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# National Testing Agency

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## Virology

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## Virology-1

<b>Section Id :</b>	512452930
<b>Section Number :</b>	1
<b>Section type :</b>	Online
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<b>Number of Questions :</b>	100

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<b>Section Marks :</b>	100
<b>Mark As Answered Required? :</b>	Yes
<b>Sub-Section Number :</b>	1
<b>Sub-Section Id :</b>	5124521095
<b>Question Shuffling Allowed :</b>	Yes

**Question Number : 1 Question Id : 51245220372 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

In which of the following family the viruses are reported to replicate within their host cell and pack the host cell ribosome in the resultant virus particles?

1. *Coronaviridae*
2. *Arenaviridae*
3. *Picornaviridae*
4. *Herpesviridae*

**Options :**

- 51245267719. 1
- 51245267720. 2
- 51245267721. 3
- 51245267722. 4

**Question Number : 2 Question Id : 51245220373 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Match the following scientists (**List I**) their respective viral research (**List II**)

<b>List I</b>	<b>List II</b>
<b>Scientists</b>	<b>Viral research</b>
A. Louis Pasteur	I. Foot-and-mouth disease
B. Loeffler and Frosch	II. Leukemia in chickens
C. Ellerman and Bang	III. Rabies disease
D. Felix d'Hérelle	IV. Bacteriophage

Choose the **correct** answer from the options given below:

1. A - IV, B - II, C - I, D - III
2. A - I, B - IV, C - II, D - III
3. A - IV, B - III, C - I, D - II
4. A - III, B - I, C - II, D - IV

**Options :**

51245267723. 1  
51245267724. 2  
51245267725. 3  
51245267726. 4

**Question Number : 3 Question Id : 51245220374 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which one of the following is NOT a component of virus?

1. Protein coat
2. Lipid envelope
3. Ribonuclease
4. Ribonucleic acid

**Options :**

51245267727. 1

51245267728. 2

51245267729. 3

51245267730. 4

**Question Number : 4 Question Id : 51245220375 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which of the following statements does NOT define an icosahedron?

1. An icosahedron has 20 faces, each an equilateral triangle.
2. An icosahedron has 10 vertices, each formed where the vertices of six triangles meet.
3. An icosahedron has 30 edges, at each of which the sides of two triangles meet.
4. None of the above

**Options :**

51245267731. 1

51245267732. 2

51245267733. 3

51245267734. 4

**Question Number : 5 Question Id : 51245220376 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which one of the following does NOT form a component of HIV envelope?

1. Phosphatidylserine
2. Phosphatidylinositol
3. E4 protein
4. Sphingomyelin

**Options :**

51245267735. 1

51245267736. 2

51245267737. 3

51245267738. 4

**Question Number : 6 Question Id : 51245220377 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Plaque purification is one of the several methods to purify a virus wherein the virus replicates in layers of its host cell in turn resulting in the radial spread of the resultant virion particles from the infected cell to the surrounding cells. This results in formation of discrete visible clear zone or plaque from where the virus is further isolated and purified. Which of the following statements is INCORRECT with respect to viral plaques?

1. Animal viruses can be plaque purified using lawns of bacterial growth.
2. There is a possibility that a plaque might be derived from two or more virions.
3. Plaques can be used to determine the titer (number of viruses present)
4. Characteristic plaques are observed for specific viruses

**Options :**

51245267739. 1

51245267740. 2

51245267741. 3

51245267742. 4

**Question Number : 7 Question Id : 51245220378 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Viruses are too small with distinctive morphology and can be visualized using electron microscope. In order to understand a virus in terms of its structure, genetics, replication, life cycle and infection, availability of the virus in its pure form is a pre-requisite for a virologist. Which of the following statement is accurate with respect to virus purification?

1. Polyethylene glycol is not used for purification of the virus by rate zonal centrifugation.
2. In density gradient centrifugation method, different viruses can be separated based on the differences in their sedimentation rate.
3. Ethanol and glycogen are used in density gradient centrifugation method of virus purification to attain density gradience.
4. None of the above.

**Options :**

- 51245267743. 1
- 51245267744. 2
- 51245267745. 3
- 51245267746. 4

**Question Number : 8 Question Id : 51245220379 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

There are several viruses known to mankind. These viruses include animal viruses, human viruses, plant viruses, arthropod viruses and many others. As the more and more new viruses are being identified, appropriate classification of these viruses is necessary. Which of the following characteristic features of the viruses is NOT considered as a criterion for their classification?

1. Type of genomic material
2. Type of capsid
3. Size of the capsid
4. Presence or absence of envelope

**Options :**

- 51245267747. 1
- 51245267748. 2
- 51245267749. 3
- 51245267750. 4

**Question Number : 9 Question Id : 51245220380 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which one of the following does NOT belong to the taxonomical orders of International Committee on Taxonomy of Viruses (ICTV) classification system?

- 1. Tymovirales
- 2. Rotavirales
- 3. Ligamenvirales
- 4. Herpesvirales

**Options :**

- 51245267751. 1
- 51245267752. 2
- 51245267753. 3
- 51245267754. 4

**Question Number : 10 Question Id : 51245220381 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

As per David Baltimore's scheme of virus classification, viruses are classified into seven classes based on the characteristic nature of viruses. Which of the following statements is NOT true as per Baltimore classification?

1. Viruses containing positive sense single-stranded DNA are classified under a separate class.
2. Viruses containing positive sense single-stranded RNA are classified under a separate class.
3. Viruses containing negative sense single-stranded RNA are classified under a separate class.
4. Viruses containing double-stranded RNA are classified under a separate class.

