



10. The antiviral agent that prevent attachment and un-coating of endocytosed virion is:  
 a. Zidovudine  
 b. Acyclovir  
 c. Ribavirin  
 d. Amantadine
11. Place the following reactants in their proper order for the indirect ELISA test.  
 i) enzyme-linked antibody      ii) known antigen  
 iii) patient serum              iv) substrate  
 a. ii)-iv)-i)-iii)                              b. ii)-iii)-i)-iv)  
 c. i)-ii)-iii)-iv)                              d. iii)-ii)-i)-iv)
12. Which of the following is not an Interferon type-I?  
 a. IFN- $\alpha$     b. IFN- $\gamma$   
 c. IFN- $\omega$     d. IFN- $\beta$
13. Which of the following ELISAs uses two different antibodies?  
 I. Direct              II. Sandwich              III. Competitive  
 a. I and II only    b. II and III only  
 c. II only    d. III only
14. The spikes or peplomers on the surface of enveloped viruses are considered significant for:  
 i) attachment of the virus to the host cell.  
 ii) may have enzymatic activity.  
 iii) may play a role in nucleic acid replication.  
 a. Only i)    b. i) and ii)  
 c. ii) and iii)    d. All of the above
15. Human Carcinoma of cervix cell line (HeLa) used in the cultivation of viruses is a:  
 a. Primary cell line    b. Diploid cell line  
 c. Heteroploid cell line                                      d. Susceptible cell line
16. The time for which a virus carrying vector is allowed to access a virus free plant and could feed on it, is known as:  
 a. Acquisition feeding period    b. Inoculation access period  
 c. Inoculation feeding period    d. Acquisition access period
17. Which of the following process of insect mediated transmission is also known as circulative transmission?  
 a. Persistent transmission    b. Non-persistent transmission  
 c. Semi-persistent transmission                                      d. Horizontal transmission
18. The chorioallantoic membrane inoculation is mainly carried out for the cultivation of:  
 a. Rous sarcoma virus    b. Mumps virus  
 c. Avian adeno virus    d. Influenza virus
19. The symptom of viral disease in plant characterized by the uneven distribution of chlorophyll in yellow and green patches on the leaf that are irregularly distributed among normal green tissues and make a mosaic pattern, is known as:  
 a. Distortion    b. Chlorosis  
 c. Entations    d. Ring spot
20. The concept of viral phage therapy i.e. the therapeutic use of bacteriophages to treat pathogenic bacterial infections was given by:  
 a. George Eliava    b. Felix d'Hérelle  
 c. Greg Bear    d. Steffanie A. Strathdee

( PART-B : Descriptive )

Time : 2 hrs. 40 min.

Marks : 50

[ Answer question no.1 & any four (4) from the rest ]

1. What is vaccine? Write the principle of viral vaccines. Briefly explain different types of viral vaccines with example. 2+2+6=10
2. Describe the different phases of phage-display technique with suitable diagram. 10
3. What are prions? Discuss their general characteristic features. Add a note on spongiform encephalopathy caused by prions. 2+4+4=10
4. a. Write the difference between viroids and virusoids. 5+5=10  
b. What are antiviral agents? Explain the mechanism of action of different antiviral agents.
5. What is ELISA? Discuss the principle of the method. How ELISA technique is helpful in the diagnosis of viruses like HIV? 2+5+3=10
6. Give a diagrammatic representation genome replication in all the seven genomic classes of virus as described by Baltimore. Discuss the characteristic features of Class-IV in Baltimore's scheme of classification. 6+4=10
7. Why laboratory cultivation of virus is considered important in the study of viruses? Give a diagrammatic description of the cultivation of animal viruses using chick-embryo. 3+7=10
8. Discuss the various vertical methods of transmission associated with plant viruses. Mention the major symptoms developed in plants during virus mediated diseases. 6+4=10

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