

Lesson (6): GENERAL VIROLOGY

1- Viruses differ from bacteria in the following EXCEPT:

- a) Very small in size
- b) Contain one type of nucleic acid
- c) Obligatory intracellular parasites
- d) Cannot pass through bacterial filters

2- Viral capsid has the following functions EXCEPT:

- a) Protects the viral genome
- b) Mediates attachment to host cells
- c) Responsible for viral symmetry
- d) Non antigenic

3- Persistent human viral infection may be presented in the form of:

- a) Latent infection
- b) Chronic infection
- c) Slow infection
- d) Any of them

4- Viruses are distinguished from other microorganisms by:

- a) Small size
- b) Contain either DNA or RNA
- c) Have no metabolic activity outside host cells.
- d) All of the above

5- Viruses can grow on:

- a) Blood agar
- b) Living cells
- c) Milk
- d) Water

6- Viruses have all of following components EXCEPT:

- a) A protein coat
- b) Both DNA and RNA
- c) Either DNA or RNA

7- Viral proteins are important for:

- a) Formation of viral genome
- b) Stability of cellular-DNA
- c) Protection of viral genome
- d) All of the above

8- Viral nucleic acid has the following functions:

- a) Confers structural symmetry to the virion
- b) Adds antigenicity to the virion
- c) Directs the synthesis of new virions
- d) All of them

9- Viral envelope:

- a) Acquired during budding of the virus from host cell
- b) Destroyed by ether and alcohol
- c) It is lipoprotein in nature
- d) All of the above

10- Viruses adsorb to the host cell membrane at:

- a) Any place
- b) Specific hormones
- c) Receptor glycoprotein

11- Virus penetration into host cell membrane occurs through:

- a) Endocytosis or fusion between virus envelope and host cytoplasmic membrane
- b) Interaction between virus and specific host cell receptors
- c) Budding
- d) None of them

12- Viral genome is characterized by:

- a) May be either DNA or RNA
- b) It directs the synthesis of new virions
- c) May be infectious or non-infectious
- d) All of the above

13- A negative strand RNA virus:

- a) May act as mRNA
- b) It is directly translated into viral proteins
- c) It must be first transcribed by a viral polymerase enzyme

14- The effect of virus infection on host cells may be:

- a) Cell death
- b) Cell transformation
- c) Latent infection
- d) Any of the above

15- Latent infection is a common event in infection by:

- a) Polioviruses
- b) Herpes viruses
- c) Pox viruses
- d) ARBO viruses

16- Latent infection means:

- a) The virus remains in the cells without obvious effect on cell function
- b) The virus is always demonstrable and often shed
- c) The virus is completely eliminated from the host
- d) None of the above

17- Transformation is a common event in host infection by:

- a) Influenza A virus
- b) Coronaviruses
- c) Epstein-Barr virus
- d) Adeno viruses

18- Chronic viral infection means:

- a) The virus always detected and often shed
- b) The virus resolves spontaneously from the host
- c) The viral genome is integrated into cellular genome
- d) All of the above

19- Transformation of infected cells by oncogenic viruses means:

- a) Loss of the property of contact inhibition
- b) Cells can be propagated indefinitely in the laboratory
- c) Cells possess new tumor antigens on their surface
- d) All of the above

20-Transformation by oncogenic viruses includes the following changes EXCEPT:

- a) Integration of viral genome into the DNA of host cell
- b) Stimulation of pre-existing cellular oncogenes
- c) Modification of normal cell growth
- d) Production of haemagglutinin in infected cell membrane

21- All the following are oncogenic DNA viruses EXCEPT:

- a) Epstein-Barr virus
- b) Adeno virus
- c) Hepatitis B virus
- d) Human papilloma virus

22- Which of the following is RNA oncogenic virus?

- a) Human T cell lymphotropic virus
- b) HIV
- c) Poliovirus
- d) Rota virus

23- Virus transmission from animal to human can occur by the following routes:

- a) Directly through the bite of an infected animal
- b) Indirect through the bite of an infected arthropod vector
- c) Close contact with an infected animal or its secretions
- d) Any of the above

24- The most efficient route of virus entry into the host is:

- a) Cups and door knobs by skin contact
- b) Water, vegetables and fruits by ingestion
- c) Respiratory tract by inhalation
- d) None of the above

25- Viral transmission from mother to baby can occur by the following routes:

- a) Through placenta
- b) At the time of delivery
- c) During breast feeding
- d) All of the above

26- Localized virus infection is characterized by the following EXCEPT:

- a) Virus invades tissue at the site of entry
- b) Short incubation period
- c) Short lasting immunity
- d) Severe viraemia

27- Viral infectivity is destroyed by:

- a) Ultraviolet rays
- b) Heat at 50-60°C for 30 minutes
- c) Formaldehyde
- d) All of the above