**Options :**

- 51245267755. 1
- 51245267756. 2
- 51245267757. 3
- 51245267758. 4

**Question Number : 11 Question Id : 51245220382 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Match the following phages (**List I**) with respect to their genome (**List II**)

<b>List I</b>	<b>List II</b>
<b>Phages</b>	<b>Genome</b>
A. T4	I. ssDNA
B. $\phi$ X174	II. (+)ssRNA
C. MS2	III. dsDNA

Choose the **correct** answer from the options given below:

1. A - III, B - I, C - II
2. A - I, B - II, C - III
3. A - III, B - II, C - I
4. A - II, B - I, C - III



**Options :**

- 51245267759. 1
- 51245267760. 2
- 51245267761. 3
- 51245267762. 4

**Question Number : 12 Question Id : 51245220383 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Bacteriophages are classified based on their genetic material. The said classification groups bacteriophages into four groups namely (1) Phages with ssDNA; (2) Phages with dsDNA; (3) Phages with ssRNA and (4) Phages with dsRNA. In case of phages with dsDNA, there are subgroups of phages based on their host specificity.

Match the following phages (**List I**) with their respective bacterial host (**List II**)

<b>List I</b>	<b>List II</b>
<b>Phages</b>	<b>Bacterial Host</b>
A. T2 Phage	I. <i>Salmonella</i> species
B. P22 phage	II. <i>Haemophilus</i> species
C. HP1 phage	III. <i>Pseudoalteromonas</i> species
D. PM2 phage	IV. <i>Escherichia coli</i>

Choose the **correct** answer from the options given below:

- 1. A - IV, B - I, C - II, D - III
- 2. A - I, B - II, C - III, D - IV
- 3. A - IV, B - III, C - II, D - I
- 4. A - IV, B - II, C - I, D - III

**Options :**

- 51245267763. 1
- 51245267764. 2

51245267765. 3

51245267766. 4

**Question Number : 13 Question Id : 51245220384 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

With respect to the lysogenic cycle of bacteriophages, which of the following statements is INCORRECT?

1. The bacteriophage which enters lysogenic phase of replication is called a lysogen.
2. The bacteriophage which enters lysogenic phase of replication is called a temperate bacteriophage.
3. A prophage is a term used to describe a bacteriophage whose genome is inserted within the host genome.
4. The lysogenic cycle can be switched into lytic cycle by exposing the infected bacterium to ultraviolet radiation.

**Options :**

51245267767. 1

51245267768. 2

51245267769. 3

51245267770. 4

**Question Number : 14 Question Id : 51245220385 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which of the following represents temperate phage?

1. Mycoplasma phage L2
2. Phage CTX $\phi$
3.  $\lambda$  Phage
4. All of the above

**Options :**

- 51245267771. 1
- 51245267772. 2
- 51245267773. 3
- 51245267774. 4

**Question Number : 15 Question Id : 51245220386 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

T4 bacteriophage adsorbs on the cell wall of *Escherichia coli* using its tail fibers. Following adsorption, the phage injects its genome into the cytoplasm of the bacterium using tail sheath. How this step of genetic material entry does actually happens?

1. The tail sheath drills through the cell wall of *E. coli* by contraction.
2. The bacteriophage uses lytic enzyme to break down the host cell wall.
3. The bacteriophage breaks down the host cell wall using the tail sheath protein.
4. The bacteriophage introduces its genetic material into the bacterial cytoplasm via the host cell receptor used for specific adsorption.

**Options :**

- 51245267775. 1
- 51245267776. 2
- 51245267777. 3
- 51245267778. 4

**Question Number : 16 Question Id : 51245220387 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Match the following genes of lambda phage (**List I**) with their respective functions (**List II**)

<b>List I</b>	<b>List II</b>
<b>Genes of lambda phage</b>	<b>Functions</b>
A. <i>Stf</i>	I. Involved in prophage excision
B. <i>Xis</i>	II. Promotes annealing of complementary ssDNA strands during recombination
C. <i>rexA</i>	III. Encodes for tail fibres
D. <i>Bet</i>	IV. Blocks super infection of the host bacteria by other phages

Choose the **correct** answer from the options given below:

1. A - I, B - II, C - III, D - IV
2. A - III, B - I, C - IV, D - II
3. A - IV, B - III, C - II, D - I
4. A - III, B - IV, C - I, D - II

**Options :**

- 51245267779. 1
- 51245267780. 2
- 51245267781. 3
- 51245267782. 4

**Question Number : 17 Question Id : 51245220388 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Find the INCORRECT statement in the following with respect to lytic cycle of a bacteriophage.

1. Protein encoded by *N* gene of a lytic bacteriophage modifies host RNA polymerase to transcribe phage RNA downstream to other terminators including *tL1* and *tR1*.
2. *Ci* gene is associated with lysis of the host cell.
3. *Cro* gene is associated with expression of lytic genes.
4. None of the above

**Options :**

51245267783. 1  
51245267784. 2  
51245267785. 3  
51245267786. 4

**Question Number : 18 Question Id : 51245220389 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Match the following bacteriophages (**List I**) with their respective phenotypes (**List II**)

<b>List I</b>	<b>List II</b>
<b>Bacteriophages</b>	<b>Phenotypes</b>
A. Bacteriophage which has high specificity at strain level to infecting <i>E. coli</i>	I. $h^-$
B. Bacteriophage which lyses the host cell at a slow rate	II. $h^+$
C. Bacteriophage which lyses the host cell at a rapid rate	III. $r^+$
D. Bacteriophage which can infect different strains of <i>E. coli</i>	IV. $r^-$

Choose the **correct** answer from the options given below:

1. A - I, B - II, C - III, D - IV
2. A - IV, B - II, C - III, D - I
3. A - II, B - III, C - IV, D - I
4. A - II, B - III, C - I, D - IV

**Options :**

- 51245267787. 1
- 51245267788. 2
- 51245267789. 3
- 51245267790. 4

**Question Number : 19 Question Id : 51245220390 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which strategy is employed in developing phage cocktail against *Acinetobacter baumannii* ?

