



An Institute for Civil Services

**IAS PRELIMS 2020**

**COMPLETE REVISION OF  
CURRENT AFFAIRS  
*through*  
500 MCQs**

**DAY: 47**

**QUESTIONS  
*with* ANSWER HINTS**

# GS SCORE

An Institute for Civil Services

# IAS 2021-22

# GS FOUNDATION

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**15**

**SEPTEMBER  
2020**

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# QUESTIONS

**1. Maser Monitoring Organisation (M2O), recently seen in news is related to-**

- (a) To observe accretion burst event in the stars
- (b) To observe the most distant stars and galaxies as well as the planets in the solar system
- (c) To observe early noctilucent ice clouds over Antarctica.
- (d) To study how galaxies, stars and planets formed and changed.

**2. 'Dhanush', seen in news recently is a:**

- (a) Short Range Surface to Air Missile system to protect vulnerable areas and vulnerable points from air attacks.
- (b) First indigenously built long range artillery gun.
- (c) High-speed Expendable Aerial Target (HEAT) that offers a realistic threat scenario for practice of weapon systems.
- (d) Third generation fire and forget class anti-tank guided missile (ATGM) system.

**3. Consider the following statements regarding Spitzer Space Telescope:**

- 1. It was one of NASA's four Great Observatories which observed the universe in visible light.
- 2. It is known for the discovery of 7 Earth-sized rocky exoplanets.

Which of the above statements is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**4. Consider the following statements regarding Coronavirus:**

- 1. Coronaviruses are a large family of zoonotic viruses causing respiratory problems.

- 2. The 2019 novel coronavirus (nCoV) is the same virus that caused SARS outbreak in 2003.
- 3. nCoV is more easily transmitted but is less dangerous than SARS.
- 4. Asymptomatic transmission is not possible for both SARS as well as nCoV.

Which of the above statements are correct?

- (a) 1 and 3 only
- (b) 2 and 4 only
- (c) 1, 2 and 4 only
- (d) 2, 3 and 4 only

**5. Consider the following statements:**

- 1. Neglected tropical diseases (NTDs) are a diverse group of non-communicable diseases.
- 2. NTDs are only caused by viruses and bacteria.
- 3. The first World Neglected Tropical Diseases Day was celebrated on 30 January 2020.

Which of the above statements is/are correct?

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

**6. Consider the following statements:**

- 1. Biorock is formed by electro accumulation of minerals dissolved in seawater on steel structures that are connected to a power source.
- 2. Biorock is a mineral accretion technology that can be used to restore coral reefs.

Which of the above statements is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**7. The world record of Longest Spaceflight by a Woman is recently been obtained by which country?**

- (a) Russia
- (b) Canada
- (c) USA
- (d) Europe

**8. With reference to Polio disease, consider the following statements:**

- 1. The virus spreads from person to person.
- 2. IPV is created from a weakened form of poliovirus.
- 3. OPV is made from inactive poliovirus.

Which of the above statements is/are correct?

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

**9. Consider the following statements regarding Classical Swine Fever:**

- 1. It is also known as hog cholera.
- 2. It is a contagious bacterial disease.

Which of the above statements is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**10. Consider the following statements regarding National Mission on Quantum Technologies & Applications (NM-QTA):**

- 1. The move will be implemented by the Department of Science & Technology (DST).
- 2. Quantum entanglement is the theory that sub-atomic particles exist in multiple states simultaneously.

Which of the above statements is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

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# GS MAINS

## FOUNDATION 2021

**BASIC TO ADVANCE**

①

GS Mains  
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②

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Test Series

③

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**BATCH STARTS****15 SEPTEMBER, 2020****PROGRAMME FEE** ₹ 65,000 + GST**DURATION** 15 September, 2020 to 15 March, 2021**TIMINGS** 5:00 PM to 8:30 PM (4 Hrs. Daily)[www.iasscore.in](http://www.iasscore.in)

# ANSWER HINTS

## Answer Key

Q. 1 (a)	Q. 3 (b)	Q. 5 (c)	Q. 7 (c)	Q. 9 (a)
Q. 2 (b)	Q. 4 (a)	Q. 6 (c)	Q. 8 (b)	Q. 10 (a)

### 1. Correct Option: (a)

#### Explanation:

- **Option (a) is correct:** Maser Monitoring Organization (M2O) is a joint global effort of astronomers from around the world to observe accretion burst events. Accretion burst event is incredibly rare. Till now, only three such events have been observed, out of all the billions of massive stars in the Milky Way.

