



Please answer the following questions:-

1- Write short notes on:

(8 Marks)

- Fundamental characters of viruses
- Steps of Viral replication cycle and discuss viral penetration into the host cell
- DNA technology plays an important role in vaccine manufacture (Discuss with diagram)
- Interferon itself is not directly an antiviral agent (Discuss)

2- Complete the following sentences :

(6 Marks)

- Viruses may be..... 1..... shape such as Poxvirus,..... 2..... shape such as Rabies virus or crown shape such as..... 3.....
- Prion infection doesn't result in inflammatory or immune response due to .. 1..., 2..., 3..
- Function of Viral capsid..... 1.....,..... 2....., 3.....
- Attenuated reassortants may be constructed among viruses with..... 1..... genome
- Portals of virus release from the host include..... 1.....,..... 2....., 3....., 4.....
- DNA viruses are widely used in virus vector vaccines due to.... 1....., 2....., 3.....

3- Write the scientific term for each of the following :

(6 Marks)

- The process whereby viral DNA is converted into mRNA .
- An enzyme present on the outer envelope of Influenza virus which act on the (N acetyl neuraminic acid) on the surface of the RBCs by splitting it from the receptors.
- A viral genome which has nucleotide sequence identical to those of mRNA and directly translated into proteins without the need of transcription.
- Viral proteins concerned with the regulation of virus replication and inhibition of the expression of cellular RNA.
- First entry of the virus via lymphatic into the blood stream.
- A substance added to vaccine to potentiate its immunogenesis.

4- Choose the correct answer: (Please write your answer in a table)

(5 Marks)

1- Which of the following nucleic acid types are not found in viruses?

- | | |
|-------------------|-------------------|
| a) Linear dsDNA | c) circular ssRNA |
| b) Circular dsDNA | d) linear ssRNA |

2- A chemical component that is found in all viruses is:

- | | |
|------------|-----------------|
| a) Lipid | c) DNA |
| b) Protein | d) Glycoprotein |



٣- DNA viruses that multiply in the cytoplasm useenzyme for transcription.

- a) Viral replicase
- b) Host replicase
- c) host DNA-dependent RNA polymerase
- d) Viral DNA-dependent RNA polymerase

٤- Purified viral envelope glycoproteins lacking nucleic acid are called

- a) virions
- b) prions
- c) virosomes
- d) deletion mutants

٥- During viral infection, certain obligatory stages must be completed for the virus to be spread from host to another which include

- a) Entrance
- b) viral tropism
- c) synthesis of late protein
- d) assembly

٦- Ts mutant vaccines can multiply safely at.....

- a) 37 °C
- b) 20 °C
- c) 40 °C
- d) all of the above

٧- The DdRp helps to create.....

- a) DNA from +ve sense RNA
- b) DNA from -ve sense RNA
- c) mRNA from DNA
- d) RNA from mRNA

٨- Pantropic viruses such as

- a) Rabies virus
- b) NDV
- c) Herpesvirus
- d) Poxvirus

٩- Viral inactivation for vaccine production can be achieved by

- a) β - Propiolactone
- b) Alum
- c) Mineral oil
- d) b and c

١٠- Influenza virus is a

- a) haemagglutinating - eluting virus
- b) haemagglutinating- non eluting virus
- c) non eluting virus
- d) non haemagglutinating virus

Best Wishes
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