- 1. Phages which target growth
- 2. Phages which target the virulence factor
- 3. Phages which makes the host sensitive to other viruses
- 4. All of the above

**Options :**

- 51245267791. 1
- 51245267792. 2
- 51245267793. 3
- 51245267794. 4

**Question Number : 20 Question Id : 51245220391 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which of the following statement is INCORRECT with respect to phenotype mixing between T2 and T4 bacteriophage?

- 1. T2 bacteriophage infects only *E. coli* strain B
- 2. T4 bacteriophage infects only *E. coli* strain B/2
- 3. T2 bacteriophage cannot infect *E. coli* strain B/4
- 4. None of the above

**Options :**

51245267795. 1

51245267796. 2

51245267797. 3

51245267798. 4

**Question Number : 21 Question Id : 51245220392 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Viral multiplication mechanism involves multiple steps starting from infecting the host to release of multiplied virion particles which are capable of infecting another uninfected host. Which of the following statements is INCORRECT with respect to this multistep process?

1. The virus replication in host cell is defined by a typical one-step growth curve.
2. Bacteriophages take approximately an hour to complete one cycle of replication.
3. During the maturation period, genetic material and protein coats complex is formed within the host cell.
4. The maturation period in the one-step growth curve is also called eclipse period.

**Options :**

51245267799. 1

51245267800. 2

51245267801. 3

51245267802. 4

**Question Number : 22 Question Id : 51245220393 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Pick the correct order of events that happens within the host during a virus infection in sequence.

1. Adsorption-Penetration-Translation-Transcription-Genome replication-Virus Assembly-Exit
2. Adsorption-Penetration-Genome replication-Transcription-Translation-Virus Assembly-Exit
3. Adsorption-Penetration-Transcription-Translation-Genome replication-Virus Assembly-Exit
4. Adsorption-Penetration-Translation-Genome replication-Transcription-Virus Assembly-Exit

**Options :**

- 51245267803. 1
- 51245267804. 2
- 51245267805. 3
- 51245267806. 4

**Question Number : 23 Question Id : 51245220394 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which virus encodes its own DNA polymerase and uses the protein primer for the initiation of replication?

1. Adenovirus
2. Parvovirus
3. Herpes virus
4. Rotavirus

**Options :**

- 51245267807. 1
- 51245267808. 2
- 51245267809. 3
- 51245267810. 4

**Question Number : 24 Question Id : 51245220395 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**



Which virus uses cell primase for synthesis of RNA primers during replication of its genome?

1. Polyoma virus
2. Herpes virus
3. T7 phage
4. T5 phage

**Options :**

- 51245267811. 1
- 51245267812. 2
- 51245267813. 3
- 51245267814. 4

**Question Number : 25 Question Id : 51245220396 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Fill up the blank

The retroviruses and para-retroviruses encode a reverse transcriptase to transcribe from RNA to DNA, and use the host cell \_\_\_\_\_ to transcribe from DNA to RNA.

1. RNA polymerase I
2. RNA polymerase II
3. RNA polymerase III
4. Primase

**Options :**

- 51245267815. 1
- 51245267816. 2
- 51245267817. 3
- 51245267818. 4

**Question Number : 26 Question Id : 51245220397 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 1 Wrong Marks : 0**

Upon successful invasion into the host cell, a virus genetic material utilizes host cell machinery to undergo replication. In this process of replication, which of the following proteins are NOT expressed by the virus?

1. DNA polymerase to copy the virus genetic material
2. Capsid protein to form protein coat around the genetic material
3. Chaperonin to fold the synthesized capsid proteins
4. Lysozyme to weaken the cell wall and enable release of virus particles.

**Options :**

- 51245267819. 1
- 51245267820. 2
- 51245267821. 3
- 51245267822. 4

**Question Number : 27 Question Id : 51245220398 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Fill up the blank

During an infection, infectious virion particles resulting from replication of \_\_\_\_\_ buds out from an apical surface.

1. Vesicular stomatitis virus
2. Tobacco mosaic virus
3. Influenza virus
4. Rhabdovirus

**Options :**

- 51245267823. 1
- 51245267824. 2
- 51245267825. 3

51245267826. 4

**Question Number : 28 Question Id : 51245220399 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Antibodies are produced by vertebrates against viruses as an adaptive immune response. Which of the following statements with respect to these anti-viral antibodies is INCORRECT?

1. Antiviral antibodies are produced by T lymphocytes.
2. IgG, IgM and IgA antibodies act against virus.
3. Natural killer cells and macrophages possess Fc region of IgG on their surface.
4. Antiviral antibodies are produced against viral antigens.

