

**EVA STALIN IAS ACADEMY – BEST IAS COACHING IN CHENNAI**

12/24, Muthurangan Muthali St, West Tambaram, Chennai - 600045

<https://www.evastalinasacademy.in/>

**Contact Number – +91-8678969915, +91-9940332851**

**Q1.** Consider the following statements:

- 1) The creation of antibodies against disease-causing virus guarantees immunity against a future attack from the same virus.
- 2) Serosurveys for the prevalence of novel coronavirus tests the presence of antibodies that are developed after an infection.

Which of the above statements is/are correct:

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

• **Solution:**

**(B)**

- It is sometimes thought that everyone who is infected with a disease-causing virus, and recovers, becomes immune to the disease, because they build antibodies against it.
- But that is not the case.
- While the creation of antibodies is necessary for the recovery process, it does not guarantee immunity against a future attack from the same virus.
- Immunity comes from what are known as “neutralising” or “protective” antibodies.
- The neutralising antibodies become special because they have the ability to thwart the entry of the same virus inside human bodies in the future.
- Serosurveys only look for the presence of antibodies in people.
- Their purpose is to find out whether a person has been infected with the virus or not, and through random testing of people, estimate the extent of spread of the disease, or prevalence, in a population group.

**Q2.** Consider the following statements:

- 1) The storage temperature for vaccines can vary, even if they are developed using same technology.
- 2) Polio Vaccine used in India’s immunisation programme are stored in room temperature.
- 3) mRNA vaccine can be developed that can be stored at warmer temperatures.

Which of the above statements is/are correct:

- A. 1 only

- B. 1, 3**
- C. 2, 3**
- D. 1, 2, 3**

• **Solution:**  
**(B)**

**Q3.** Consider the following statements regarding Guillain Barre Syndrome:

- 1) Guillain Barre Syndrome is a rare autoimmune disorder.
- 2) It is caused by bacteria or viral infection.
- 3) There are no reported cases of patients infected with Covid-19 showing the symptoms of Guillain Barre Syndrome.

Which of the above statements is/are correct:

- A. 1, 3**
- B. 2, 3**
- C. 1, 2**
- D. 1 only**

• **Solution:**  
**(C)**

- In a rare complication, some patients infected with Covid-19 have been found suffering from Guillain Barre Syndrome (GBS).
- In India, such cases have been reported since August.
- **What is Guillain Barre Syndrome?**
- It is a very rare autoimmune disorder.
- The immune system, in an attempt to kill the coronavirus, accidentally starts attacking the peripheral nervous system.
- GBS is caused by bacteria or viral infection.
- In the past, patients of Middle East Respiratory Syndrome showed GBS symptoms, as did those infected with Zika, HIV, Herpes virus and Campylobacter jejuni.

**Q4.** Consider the following statements regarding Kala-azar:

- 1) Kala-azar is a tropical disease characterised by irregular fever, weight loss, anaemia and swelling of the spleen and liver.

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- 2) It is caused by a protozoan Leishmania parasite and is transmitted to humans by the bite of infected female sandflies.
- 3) India has been successful in controlling the disease outbreak and accounts for about one-tenth of the total global cases.

Which of the above statements is/are correct:

- A. 1, 2
- B. 1, 3
- C. 2, 3
- D. 1, 2, 3

• **Solution:**

- (A)
- Kala-azar or visceral leishmaniasis (VL) is a tropical disease characterised by irregular fever, weight loss, anaemia and swelling of the spleen and liver.
  - It is caused by a protozoan Leishmania parasite and is transmitted to humans by the bite of infected female sandflies.
  - According to the World Health Organisation (WHO), globally, about 7 to 10 lakh new cases occur annually.
  - India accounts for about two-thirds of the total global cases, and the disease is endemic to Bihar, Jharkhand, Uttar Pradesh and West Bengal.
  - An initiative was launched by WHO to eliminate VL as a public health problem from the South East Asia region by 2020.
  - The deadline has now been extended to 2023.

**Q5.** At any time after the expiration of three years from the date of the grant of a patent, any person interested may make an application for grant of compulsory licence on patent on which of the following grounds:

- 1) The reasonable requirements of the public with respect to the patented invention have not been satisfied.
- 2) The patented invention is not available to the public at a reasonably affordable price.
- 3) The patented invention is worked in the territory of India by a non-Indian pharmaceutical company.