#### Supplementary notes:

#### Maser Monitoring Organisation (M2O)

- Accretion burst event is incredibly rare. Till now, only three such events have been observed, out of all the billions of massive stars in the Milky Way.
- After the first detection of an accretion burst, in 2016, astronomers from around the world agreed in 2017 to coordinate their efforts to observe more.
- Reported bursts have to be validated and followed up with more observations, and this takes a joint, global effort – which led to the formation of the **Maser Monitoring Organisation (M2O)**.
- In January 2019, astronomers at Ibaraki University in Japan noticed that one such massive protostar, **G358-MM1**, showed signs of new activity.
- The masers associated with the object brightened significantly over a short period of time.
- Follow-up observations with the Australian Long Baseline Array revealed something astronomers are witnessing for the first time – a blast of heat-wave coming from the source and travelling through the surroundings of the forming big star.

- Blasts can last for about two weeks to a few months.
- A maser (microwave amplification by stimulated emission of radiation) is the microwave (radio frequency) equivalent of a laser.
- Masers are observed using radio telescopes and most of them are observed at centimetre wavelength. They are very compact.
- A maser flare can be a sign of an extraordinary event such as the formation of a star.

### 2. Correct Option: (b)

#### Explanation:

- **Option (b) is correct**

#### Supplementary notes:

#### Dhanush

- **Dhanush is the first indigenously built 155 mm x 45 calibre long-range artillery gun with strike range of 38 kilometers.**
- The indigenization to the extent of 81 per cent of the artillery guns has already been achieved. By the end of 2019, indigenization will go up to 91 per cent.
- The guns are now inducted in the Indian Army and is said to increase the Fire Power of the Indian Artillery manifold.
- The weight of the gun is less than 13 tons, making it easy to mobilize in hilly terrain and remote areas.
- It is a versatile weapon that can operate in all climatic conditions.
- The gun is equipped with inertial navigation-based sighting system, auto-laying facility, on-board ballistic computation and an advanced day-night direct firing system. The self-



propulsion unit allows the gun to negotiate and deploy itself in the field.

### 3. Correct Option: (b)

#### Explanation:

- **Statement 1 is incorrect:** It observed the universe in infrared light.

#### Supplementary notes:

##### Spitzer Space Telescope

- NASA has decommissioned the Spitzer Space Telescope, one of its greatest observatories, which has studied the universe by detecting cosmic infrared radiation for more than 16 years.
- **The Spitzer Space Telescope is the final mission in NASA's Great Observatories Program - a family of four space-based observatories, each observing the Universe in a different kind of light.** The other missions in the program include the visible-light Hubble Space Telescope (HST), Compton Gamma-Ray Observatory (CGRO), and the Chandra X-Ray Observatory (CXO).
- **Spitzer is designed to detect infrared radiation**, which is primarily heat radiation. It is comprised of two major components:
  - The Cryogenic Telescope Assembly, which contains the a 85 centimeter telescope and Spitzer's three scientific instruments
  - The Spacecraft, which controls the telescope, provides power to the instruments, handles the scientific data and communicates with Earth
- The telescope revealed a new ring around the planet Saturn. **In 2017, the telescope also revealed the presence of seven Earth-size rocky planets around the TRAPPIST-1 star.** TRAPPIST-1 is a planetary system, located 12 parsecs away from the Solar system (39 light years), and is 12 times less massive than the Sun and only slightly larger than the planet Jupiter. There are at least seven planets orbiting the star.
- In 2016, NASA made a decision to close the Spitzer mission in 2018 in anticipation of the launch of the James Webb Space Telescope (JWST). As the launch of the JWST got postponed, the Spitzer mission was granted its fifth and final extension, which ended on January 30<sup>th</sup> 2020.

### 4. Correct Option: (a)

#### Explanation:

- **Statement 2 is incorrect:** 2019-nCoV is from the same family of viruses as Severe Acute Respiratory Syndrome (SARS-CoV) but it is not the same virus.
- **Statement 4 is incorrect:** Unlike SARS, asymptomatic transmission of nCoV has been reported.