**Options :**

51245267827. 1

51245267828. 2

51245267829. 3

51245267830. 4

**Question Number : 29 Question Id : 51245220400 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Match **List I** with **List II**

<b>List I</b>	<b>List II</b>
A. T helper cells	I. IgG Fc receptor
B. Cytotoxic T cells	II. CD4 receptor
C. Natural killer cells	III. Interferon
D. Neutrophils	IV. CD8 receptor

Choose the **correct** answer from the options given below:

1. A - I, B - II, C - III, D - IV
2. A - II, B - IV, C - III, D - I
3. A - IV, B - II, C - III, D - I
4. A - II, B - III, C - IV, D - I

**Options :**

51245267831. 1

51245267832. 2

51245267833. 3

51245267834. 4

**Question Number : 30 Question Id : 51245220401 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Fill up the blanks

RNA interference is a process adopted by host in response to viral infection, wherein the viral RNA is destroyed by cleaving the \_\_\_\_\_ into fragments of \_\_\_\_\_ length by an enzyme called \_\_\_\_\_.

1. mRNA; 20 to 30 bp; dicer
2. dsRNA; 20 to 30 bp; dicer
3. mRNA; 21 to 25 bp; dicer
4. dsRNA; 21 to 25 bp; dicer

**Options :**

- 51245267835. 1
- 51245267836. 2
- 51245267837. 3
- 51245267838. 4

**Question Number : 31 Question Id : 51245220402 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Adolf Mayer, Dmitri Ivanovsky and Wendel Meredith Stanley are associated with the discovery of

1. Tobacco Mosaic Virus
2. Foot and Mouth Disease Virus
3. Rhabdovirus
4. Tomato Mosaic Virus

**Options :**

- 51245267839. 1
- 51245267840. 2
- 51245267841. 3
- 51245267842. 4

**Question Number : 32 Question Id : 51245220403 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Fill up the blanks

A single tobacco mosaic virus particle is composed of \_\_\_\_\_ copies of the coat protein; enveloping about \_\_\_\_\_ nucleotides of its RNA.

1. 2500; 6400
2. 2130; 6400
3. 2500; 7300
4. 2130; 7300

**Options :**

- 51245267843. 1
- 51245267844. 2
- 51245267845. 3
- 51245267846. 4

**Question Number : 33 Question Id : 51245220404 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which of the following viruses does NOT belong to *Herpesviridae*?

1. Herpes Simplex Virus Type 1
2. Variola virus
3. Cytomegalovirus
4. Epstein Barr virus

**Options :**

- 51245267847. 1
- 51245267848. 2
- 51245267849. 3

51245267850. 4

**Question Number : 34 Question Id : 51245220405 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Fill up the blanks

In the process of replication, Herpes virus enters host cell via \_\_\_\_ receptor and releases its genome into the nucleus. Within the nucleus, the genome gets \_\_\_\_\_ and gets accompanied with \_\_\_\_\_ protein to express immediate early genes.

1. Glycoprotein; linearized; DNA polymerase
2. Heparin sulfate; circularized; alpha-TIF
3. Heparin sulfate; integrated; Sp1
4. Glycoprotein; circularized; CTB protein

**Options :**

51245267851. 1

51245267852. 2

51245267853. 3

51245267854. 4

**Question Number : 35 Question Id : 51245220406 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Fill up the blank

The entry of polio virus into its host cell cytoplasm is facilitated by myristoylated amino terminal end of \_\_\_\_ protein of the virus.

1. VPg
2. VP1
3. VP0
4. VP4

**Options :**

- 51245267855. 1
- 51245267856. 2
- 51245267857. 3
- 51245267858. 4

**Question Number : 36 Question Id : 51245220407 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which of the following virus is oncogenic DNA virus?

1. HPV
2. HBV
3. EBV
4. All of the above

**Options :**

- 51245267859. 1
- 51245267860. 2
- 51245267861. 3
- 51245267862. 4

**Question Number : 37 Question Id : 51245220408 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**



**Correct Marks : 1 Wrong Marks : 0**

Where the assembly of mature pox virus takes place in the host cell?

1. Cytoplasm
2. Nucleus
3. Nuclear pore
4. Golgi complex

**Options :**

- 51245267863. 1
- 51245267864. 2
- 51245267865. 3
- 51245267866. 4

**Question Number : 38 Question Id : 51245220409 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which of the following statements is INCORRECT with respect to Hepatitis B Virus (HBV)?

1. HBV infects humans and birds.
2. HBV belongs to class VII of virus under Baltimore classification of viruses.
3. HBV is not transmitted from mother to baby.
4. None of the above

**Options :**

- 51245267867. 1
- 51245267868. 2
- 51245267869. 3
- 51245267870. 4

**Question Number : 39 Question Id : 51245220410 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which of the following statement is CORRECT with respect to HBV?

1. The 5' end of the HBV genome is covalently linked with the capped RNA at the short strand.
2. The C terminus of HBV genome is arginine rich.
3. HBV genome encodes for multiple proteins by translating the open reading frames in an overlapping fashion.
4. All of the above

**Options :**

- 51245267871. 1
- 51245267872. 2
- 51245267873. 3
- 51245267874. 4

**Question Number : 40 Question Id : 51245220411 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which of the following statement is INCORRECT with respect to the structure of a retrovirus?

1. During its replication, retrovirus copies a molecule of host transfer RNA to its genome.
2. Gag protein is a structural protein.
3. Nucleocapsid protein binds directly to the virion RNA.
4. Transmembrane protein and surface protein of a retrovirus are linked via covalent interactions.

