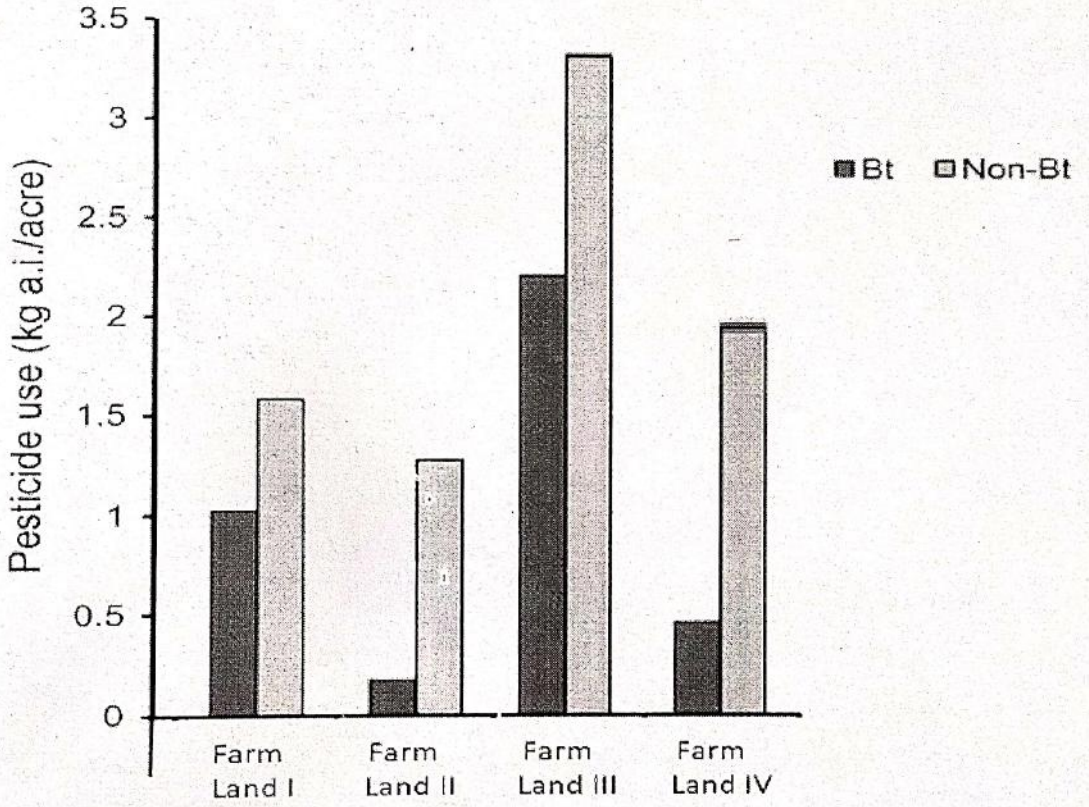
12. Describe the different steps in one complete cycle of PCR. (3×6=18)

(Section - C)

13. How is the Bt-cotton plant created as a GM plant? How is it protected against bollworm infestation?

OR

GM crops especially Bt crops are known to have higher resistance to pest attacks. To substantiate this an experimental study was conducted in 4 different farmlands growing Bt. and non Bt-Cotton crops. The farm lands had the same dimensions, fertility and were under similar climatic conditions. The histogram below shows the usage of pesticides on Bt crops and non-Bt crops in these farm lands.



a) Which of the above 4 farm lands has successfully applied the concepts of Biotechnology to show better management practices and use of agrochemicals? It you had to cultivate, which crop would you prefer (Bt or Non-Bt) and why?

b) Cotton Bollworms were introduced in another experimental study on the above farm lands wherein no pesticide was used. Explain what effect would a Bt and Non-Bt crop have on the pest.

Pratap Public School, Karnal

Set-B

TERM-II Practice Test-1

Class - XII

Subject - Biology (044)

Time : 2 Hours M.M :35

Name ..... Roll No. ..... Section .....