Select the correct answer code:

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- A. 1, 2
- B. 1, 3
- C. 2, 3 d
- D. 1, 2, 3

• **Solution:**  
(A)

- At any time after the expiration of three years from the date of the grant of a patent, any person interested may make an application to the Controller for grant of compulsory licence on patent on any of the following grounds, namely
  - ✓ that the reasonable requirements of the public with respect to the patented invention have not been satisfied, or
  - ✓ that the patented invention is not available to the public at a reasonably affordable price, or
  - ✓ that the patented invention is not worked in the territory of India.

**Q6.** Hayabusa 2 project, recently seen in news is related to:

- A. Developing fuel cell that finds commercial applications
- B. Asteroid sample-return mission
- C. An orbiting spacecraft which seeks to become the first to be propelled solely by sunlight
- D. Astronomical observatory with an extremely large telescope

• **Solution:**  
(B)

- Japan's Hayabusa2 spacecraft left the asteroid Ryugu a year ago and is expected to reach Earth and drop a capsule containing the precious samples in southern Australia on December 6.
- The soil samples and data from the asteroid could provide clues to the origins of the solar system.
- **Hayabusa2 project:**
- It is an asteroid sample-return mission operated by the Japanese space agency, JAXA.

**Q7.** The three-drug Bedaquiline, Pretomanid and Linezolid (BPAL) regimen is used to treat:

- A. Coronavirus disease

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- B. Hepatitis B**
- C. Tuberculosis**
- D. Measles**

• **Solution:**

**(C)**

- At a time when the world grapples with highly treatment-resistant tuberculosis, the recently approved three-drug regimen to tackle the condition has shown a 90 per cent favourable outcome, according to a new study.

**Q8.** Consider the following statements regarding Aditya-L1 mission:

- 1) It is India's first solar mission.
- 2) Satellite will be placed at 36000 km above the surface of the Earth.
- 3) It will be launched on PSLV launch vehicle.

Which of the above statements is/are correct:

- A. 1 only
- B. 1, 2
- C. 1, 3
- D. 1, 2, 3

• **Solution:**

**(C)**

- **Aditya – L1:**
- First Indian mission to study the Sun
- The Aditya-1 mission was conceived as a 400kg class satellite carrying one payload, the Visible Emission Line Coronagraph (VELC) and was planned to launch in a 800 km low earth orbit.
- A Satellite placed in the halo orbit around the Lagrangian point 1 (L1) of the Sun-Earth system has the major advantage of continuously viewing the Sun without any occultation/eclipses.
- Therefore, the Aditya-1 mission has now been revised to “Aditya-L1 mission” and will be inserted in a halo orbit around the L1, which is 1.5 million km from the Earth.
- The satellite carries additional six payloads with enhanced science scope and objectives.
- It is planned to be launched on the PSLV-C56 in December 2021 or January 2022.

**Q9.** Consider the following statements regarding Li-Fi Technology:

- 1) Li-Fi is a wireless technology that makes use of High frequency radio waves to transmit data at terabits per second speeds.
- 2) Li-Fi can work underwater, where Wi-Fi fails completely.

Which of the above statements is/are correct:’

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

• **Solution:**

(B)

- Li-Fi, or light fidelity, invented by German physicist and professor Harald Haas, is a wireless technology that makes use of visible light in place of radio waves to transmit data at terabits per second speeds—more than 100 times the speed of Wi-Fi.
- Li-Fi offers great promise to overcome the existing limitations of Wi-Fi by providing for data-heavy communication in short ranges.
- Li-Fi can also easily work underwater, where Wi-Fi fails completely, thereby throwing open endless opportunities for military and navigational operations.

**Q10.** Consider the following statements regarding Sunspots:

- 1) Sunspots are darker, cooler areas on the surface of the sun in a region called Corona.
- 2) They are regions of reduced surface temperature caused by concentrations of magnetic field flux that inhibit convection.

Which of the above statements is/are correct:

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

• **Solution:**

(B)

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- Sunspots are temporary phenomena on the Sun's photosphere that appear as spots darker than the surrounding areas.
- They are regions of reduced surface temperature caused by concentrations of magnetic field flux that inhibit convection.