#### Supplementary notes:

##### Coronavirus

- **Coronaviruses (CoV) are a large family of viruses that cause illness ranging from the common cold to more severe diseases** such as Middle East Respiratory Syndrome (MERS-CoV) and Severe Acute Respiratory Syndrome (SARS-CoV). A novel coronavirus (nCoV) is a new strain that has not been previously identified in humans.
- Coronaviruses are a class of viruses so named because their electron microscope image resembles the corona of the sun.
- **Coronaviruses are zoonotic, meaning they are transmitted between animals and people. Common signs of infection include respiratory symptoms**, fever, and cough, shortness of breath and breathing difficulties. In more severe cases, infection can cause pneumonia, severe acute respiratory syndrome, kidney failure and even death.
- The new or "novel" coronavirus, now called 2019-nCoV, had not previously detected before the outbreak was reported in Wuhan, China in December 2019.
- **2019-nCoV is from the same family of viruses as Severe Acute Respiratory Syndrome (SARS-CoV) but it is not the same virus.**
- As with other respiratory illnesses, infection with 2019-nCoV can cause mild symptoms including a runny nose, sore throat, cough, and fever. It can be more severe for some persons and can lead to pneumonia or breathing difficulties. More rarely, the disease can be fatal. Older people, and people with pre-existing medical conditions (such as, diabetes and heart disease) appear to be more vulnerable to becoming severely ill with the virus.
- The 2019-nCoV causes respiratory disease and can be transmitted from person to person, usually after close contact with an infected patient

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- The animal source of the 2019-nCoV has not yet been identified.
- **The nCoV seems to be more easily transmissible than SARS but is less dangerous as the mortality rate of SARS was much higher (in 2003).**
- **The nCoV virus can be transmitted from one person to the other, even before the symptoms had become evident in the first person. Such transmissions are called asymptomatic.**

## 5. Correct Option: (c)

### Explanation:

- **Statement 1 is incorrect:** Neglected tropical diseases (NTDs) are a diverse group of communicable diseases that prevail in tropical and subtropical conditions in 149 countries.
- **Statement 2 is incorrect:** They can be caused by a variety of pathogens such as viruses, bacteria, protozoa, helminths and parasitic pathogens.

### Supplementary notes:

#### Neglected Tropical Diseases (NTDs)

- **Neglected tropical diseases** (NTDs) are a diverse group of communicable diseases that prevail in tropical and subtropical conditions in 149 countries.
- They can be caused by a variety of pathogens such as viruses, bacteria, protozoa, helminths and parasitic pathogens.
- NTDs are a diverse set of bacterial, viral, and parasitic pathogens that collectively cause significant illness and debilitation, primarily in impoverished communities of low and middle-income countries.
- The major types of NTDs are as given below:
  - **Dengue**
  - **Rabies**
  - **Trachoma**
  - **Buruli ulcer**
  - **Yaws**
  - **Leprosy**
  - **Chagas disease**
- These diseases affect more than one billion people and cost developing economies billions of dollars every year.

- Neglected tropical diseases (NTDs) are called "neglected," because they generally afflict the world's poor and historically have not received as much attention as other diseases.
- Populations living in poverty, without adequate sanitation and in close contact with infectious vectors and domestic animals and livestock are those worst affected.
- The first-ever edition of "World Neglected Tropical Diseases Day" (World NTD Day) is launched on 30 January 2020.
- This initiative brings together various civil society organisations, community leaders, global health experts and policymakers working in the field of NTDs.

## 6. Correct Option: (c)

### Explanation:

- **Both statements are correct**

### Supplementary notes:

#### Biorock or Mineral Accretion Technology

- **The Zoological Survey of India (ZSI), with help from Gujarat's forest department, is attempting for the first time a process to restore coral reefs using biorock or mineral accretion technology.**
- **Biorock is the name given to the substance formed by electro accumulation of minerals dissolved in seawater on steel structures that are lowered onto the sea bed and are connected to a power source, in this case solar panels that float on the surface.**
- The technology works by passing a small amount of electrical current through electrodes in the water. When a positively charged anode and negatively charged cathode are placed on the sea floor, with an electric current flowing between them, calcium ions combine with carbonate ions and adhere to the structure (cathode). This results in calcium carbonate formation. Coral larvae adhere to the  $\text{CaCO}_3$  and grow quickly.
- Fragments of broken corals are tied to the biorock structure, where they are able to grow at least four to six times faster than their actual growth as they need not spend their energy in building their own calcium carbonate skeletons.