**Options :**

- 51245267875. 1
- 51245267876. 2
- 51245267877. 3
- 51245267878. 4

**Question Number : 41 Question Id : 51245220412 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Match the following scientists (**List I**) with their respective contribution to the field of virology (**List II**)

<b>List I</b>	<b>List II</b>
<b>Scientists</b>	<b>Contribution</b>
A. Edward Jenner	I. Infection of tobacco plant with TMV
B. Charles Chamberland	II. Electron microscopy image of influenza virus
C. Ralph W.G. Wyckoff	III. Developed porcelain bacterial filter
D. Dmitri Ivanowski	IV. Variolation procedure for small pox

Choose the **correct** answer from the options given below:

1. A - IV, B - III, C - II, D - I
2. A - I, B - II, C - III, D - IV
3. A - IV, B - II, C - III, D - I
4. A - IV, B - II, C - I, D - III

**Options :**

51245267879. 1  
51245267880. 2  
51245267881. 3  
51245267882. 4

**Question Number : 42 Question Id : 51245220413 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Match **List I** with **List II**

<b>List I</b>	<b>List II</b>
A. Light microscopy	I. 3D visualization of viruses using cryo-electron microscope
B. Phosphotungstic acid	II. Atomic force microscope
C. Tomograms	III. Can be used to visualize cytopathic effect in virus infected cells
D. Structural resolution of capsid protein	IV. Used for negative staining of viruses and visualization under electron microscope

Choose the **correct** answer from the options given below:

1. A - III, B - IV, C - I, D - II
2. A - III, B - I, C - IV, D - II
3. A - III, B - I, C - II, D - IV
4. A - I, B - II, C - IV, D - III

**Options :**

51245267883. 1  
51245267884. 2  
51245267885. 3  
51245267886. 4

**Question Number : 43 Question Id : 51245220414 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

What is the effect of dimethyl sulfoxide in cell culture method of virus propagation?

1. Enhanced virus infection
2. Increased plaque size
3. Increased virus yield
4. All of the above

**Options :**

- 51245267887. 1
- 51245267888. 2
- 51245267889. 3
- 51245267890. 4

**Question Number : 44 Question Id : 51245220415 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Treatment of cells with which of the following induces formation of heat shock factors?

- 1. Polypeptides
- 2. Arsenite
- 3. DMSO
- 4. Cytomegalovirus

**Options :**

- 51245267891. 1
- 51245267892. 2
- 51245267893. 3
- 51245267894. 4

**Question Number : 45 Question Id : 51245220416 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

What is the disadvantage of the electron microscopy used to detect the virus?

- 1. It is a costly instrument
- 2. Maintenance of the instrument
- 3. Requirement of skilled operator to operate the instrument
- 4. All of the above

**Options :**

- 51245267895. 1

51245267896. 2

51245267897. 3

51245267898. 4

**Question Number : 46 Question Id : 51245220417 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which one of the following technique is NOT involved in measurement of viral infectivity?

1. Immunohistochemistry
2. Fluorescence foci assay
3. Ultracentrifugation
4. Agglutination assay

**Options :**

51245267899. 1

51245267900. 2

51245267901. 3

51245267902. 4

**Question Number : 47 Question Id : 51245220418 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which of the following reagent is used in immunofluorescence assay?

1. Methanol
2. Alexa Fluor 488
3. 4,6-diamidino-2-phenylindole
4. All of the above

**Options :**

51245267903. 1

51245267904. 2

51245267905. 3

51245267906. 4

**Question Number : 48 Question Id : 51245220419 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

What is the purpose of using alkaline sodium hydroxide in southern blotting technique?

1. Isolate DNA from viral particle
2. Create single strands of DNA
3. To transfer DNA from agarose gel onto nylon membrane
4. To determine signals in autoradiography

**Options :**

- 51245267907. 1
- 51245267908. 2
- 51245267909. 3
- 51245267910. 4

**Question Number : 49 Question Id : 51245220420 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Pulse-chase technique is used to study

1. Series of events in a virus replication
2. Series of events in a cellular process
3. Series of events in a virus packaging
4. All of the above

**Options :**

- 51245267911. 1
- 51245267912. 2
- 51245267913. 3
- 51245267914. 4

**Question Number : 50 Question Id : 51245220421 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which one of the following reagents is NOT a fluorescent dye?

1. Alexa Fluor 488 hydrazide
2. Fluorescein isothiocyanate
3. Texas red
4. Biotin

**Options :**

- 51245267915. 1
- 51245267916. 2
- 51245267917. 3
- 51245267918. 4

**Question Number : 51 Question Id : 51245220422 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which among the following relies upon only passive transmission to infect the host?

1. Fungi
2. Nematode
3. Virus
4. None of the above

**Options :**

- 51245267919. 1
- 51245267920. 2
- 51245267921. 3
- 51245267922. 4

**Question Number : 52 Question Id : 51245220423 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**



What is the mode of transmission of Red Clover Mottle Virus?

1. Birds and Nematode
2. Mowing machine and mite
3. Air and water
4. All of the above

**Options :**

- 51245267923. 1
- 51245267924. 2
- 51245267925. 3
- 51245267926. 4

**Question Number : 53 Question Id : 51245220424 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Purification of viruses employs which of the following technique?

1. Chromatography
2. Ultra-centrifugation
3. Electrophoresis
4. All of the above

**Options :**

- 51245267927. 1
- 51245267928. 2
- 51245267929. 3
- 51245267930. 4

**Question Number : 54 Question Id : 51245220425 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

What is the principle of electrophoresis?

1. Migration of charged molecules in a magnetic field based on size
2. Migration of charged molecules in an electric field based on size and mass
3. Migration of charged molecules in a magnetic field based on mass only
4. Migration of charged molecules in an electromagnetic field based on size only

**Options :**

- 51245267931. 1
- 51245267932. 2
- 51245267933. 3
- 51245267934. 4

**Question Number : 55 Question Id : 51245220426 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which virus was initially purified using calcium phosphate column chromatography?