General Instructions:-

i) All question are compulsory.

ii) The question paper has three sections and 13 questions. All questions are compulsory.

iii) Section-A has 6 questions of 2 marks each; Section-B has 6 questions of 3 marks each; and Section-C has a case-based question of 5 marks.

iv) 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.

v) Wherever necessary, neat and properly labeled diagrams should be drawn.

(SECTION- A)

1. a) Mention any two activities of animals which get cues from diurnal and seasonal variations in light intensity.

   b) Pollinating species of wasps show mutualism with specific fig plants. Mention the benefits the female wasps derive from the fig trees from such an interaction.

   OR

   How do organisms cope with stressful environmental conditions, which are localised or of short duration?

2. Humming birds live among the bushes in tropics, while penguins live in icebergs. They cannot survive if their habitats are reversed. Justify.
3. Give four examples to prove that microbes release gases during metabolism?
4. Write the source of Morphine. State any three physical properties of Morphine.
5. Baculoviruses are excellent candidates for IPM in an ecologically sensitive areas. Explain giving two reasons.

   OR

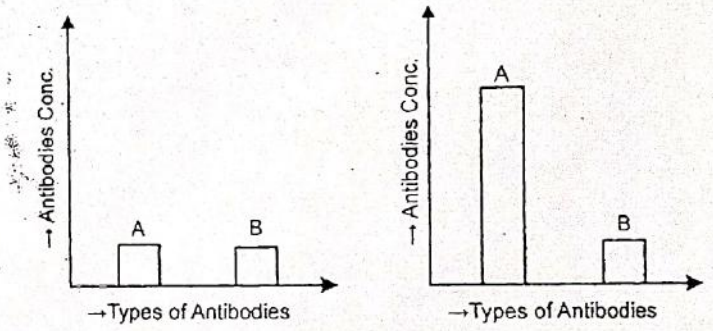
   a) A certain patient is suspected to be suffering from Acquired Immuno deficiency syndrome. Which diagnostic technique will you recommend for its detection?

   b) Name the type of immunity provided by anti-tetanus serum and polio vaccine. What is the difference between the constituents of the two vaccines.

6. A young boy when brought a pet dog home started to complain of watery eyes and running nose. The symptoms disappeared when the boy was kept away from the pet.
   a) Name the type of anti body and the chemicals responsible for such a response in the boy.
   b) Mention the name of any one drug that could be given to the boy for immediate relief from such a response. (2×6=12)

(Section-B)

7. Describe the different steps in one complete cycle of PCR.
8. A mouse model testing was done for developing a new vaccine against a virus. In this method mice were vaccinated and their blood samples were collected and tested, the mice develop mild disease symptoms. After few days mice were again infected with pathogen. No symptoms developed and again their blood samples were taken.
   Two graphs show antibodies concentration in mice.
   a) Identify A and B in the graph.
   b) Which form of pathogen was used in Vaccination?
   c) How does vaccination work?
   d) Mice do not show any distance symptoms during 2nd exposure. Why?



9. i) What is IFM? How can it help in conservation of forests?
   ii) Why are conventional methods not suitable for assessment of biodiversity of bacteria.
10. Why have certain regions been declared as biodiversity 'hot spots' by environmentalists of the world? Name any two hot spot regions of India.
11. A and B are two different cloning vectors in two different bacterial colonies cultured in chromogenic substrate. Bacterial colonies with cloning vector A were colorless, whereas those with B were blue colored. Explain giving reasons the cause of different colours.
12. i) A and B are communicable diseases and C and D are non-communicable. A is transmitted through a vector and B through droplet infection. C is caused due to deficiency of a hypothalamic hormone and D is a degenerative disease.
    Identify A, B, C and D.
    ii) Malaria, typhoid, pneumonia and amoebiasis are some of the human infectious diseases. Which one of these are transmitted through mechanical carriers?