## 7. Correct Option: (c)

### Explanation:

- **Option (c) is correct**

#### **Supplementary notes:**

#### **Longest Spaceflight by a Woman**

- Christina Koch, a US astronaut set a record for the longest single spaceflight by a woman, breaking the old mark of 288 days with about two months left in her mission.
- The US record for longest space flight is 340 days set by Scott Kelly in 2015-2016.
- The world record is 15 months set in the 1990s by a Russian cosmonaut aboard the former Mir space station.

### **8. Correct Option: (b)**

#### **Explanation:**

- **Statement 2 is incorrect:** IPV consists of a series of injections that start 2 months after birth and continue until the child is 4 to 6 years old. The vaccine is made from inactive poliovirus. It is very safe and effective and cannot cause polio.
- **Statement 3 is incorrect:** OPV is created from a weakened form of poliovirus. It is low cost, easy to administer, and gives an excellent level of immunity. However, in very rare cases, OPV has been known to revert to a dangerous form of poliovirus, which is able to cause paralysis.

#### **Supplementary notes:**

#### **Polio Comeback in a Number of Countries**

- In the last one year or so, polio has made a comeback in countries such as the Philippines, Malaysia, Ghana, Myanmar, China, Cameroon, Indonesia and Iran, mostly as vaccine-derived polio infection.
- Polio, or poliomyelitis, is a disabling and life-threatening disease caused by the poliovirus.
- The virus spreads from person to person and can infect a person's spinal cord; causing paralysis (can't move parts of the body).
- It can spread easily from person to person.
- The World Health Organisation (WHO) aim is to eradicate polio completely and, if this happens, it will be only the third disease to have been beaten in this way, after smallpox and rinderpest.
- Nigeria, Pakistan, and Afghanistan are the only three countries in which polio has not successfully been stopped.
- Most people who get infected with poliovirus will not have any visible symptoms.

- A smaller proportion of people with poliovirus infection will develop other, more serious symptoms that affect the brain and spinal cord.
- **Poliovirus is very contagious and spreads through person-to-person contact.**
- It lives in an infected person's throat and intestines.
- There are two vaccines available to fight polio:
  - inactivated poliovirus (IPV)
  - oral polio vaccine (OPV)
- IPV consists of a series of injections that start 2 months after birth and continue until the child is 4 to 6 years old. The vaccine is made from inactive poliovirus. It is very safe and effective and cannot cause polio.
- OPV is created from a weakened form of poliovirus. It is low cost, easy to administer, and gives an excellent level of immunity. However, in very rare cases, OPV has been known to revert to a dangerous form of poliovirus, which is able to cause paralysis.

### **9. Correct Option: (a)**

#### **Explanation:**

- **Statement 2 is incorrect:** It is a contagious viral disease of domestic and wild swine.

#### **Supplementary notes:**

#### **Classical Swine Fever**

- Classical swine fever (CSF), also known as hog cholera, is a contagious viral disease of domestic and wild swine.
- It is caused by a virus of the **genus Pestivirus** of the family **Flaviviridae**, which is closely related to the viruses that cause **bovine viral diarrhoea** in cattle and **border disease** in sheep.
- **Clinical signs:** The virus that causes CSF varies in virulence. Some strains are highly virulent and cause acute (i.e. rapid) serious disease. Some strains are of low virulence and cause chronic (i.e. long-lasting) disease, others are intermediate causing sub-acute disease.
- There is only one serotype of CSF virus (CSFV).
- CSF is a disease listed by the OIE World Organisation for Animal Health (OIE) Terrestrial Animal Health Code and must be reported to the OIE (OIE Terrestrial Animal Health Code).

## 10. Correct Option: (a)

### Explanation:

- **Statement 2 is incorrect:** Quantum entanglement is when two atoms are connected, or entangled, despite being separated. While, Quantum superposition is the theory that sub-atomic particles exist in multiple states simultaneously.