1. Lettuce Necrotic Yellow Virus (LNYV)
2. Tobacco mosaic virus
3. Cowpea Mosaic Virus (CPMV)
4. None of the above

**Options :**

- 51245267935. 1
- 51245267936. 2
- 51245267937. 3
- 51245267938. 4

**Question Number : 56 Question Id : 51245220427 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which of the following virus can be detected by nested-PCR?

1. Prunus Necrotic Ring Spot Virus (PNRSV)
2. Phocine Distemper Virus (PDV)
3. Plum Pox Virus (PPV)
4. All of the above

**Options :**

- 51245267939. 1
- 51245267940. 2
- 51245267941. 3
- 51245267942. 4

**Question Number : 57 Question Id : 51245220428 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Can UV absorption spectrum be used to detect the virus?

1. No, the virus cannot be detected using UV spectrum
2. Yes, it determines the ratio of protein to nucleic acid present in the virus
3. No, viruses' protein and nucleic acid component are not related
4. There is no relation between UV absorption spectrum and virus

**Options :**

- 51245267943. 1
- 51245267944. 2
- 51245267945. 3
- 51245267946. 4

**Question Number : 58 Question Id : 51245220429 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Baculovirus which is widely used as a biopesticide replicate in which part of the host cell?

1. Nucleus
2. Cytoplasm
3. Endoplasmic reticulum
4. None of the above

**Options :**

- 51245267947. 1
- 51245267948. 2
- 51245267949. 3
- 51245267950. 4

**Question Number : 59 Question Id : 51245220430 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Viruses which infect insects are generally referred to as

1. Entamophagous
2. Entamological
3. Entomopathogenic
4. None of the above

**Options :**

- 51245267951. 1
- 51245267952. 2
- 51245267953. 3
- 51245267954. 4

**Question Number : 60 Question Id : 51245220431 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which of the following insect is infected by Granulosis Virus?

1. *Cydia pomonella* (Apple codling moth)
2. *Plutella xylostella* (Diamond back moth)
3. *Spodoptera littoralis* (Cotton leafworm)
4. All of the above

**Options :**

- 51245267955. 1
- 51245267956. 2
- 51245267957. 3
- 51245267958. 4

**Question Number : 61 Question Id : 51245220432 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which of the following is responsible for crown like structure in Coronavirus?

1. Spikes protruding from the surface
2. Genome of the virus
3. Nucleocapsid
4. Envelope

**Options :**

- 51245267959. 1
- 51245267960. 2
- 51245267961. 3
- 51245267962. 4

**Question Number : 62 Question Id : 51245220433 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Influenza viruses are subdivided into subtypes based on

1. Hemagglutinin
2. Neuaminidase
3. Both 1 and 2
4. None of the above

**Options :**

51245267963. 1  
51245267964. 2  
51245267965. 3  
51245267966. 4

**Question Number : 63 Question Id : 51245220434 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Match the following viral diseases (**List I**) with their characteristic symptom (**List II**)

<b>List I</b>	<b>List II</b>
<b>Viral diseases</b>	<b>Characteristic Symptom</b>
A. Measles	I. Red spots on the skin
B. Mumps	II. Pain in the swollen salivary gland
C. Rubella	III. Mild fever, red rashes and swollen lymph node
D. Human papilloma virus	IV. Genital warts

Choose the **correct** answer from the options given below:

1. A - I, B - II, C - III, D - IV
2. A - IV, B - III, C - II, D - I
3. A - I, B - III, C - II, D - IV
4. A - IV, B - II, C - III, D - I

**Options :**

51245267967. 1

51245267968. 2

51245267969. 3

51245267970. 4

**Question Number : 64 Question Id : 51245220435 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which is the best method for prevention of Mumps?

1. Quarantine
2. MMR vaccine
3. Gargling with salt water
4. Systemic antibiotics

**Options :**

51245267971. 1

51245267972. 2

51245267973. 3

51245267974. 4

**Question Number : 65 Question Id : 51245220436 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

How is the mumps virus spread from an infected individual?

1. Fecal material
2. Saliva and respiratory droplets
3. Insect bites
4. Blood

**Options :**

51245267975. 1

51245267976. 2

51245267977. 3

51245267978. 4

**Question Number : 66 Question Id : 51245220437 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Match the following Diseases (**List I**) with their possible likely cures (**List II**) given

List I	List II
Diseases	Cures
A. Herpes	I. OPV
B. Polio	II. Valacyclovir
C. Rabies	III. SPV
D. Small pox	IV. Post-exposure prophylaxis (PEP)

Choose the **correct** answer from the options given below:

1. A - I, B - II, C - III, D - IV
2. A - II, B - I, C - IV, D - III
3. A - II, B - IV, C - I, D - III
4. A - I, B - III, C - II, D - IV

**Options :**

51245267979. 1

51245267980. 2

51245267981. 3

51245267982. 4

**Question Number : 67 Question Id : 51245220438 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**



Untreated Rabies has got ..... percent mortality rate.

1. 10-20 %
2. 40-50 %
3. 60-65 %
4. 95-99 %

**Options :**

51245267983. 1  
51245267984. 2  
51245267985. 3  
51245267986. 4

**Question Number : 68 Question Id : 51245220439 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Kaposi sarcoma, lymphoma and candidiasis are associated with infection of which virus?

