

**Que-1 Consider the following statements about Oncolytic viruses**

1- Oncolytic viruses (OVs) are viruses that selectively target and kill cancer cells while sparing normal ones.

2- Oncolytic viruses are thought not only to cause direct destruction of the tumour cells, but also to stimulate host anti-tumour immune system responses.

3- The first oncolytic virus to be approved by a regulatory agency was a genetically modified adenovirus named H101 by Shanghai Sunway Biotech.

Which of the following given above is/are correct

- a) 2 only      b) 1 and 3 only  
c) 1, 2 and 3      d) 2 and 3 only

**Que-2 With reference to Port wine stain, consider the following statements**

1- A port wine stain is caused by an abnormal development of blood vessels.

2- This sometimes called a capillary malformation, due to a mutation early in the pregnancy when the baby is developing in the womb.

3- Port wine stains are the same as a similar birthmark that is known as 'strawberry hemangiomas'.

Which of the following given above is/are correct

- a) 1 and 2 only      b) 1 and 3 only  
c) 1, 2 and 3      d) 3 only

**Que-3 With reference to Electricity (Amendment) Bill 2022, consider the following statements**

1- The government intends to bring in the principle of open access — which will allow consumers the right to choose their electricity provider, regardless of who controls the physical infrastructure in their locality or state.

2- The Bill will also amend Section 62 to allow graded revision in tariff after every five year.

3- The proposed amendment to Sections 42 and 14 of the Electricity Act will allow the use of distribution networks by all licensees "under provisions of non-discriminatory open access".

Which of the following given above is/are correct

- a) 1 and 2 only      b) 1 and 3 only  
c) 1, 2 and 3      d) 3 only

**Que-4 With reference to University Laws (Amendment) Bill, 2022, consider the following statements about**

1- It alters the composition of the search-cum-selection committee to appoint Vice Chancellors and effectively provide the State government greater leverage in the process.

2- Its passage will enhance the appointment age of Vice Chancellors to 65 years.

3- It increase the strength of the selection committee to ten (from the existing five).

Which of the following given above is/are correct

- a) 1 and 2 only      b) 1 only  
c) 1, 2 and 3      d) 2 and 3 only
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**Que-5 Consider the following statements about Single-use plastic**

1- Plastic waste has drastic impacts on the environment and human health.

2- There is a greater likelihood of single-use plastic products ending up in the sea than reusable ones.

3- India piloted a resolution on single-use plastics pollution at the 4th United Nations Environment Assembly in 2019, recognising the urgent need for the global community to address this issue.

Which of the following given above is/are correct

- a) 1 only      b) 1 and 3 only  
c) 1, 2 and 3      d) 2 and 3 only
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**Que-6 What are the plastic waste management rules in India?**

1- Prohibited the manufacture, import, stocking, distribution, sale, and use of plastic carry bags whose thickness is less than 25 microns.

2- Plastic or PVC banners/ hoardings should have more than 100 microns in thickness, and non-woven plastic (polypropylene) must be more than 60 GSM (grams per square metre).

Which of the following given above is/are correct

- a) 1 only      b) 2 only  
c) Both 1 and 2      d) Neither 1 nor 2
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**Que-7 Consider the following statements about Stockholm Junior Water Prize**

1- This is an international competition where students of any age will present solutions to major water challenges.

2- The international Stockholm Junior Prize winner receives a USD 15,000 scholarship and a blue crystal sculpture.

3- Beginning in 1995, the award is given annually for an outstanding water project by a young person or a small group of young people at a ceremony held during the World Water Week in Stockholm.

Which of the following given above is/are correct

- a) 1 and 2 only      b) 1 and 3 only  
c) 1, 2 and 3      d) 2 and 3 only

**Que-8 Consider the following statements about Algae blooms**

1- They impact water quality and ecosystem diversity, cause dead zones and cost the fishing and tourism industries millions of dollars.

2- An algal bloom or algae bloom is a rapid increase or accumulation in the population of algae in freshwater or marine water systems.

3- Algal bloom commonly refers to the rapid growth of microscopic algae, not macroscopic unicellular algae.

Which of the following given above is/are correct

- a) 1 and 2 only      b) 1 only  
c) 1, 2 and 3      d) 2 and 3 only

**ANSWER**

1- (c)

- The first oncolytic virus to be approved by a national regulatory agency was genetically unmodified ECHO-7 strain enterovirus RIGVIR, which was approved in Latvia in 2004 for the treatment of skin melanoma; the approval was withdrawn in 2019. An oncolytic adenovirus, a genetically modified adenovirus named H101, was approved in China in 2005 for the treatment of head and neck cancer. In 2015, talimogene laherparepvec (OncoVex, T-VEC), an oncolytic herpes virus which is a modified herpes simplex virus, became the first oncolytic virus to be approved for use in the U.S. and European Union, for the treatment of advanced inoperable melanoma.