28- All the following criteria are correct for interferon EXCEPT:

- a) It is the most important non-specific immune response to viral infection
- b) It is species-specific
- c) It is virus specific
- d) It acts intracellularly

29- Antiviral drugs act by:

- a) Inhibiting any of virus replication steps
- b) Integration in host DNA
- c) Both of them

30- Zidovudine is the drug of choice in treatment of:

- a) HIV
- b) Rabies
- c) Rift valley fever
- d) None of the above

31- Ganciclovir is the drug of choice in the treatment of:

- a) Cytomegalovirus
- b) Rabies virus
- c) Rift valley fever
- d) None of the above

32- Live attenuated virus vaccines are characterized by:

- a) The vaccine virus replicates as in normal infection without producing disease
- b) Stimulates the production of secretory IgA
- c) Requires cold chain transportation and storage
- d) All of the above

33- Inactivated virus vaccines are characterized by the following criteria EXCEPT:

- a) Heat stable
- b) Injected intramuscular to induce an immune response
- c) Not affected by virus interference from pre-existing infection with another virus
- d) Cannot be given to pregnant women or immune deficient individuals

34- Live attenuated viral vaccines include:

- a) HBV vaccine
- b) Rabies virus vaccine
- c) HCV vaccine
- d) Measles virus vaccine

35- Which of the following vaccines is /are live?

- a) Measles virus vaccine
- b) Mumps virus vaccine
- c) Rubella virus vaccine
- d) All of the above

36- Which of following vaccines is/are non-replicating?

- a) HBV vaccine
- b) Measles virus vaccine
- c) Yellow fever vaccine
- d) All of the above

37- Recombinant DNA technology is used in production of:

- a) Rift valley fever vaccine
- b) Varicella- zoster virus vaccine
- c) Hepatitis A virus vaccine
- d) Hepatitis B virus vaccine

38- The most common chemical agents used for inactivation of virus vaccines is:

- a) Phenol
- b) Beta propriolactone
- c) Chloroform
- d) None of the above

39- Demonstration of viral inclusion bodies in infected cells can be done by:

- a) Fluorescent microscope
- b) Light microscope
- c) Electron microscope
- d) All of the above

40- Virus growth in cell culture can be detected by:

- a) Cytopathic changes
- b) Haemadsorption
- c) Challenge interference
- d) All of the above

41- Direct demonstration of viral nucleic acid in infected cells can be done by:

- a) Hybridization technique
- b) Electron microscope
- c) Fluorescent microscope
- d) All of the above

42- PCR is used to detect:

- a) Viral antigen
- b) Viral envelope
- c) Viral genome
- d) Viral particles

43- Virus identification can be done by:

- a) Detection of viral antigen
- b) Detection of viral nucleic acid
- c) Detection of viral particles by electron microscope
- d) Any of them

44- Viral growth in cell culture can be recognized by :

- a) Cytopathic effect
- b) Challenge interference
- c) Haemadsorption
- d) Any of them

45- All the following tests are used for detection of viral antibodies EXCEPT:

- a) Virus neutralization
- b) Immune fluorescent test
- c) Complement Fixation test
- d) Hybridization technique

Mark True (T) or False (F) for each of the following statements:

- 46) Viruses contain either DNA or RNA.
- 47) Viruses cannot pass through bacterial filter.
- 48) Viruses are obligatory intracellular parasite.
- 49) Viruses divide by binary fission.
- 50) All the viruses have an envelope.
- 51) A positive stranded RNA virus acts directly as mRNA.
- 52) Viruses may contain enzymes for replication.
- 53) Viral capsid provides binding sites that enable the virus to attach to specific receptor sites.
- 54) Enveloped viruses are resistant to ether and detergents.
- 55) Viruses can enter cells by fusion or endocytosis.
- 56) Cytopathic changes in cell culture cannot be observed by light microscope.
- 57) Viral genome carries the genetic information for viral replication.
- 58) Interferons act by neutralizing viral infectivity.
- 59) Haemadsorption is due to the production of haemagglutinin in infected cells.
- 60) PCR is used for detection of viral antigen.
- 61) Ganciclovir is the drug of choice in HIV infection.
- 62) Virus neutralizing antibodies formed of IgM & IgG.
- 63) Amantadin is an antiviral drug which acts by blocking viral uncoating.
- 64) PCR depends on amplification of the specific nucleic acid sequences.
- 65) The presence of CPE is the only way to detect a virus in cell culture.
- 66) Interferon can be used in treatment of HBV and HCV infection.
- 67) In chronic infection the virus is hidden in host cell and could not be detected after recovery.
- 68) Attenuated virus vaccines can replicate but do not produce disease.
- 69) A retrovirus copies its RNA genome into a DNA copy.
- 70) Hepatitis B virus vaccine is a live attenuated vaccine.