1. HIV
2. DEN-2
3. Yellow fever
4. None of the above

**Options :**

51245267987. 1  
51245267988. 2  
51245267989. 3  
51245267990. 4

**Question Number : 69 Question Id : 51245220440 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which of the following is used as non-nucleoside reverse transcriptase inhibitor for treatment of HIV?

1. Etravirine
2. Nevirapine
3. Efavirenz
4. All of the above

**Options :**

- 51245267991. 1
- 51245267992. 2
- 51245267993. 3
- 51245267994. 4

**Question Number : 70 Question Id : 51245220441 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Dengue virus is mainly transmitted by bites of an infected ..... mosquito.

1. Female *Aedes aegypti*
2. Female Anopheles
3. Female *Haemagogus*
4. Male *Haemagogus*

**Options :**

- 51245267995. 1
- 51245267996. 2
- 51245267997. 3
- 51245267998. 4

**Question Number : 71 Question Id : 51245220442 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Animal viruses can be cultivated in the laboratory using following animals except .....

1. Mice
2. Guinea pig
3. Rabbits
4. Human

**Options :**

- 51245267999. 1
- 51245268000. 2
- 51245268001. 3
- 51245268002. 4

**Question Number : 72 Question Id : 51245220443 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Polio virus is made up of ..... and .....

1. ssRNA and protein capsid
2. ds RNA genome and capsid
3. ssDNA and protein capsid
4. ds DNA genome and capsid

**Options :**

- 51245268003. 1
- 51245268004. 2
- 51245268005. 3
- 51245268006. 4

**Question Number : 73 Question Id : 51245220444 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which is the first human oncogene identified?

1. SRC
2. Ras
3. EGFR
4. None of the above

**Options :**

- 51245268007. 1
- 51245268008. 2
- 51245268009. 3
- 51245268010. 4

**Question Number : 74 Question Id : 51245220445 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

What are the types of deletions which are important in oncogenic mutations?

1. Interstitial and terminal deletion
2. Neutral deletion
3. Silent deletion
4. None of the above

**Options :**

- 51245268011. 1
- 51245268012. 2
- 51245268013. 3
- 51245268014. 4

**Question Number : 75 Question Id : 51245220446 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Human syndrome *cri du chat* is a condition where .....

1. The tip of the short arm of chromosome 2 undergoes a heterozygous deletion
2. The tip of the short arm of chromosome 5 undergoes a heterozygous deletion
3. The tip of the short arm of chromosome 1 undergoes a heterozygous deletion
4. None of the above

**Options :**

- 51245268015. 1
- 51245268016. 2
- 51245268017. 3
- 51245268018. 4

**Question Number : 76 Question Id : 51245220447 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which is the first plant product proved to be a carcinogen?

1. Cantharidin
2. Pyrrolizidine alkaloids
3. Sanguinarine
4. Achromycin

**Options :**

- 51245268019. 1
- 51245268020. 2
- 51245268021. 3
- 51245268022. 4

**Question Number : 77 Question Id : 51245220448 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Aminozoic colorants, aromatic hydrocarbons, aromatic amines, urethane and aflatoxins are classified as

1. Noncarcinogens
2. Procarcinogens
3. Cocarcinogens
4. None of the above

**Options :**

- 51245268023. 1
- 51245268024. 2
- 51245268025. 3
- 51245268026. 4

**Question Number : 78 Question Id : 51245220449 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Prevention of viral disease can be achieved by the following except .....

1. Preventing or early treatments for animal bites
2. Avoiding usage of used syringes
3. Avoiding unprotected sexual contact
4. Rigorous physical exercise

**Options :**

- 51245268027. 1
- 51245268028. 2
- 51245268029. 3
- 51245268030. 4

**Question Number : 79 Question Id : 51245220450 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which is the virus responsible for the condition also called as 'Kissing disease'?

1. Hepatitis B virus
2. Human herpes virus
3. Epstein- Barr virus
4. HIV

**Options :**

51245268031. 1  
51245268032. 2  
51245268033. 3  
51245268034. 4

**Question Number : 80 Question Id : 51245220451 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

What is the antiviral and antitumor factor produced naturally by the human body?

1. Interferons
2. Chaperonins
3. Chaperons
4. None of the above

**Options :**

51245268035. 1  
51245268036. 2  
51245268037. 3  
51245268038. 4

**Question Number : 81 Question Id : 51245220452 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

How do the NK cells recognize a virus-infected cell?

1. Recognize a change in surface molecules of virus-infected cells
2. Recognize change in the expression pattern
3. Change in the structure of the nucleus
4. Change in the number nucleus

**Options :**

51245268039. 1

51245268040. 2

51245268041. 3

51245268042. 4

**Question Number : 82 Question Id : 51245220453 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which type of antibody is present in the mucosal layer?

1. IgG
2. IgE
3. IgM
4. IgA

**Options :**

51245268043. 1

51245268044. 2

51245268045. 3

51245268046. 4

**Question Number : 83 Question Id : 51245220454 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**



Interferons are a group of .....

1. Conjugate lipids
2. Conjugate proteins
3. Conjugate RNAs
4. None of the above

**Options :**

- 51245268047. 1
- 51245268048. 2
- 51245268049. 3
- 51245268050. 4

**Question Number : 84 Question Id : 51245220455 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

What is the contribution of Alick Isaacs and Jean Lindemann?

1. Discovery of interleukins
2. Discovery of prions
3. Discovery of interferon
4. Discovery of virusoids

**Options :**

- 51245268051. 1
- 51245268052. 2
- 51245268053. 3
- 51245268054. 4

**Question Number : 85 Question Id : 51245220456 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Based on the research studies Interferon can be applied to .....