### Supplementary notes:

#### National Mission on Quantum Technologies & Applications (NM-QTA)'

- The new mission will oversee the development of quantum technologies for communications, computing, materials development and cryptography.
- It will coordinate the work of scientists, industry leaders and government departments
- **Implementing authority:** The move will be implemented by the Department of Science & Technology (DST).
- **Focus area:** The areas of focus for the Mission will be in fundamental science, translation, technology development, human and infrastructural resource generation, innovation and start-ups to address issues concerning national priorities.

#### Quantum Technology:

- Quantum technologies are rapidly developing globally with a huge disruptive potential.
- Quantum technology is a class of technology that works by using the principles of quantum mechanics (the

physics of sub-atomic particles), including quantum entanglement and quantum superposition.

- **Quantum entanglement** is when two atoms are connected, or entangled, despite being separated.
- **Quantum superposition** is the theory that sub-atomic particles exist in multiple states simultaneously.
- It concerns the control and manipulation of quantum systems, with the goal of achieving information processing beyond the limits of the classical world.
- Quantum technology is opening up new frontiers in computing, communications, cyber security with wide-spread applications.
- It is expected that lots of commercial applications would emerge from theoretical constructs which are developing in this area.
- Quantum technology promises improvements to a vast range of everyday gadgets, including:
  - more reliable navigation and timing systems
  - more secure communications
  - more accurate healthcare imaging
  - more powerful computing
- The next generation transformative technologies that will receive a push under this mission include quantum computers and computing, quantum communication, quantum key distribution, encryption, crypt analysis, quantum devices, quantum sensing, quantum materials, quantum clock and so on.

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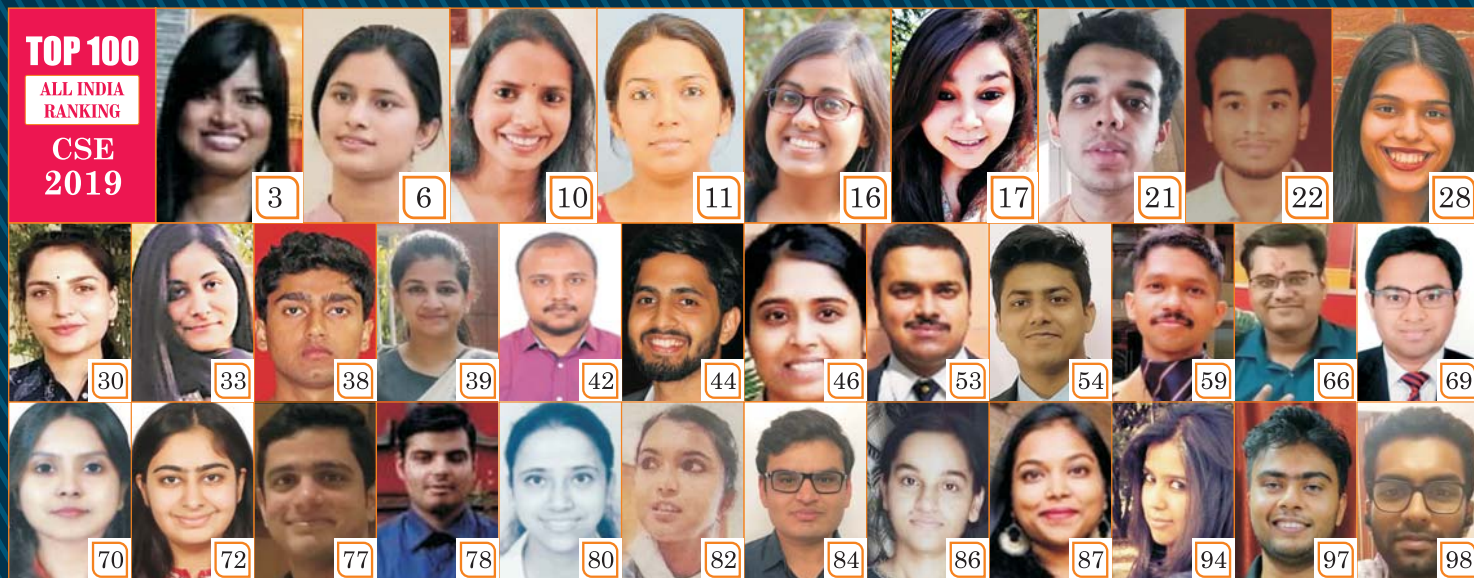




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