OR

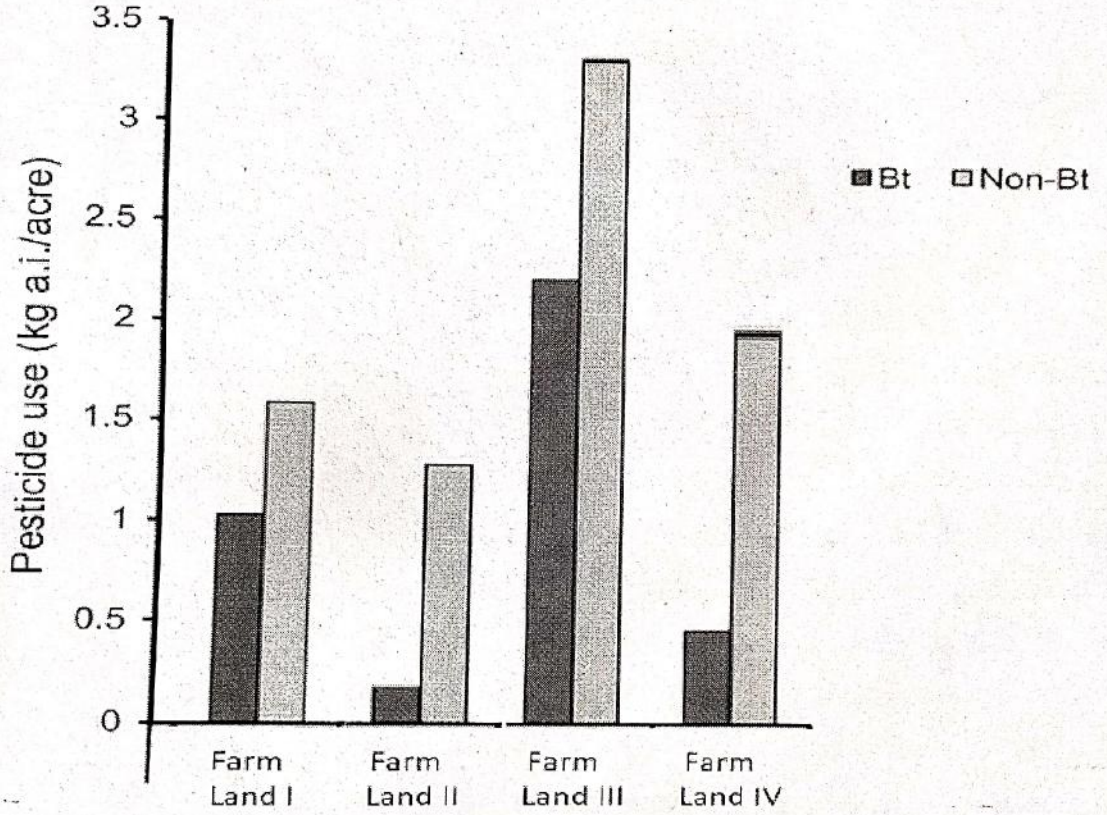
How do normal cells get transformed into cancerous neoplastic cells? Elaborate giving three examples of inducing agent. (3×6=18)

(Section - C)

13. How is the Bt-cotton plant created as a GM plant? How is it protected against bollworm infestation?

OR

GM crops especially Bt crops are known to have higher resistance to pest attacks. To substantiate this an experimental study was conducted in 4 different farmlands growing Bt. and non Bt-Cotton crops. The farm lands had the same dimensions, fertility and were under similar climatic conditions. The histogram below shows the usage of pesticides on Bt crops and non-Bt crops in these farm lands.



a) Which of the above 4 farm lands has successfully applied the concepts of Biotechnology to show better management practices and use of agrochemicals? It you had to cultivate, which crop would you prefer (Bt or Non-Bt) and why?

b) Cotton Bollworms were introduced in another experimental study on the above farm lands wherein no pesticide was used. Explain what effect would a Bt and Non-Bt crop have on the pest.