1. Induce apoptosis in malignant cells
2. Regulate cell proliferation
3. Regulate cell differentiation
4. All of the above

**Options :**

- 51245268055. 1
- 51245268056. 2
- 51245268057. 3
- 51245268058. 4

**Question Number : 86 Question Id : 51245220457 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Antiviral drugs, mainly targets viral ..... and .....

1. Proteins and enzymes
2. DNA and RNA
3. Lipids and Proteins
4. None of the above

**Options :**

- 51245268059. 1
- 51245268060. 2
- 51245268061. 3
- 51245268062. 4

**Question Number : 87 Question Id : 51245220458 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

What is the mode of action of antiinfluenza drugs tamiflu and relenza?

1. Inhibits neuraminidase
2. Inhibits haemagglutinin
3. Inhibits viral replication
4. All of the above

**Options :**

- 51245268063. 1
- 51245268064. 2
- 51245268065. 3
- 51245268066. 4

**Question Number : 88 Question Id : 51245220459 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Who coined the term Vaccination?

1. Edward Jenner
2. Louis Pasteur
3. Alexander Fleming
4. Dr. Jonas Salk

**Options :**

- 51245268067. 1
- 51245268068. 2
- 51245268069. 3
- 51245268070. 4

**Question Number : 89 Question Id : 51245220460 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which of the following is the advantage of the DNA vaccine?

1. Peptides are presented by class I MHC molecules
2. Proteins are present in a native conformation
3. Expression of the foreign protein continues for a specific period, potentially leading to a better immune response
4. All of the above

**Options :**

- 51245268071. 1
- 51245268072. 2
- 51245268073. 3
- 51245268074. 4

**Question Number : 90 Question Id : 51245220461 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Secondary antibodies generated by the immune system against the antibody is called as

1. Idiotype
2. Antiidiotype
3. DNA vaccines
4. All of the above

**Options :**

- 51245268075. 1
- 51245268076. 2
- 51245268077. 3
- 51245268078. 4

**Question Number : 91 Question Id : 51245220462 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Compared to germline gene therapy, somatic gene therapy has following drawback

1. Requires repeated treatment over the course of life span to maintain the therapeutic effect
2. It is passed onto to the next generation
3. Gene transfer will occur in all the cells of developing embryo
4. All of the above

**Options :**

- 51245268079. 1
- 51245268080. 2
- 51245268081. 3
- 51245268082. 4

**Question Number : 92 Question Id : 51245220463 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Gene therapy is found effective against which of the following disease?

1. Iatrogenic immunodeficiency
2. Severe combined immunodeficiency syndrome
3. Acquired immunodeficiency syndrome
4. All of the above

**Options :**

- 51245268083. 1
- 51245268084. 2
- 51245268085. 3
- 51245268086. 4

**Question Number : 93 Question Id : 51245220464 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which of the following is a non-viral vector-mediated gene transfer?

1. Particle bombardment method
2. Lipid-mediated gene transfer
3. PEG mediated gene transfer
4. All of the above

**Options :**

- 51245268087. 1
- 51245268088. 2
- 51245268089. 3
- 51245268090. 4

**Question Number : 94 Question Id : 51245220465 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

What is the type of gene therapy where cells are modified outside the body and then transplanted back into the body?

1. *In silico* strategy
2. *Ex vivo* strategy
3. *In vivo* strategy
4. None of the above

**Options :**

- 51245268091. 1
- 51245268092. 2
- 51245268093. 3
- 51245268094. 4

**Question Number : 95 Question Id : 51245220466 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which technique involves display of large peptide and protein libraries on the surface of filamentous phage?

1. Germline therapy
2. Phage display technology
3. Phage therapy
4. All of the above

**Options :**

- 51245268095. 1
- 51245268096. 2
- 51245268097. 3
- 51245268098. 4

**Question Number : 96 Question Id : 51245220467 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

What is the major reservoir of the infective Nipah viruses?

1. Birds belonging to the genus *Aquila*.
2. Fruit bats belonging to the genus *Pteropus*
3. Mosquitoes belong to the family *Culicidae*.
4. All of the above

**Options :**

- 51245268099. 1
- 51245268100. 2
- 51245268101. 3
- 51245268102. 4

**Question Number : 97 Question Id : 51245220468 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Lassa virus belongs to which family of viruses?

1. *Coronaviridae*
2. *Filoviridae*
3. *Paramyxoviridae*
4. *Arenaviridae*

**Options :**

- 51245268103. 1
- 51245268104. 2
- 51245268105. 3
- 51245268106. 4

**Question Number : 98 Question Id : 51245220469 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**

Which one of the following is NOT a carrier vehicle used in gene therapy?

1. Adenovirus
2. Retrovirus
3. Lysosomes
4. Plasmid DNA

**Options :**

- 51245268107. 1
- 51245268108. 2
- 51245268109. 3
- 51245268110. 4

**Question Number : 99 Question Id : 51245220470 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Correct Marks : 1 Wrong Marks : 0**



The major disadvantage of Adenovirus as gene therapeutic agent is .....

1. They are highly immunogenic
2. Obligate intracellular parasites
3. Efficiently transfer viral DNA into host cell
4. Possibility of insertion of desired genes

**Options :**

- 51245268111. 1
- 51245268112. 2
- 51245268113. 3
- 51245268114. 4

**Question Number : 100 Question Id : 51245220471 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 1 Wrong Marks : 0**

**Options :**

- 51245268115. 1
- 51245268116. 2
- 51245268117. 3
- 51245268118. 4