2- (a)

- ‘Port wine stain’, a name that derives from the way it looks.
- People who have the mark are usually born with it, most often on the face or arms. On more than six out of 10 occasions, port wine stains appear on the head or neck. The stain is for life, even though it may sometimes become thicker, darken, or develop a bumpy or ridged texture as the person grows older. On other occasions, the stain might fade or become lighter with age and time.
- Port wine stains are not the same as a similar birthmark that is known as ‘strawberry hemangiomas’. This is a non-cancerous tumour that is formed under the skin due to the clumping of blood vessels, and appears as a somewhat raised, dark red patch. This birthmark usually fades away by the time the child is about 10 years old.
- A port wine stain is caused by an abnormal development of blood vessels, sometimes called a capillary malformation, due to a mutation early in the pregnancy when the baby is developing in the womb. The reason for the mutation is not clear — it is not inherited, nor is it the result of something that has happened during the pregnancy.

3- (b)

- Under the Electricity (Amendment) Bill 2022, the government intends to bring in the principle of open access — which will allow consumers the right to choose their electricity provider, regardless of who controls the physical infrastructure in their locality or state. This would be similar to the way in which they can select their mobile and internet service providers. How will it do that? The Bill, which proposes significant changes in the power distribution sector, will allow multiple distribution licensees to function in an area. Having been cleared by the Union Cabinet, the Bill proposes to amend Sections 42 and 14 of the Electricity Act. Thus, it will enable competition in retail power distribution.
- The Bill will also amend Section 62 to allow graded revision in tariff over a year. The Bill also says that an appropriate commission will fix the maximum ceiling and minimum tariff. An amendment to Section 166 is also slated to strengthen the regulators and the functions carried out by them. However, the Centre has dropped the proposal of privatising state-owned power distribution companies.



- 4- (a)
- It increase the strength of the selection committee to five (from the existing three).
- 5- (c)
- Littered single-use plastic items have an adverse effect on both terrestrial and aquatic ecosystems. All countries face a major environmental challenge due to pollution caused by single-use plastic items. India piloted a resolution on single-use plastics pollution at the 4th United Nations Environment Assembly in 2019, recognising the urgent need for the global community to address this issue. This resolution was adopted at the UN Environment Assembly as an important step forward. In the recently concluded 5th session of the United Nations Environment Assembly in March 2022, India engaged constructively with all member states to develop a consensus on a resolution to drive global action against plastic pollution.
  - However, India is not the first country to ban single-use plastics. Bangladesh became the first country to ban thin plastic bags in 2002; New Zealand banned plastic bags in July 2019. China had issued a ban on plastic bags in 2020 with a phased implementation.
- As of July 2019, 68 countries have plastic bag bans with varying degrees of enforcement.
- 6- (b)
- With effect from September 30, 2021, the Plastic Waste Management Amendment Rules, 2021, prohibited the manufacture, import, stocking, distribution, sale, and use of plastic carry bags whose thickness is less than 75 microns. From December 31, 2022, plastic carry bags whose thickness is less than 120 microns will be banned.
  - The notification clearly mentioned that plastic or PVC banners/ hoardings should have more than 100 microns in thickness, and non-woven plastic (polypropylene) must be more than 60 GSM (grams per square metre). Non-woven plastic bags have a cloth-like texture but are counted among plastics. Still, plastic or PET bottles, counted among the most recyclable types of plastic, have been left out of the scope of the ban.
- 7- (d)
- A student from Canada has received the prestigious 2022 Stockholm Junior Water Prize for her research on how to treat and prevent harmful algae blooms.

- This is an international competition where students aged 15 to 20 years present solutions to major water challenges.

8- (a)

- An algal bloom or algae bloom is a rapid increase or accumulation in the population of algae in freshwater or marine water systems. It is often recognized by the discoloration in the water from the algae's pigments. The term algae encompasses many types of aquatic photosynthetic organisms, both macroscopic multicellular organisms like seaweed and microscopic unicellular organisms like cyanobacteria. Algal bloom commonly refers to the rapid growth of microscopic unicellular algae, not macroscopic algae. An example of a macroscopic algal bloom is a kelp forest.
  - Algal blooms are the result of a nutrient, like nitrogen or phosphorus from various sources (for example fertilizer runoff or other forms of nutrient pollution), entering the aquatic system and causing excessive growth of algae. An algal bloom affects the whole ecosystem.
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