

1. With reference to “convalescent - plasma therapy”, consider the following statements

1. Under this therapy, the blood serum obtained from one who has recovered from an infectious disease is administered to a sick person
2. The convalescent plasma therapy has not been used during past viral epidemics prior to COVID-19 outbreak

Which of the statements given above is/are correct?

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

Ans: A

Explanation

- India has taken a bold step to provide **innovative treatment to patients** suffering from COVID-19 disease - **plasma therapy**
- Technically called “**convalescent-plasma therapy**”, the treatment aims at using the **immune power gained by a recovered person** to treat a sick person.
- Antibodies are one of the front-line immune response to an infection by a microbe. They are a particular type of **proteins secreted by immune cells called B lymphocytes** when they encounter an invader, such as a novel coronavirus

Convalescent-plasma therapy

- **Blood is drawn from a person who has recovered** from COVID-19 sickness. The serum is separated and screened for virus-neutralizing antibodies.

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- **Convalescent serum**, that is the blood serum obtained from one who has recovered from an infectious disease and especially rich in antibodies for that pathogen, is **then administered to a COVID-19 patient**. The sick acquires **passive immunisation**
 - We have effective **antibiotics** against bacterial infection. However, we do not have effective **antivirals**. Whenever a new viral outbreak takes place, there are no drugs to treat it. Hence, **the convalescent serum has been used during past viral epidemics**
 - **2009–2010 H1N1 influenza virus pandemic**
 - The Ebola outbreak in 2018
 - After the antibody serum is given, it will **stay on the recipient for at least three to four days**. During this period, the sick person will recover. Various studies have confirmed this
- 2. Which of the following is correct with respect to 'YUKTI', a web portal?**
- a) It would act as a one-stop digital platform for private sector participation in defense manufacturing projects
 - b) It is a unique portal and dashboard to monitor and record the efforts and initiatives of Ministry of Human Resources and Development (MHRD)
 - c) The portal displays a real time data regarding the disaster prone zones in India
 - d) It provides a standard operating procedure (SOP) during the times of health emergence and outbreak of epidemics in India

Ans: B

Explanation

- **Ministry of Human Resources and Development (MHRD)** has recently launched a web-portal YUKTI (Young India Combating COVID with Knowledge, Technology and Innovation) in New Delhi.
- It's a unique portal and dashboard **to monitor and record the efforts and initiatives of MHRD**

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- The **portal intends to cover the different dimensions of COVID-19 challenges** in a very holistic and comprehensive way
- It will cover the **various initiatives and efforts of the institutions** in academics, research especially related to CoVID, social initiatives by institutions and the measures taken for the betterment of the total wellbeing of the students
- The portal will **cover both qualitative and quantitative parameters** for effective delivery of services to the academic community at large
- The portal will also allow **various institutions to share their strategies** for various challenges which are there because of the unprecedented situation of COVID-19 and other future initiatives

3. Which of the following is/are the constituents of 'Fly ash'?

1. Mercury
2. Lead
3. Silicon dioxide
4. Arsenic

Select the correct answer using the codes given below

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

Ans: D

Explanation

Fly Ash

- Popularly known as **Flue ash or pulverised fuel ash**, it is a coal combustion product.
- Composed of the particulates that are driven out of **coal-fired boilers** together with the flue gases.

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- Depending upon the source and composition of the coal being burned, the components of fly ash vary considerably, but all fly ash includes substantial amounts of **silicon dioxide (SiO₂)**, **aluminium oxide (Al₂O₃)** and **calcium oxide (CaO)**, the main mineral compounds in coal-bearing rock strata.
- **Minor constituents include:** arsenic, beryllium, boron, cadmium, chromium, hexavalent chromium, cobalt, **lead**, manganese, **mercury**, molybdenum, selenium, strontium, thallium, and vanadium, along with very small concentrations of **dioxins and PAH compounds**. It also **has unburnt carbon**

Health and environmental hazards

- **Toxic heavy metals present:** All the heavy metals found in fly ash nickel, cadmium, arsenic, chromium, lead, etc are toxic in nature. They are minute, **poisonous particles accumulate in the respiratory tract**, and cause gradual poisoning
 - **Radiation:** For an equal amount of electricity generated, fly ash contains a hundred times more **radiation than nuclear waste** secured via dry cask or water storage
 - **Water pollution:** The breaching of ash dykes and consequent ash spills occur frequently in India, **polluting a large number of water bodies**.
 - **Effects on environment:** The destruction of mangroves, drastic reduction in crop yields, and the pollution of groundwater in the Rann of Kutch from the ash sludge of adjoining Coal power plants has been well documented
- ✓ While 20 districts of Madhya Pradesh battle hard against the killer onslaught of the novel Coronavirus, the **Singrauli district of the central Indian state** has been hit by a tragedy caused by the **Reliance Power plant's fly ash dyke collapse**

4. 'Patachitra' painting is predominantly practiced in which of the following states?

- a) Odisha
- b) Maharashtra

c) Andhra Pradesh

d) Uttarakhand

Ans: A

Explanation

- One of the oldest forms of artwork, **Patachitra art depicts Hindu mythological tales** and wonders. Patachitra is a picture painted on a piece of cloth. It is based in the **states of West Bengal and Odisha**
- Primarily based on these stories from the past, Patachitra art is vibrant, unique and is a fine display of dexterous Indian craftsmanship at its best.
- This kind of artwork has a **traditional appeal and is intrinsic with Indian values**, customs and rituals, which are a part and parcel of the Hindu faith and religion.
- What started off as different forms of paintings has however evolved to become an immense **facet of Indian accessories** and other forms of traditional fashion as well.
- Patachitra style of painting is a **unique blend of classical and folk elements** but is more bent towards a folk style in the larger sense.
- What is even more interesting is that this artwork has **Mughal influences as well** when it comes to the character's apparel and fashion sense.
- Features of each character are defined with **clear dark lines** which give a definite shape and appeal. **Natural dyes and colors are used**, all of which are derived from fruits and vegetables.

5. Consider the following statements regarding the Central Administrative Tribunal (CAT)

1. The CAT exercises original jurisdiction in relation to recruitment and all service matters of public servants covered by it
2. Its jurisdiction extends to the officers and servants of the Supreme Court and the secretarial staff of the Parliament

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3. CAT is guided by the principles of natural justice and not bound by the procedure laid down in the Civil Procedure Code

Which of the statements given above is/are correct?

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

Ans: B

Explanation

Central Administrative Tribunal (CAT)

- It was set up in 1985 with the **principal bench at Delhi** and additional benches in different states.
- At present, it has 17 regular benches, 15 of which operate at the principal seats of high courts and the remaining two at Jaipur and Lucknow
- These benches also **hold circuit sittings** at other seats of high courts
- The CAT **exercises original jurisdiction in relation to recruitment and all service matters** of public servants covered by it
- Its jurisdiction **extends to the all-India services, the Central civil services**, civil posts under the Centre and civilian employees of defence services
- However, the **members of the defence forces, officers and servants of the Supreme Court** and the secretarial staff of the Parliament are **not covered** by it.
- The CAT is a **multi-member body** consisting of a chairman and members. At present, the sanctioned strength of the Chairman is one and sanctioned strength of the Members is 65.
- They are **drawn from both judicial and administrative streams** and are appointed by the President.

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- They hold office for a **term of five years** or until they attain the age of 65 years in case of chairman and 62 years in case of members, whichever is earlier
- The appointment of Members in CAT is made on the basis of recommendations of a high powered selection **committee chaired by a sitting Judge of Supreme Court** who is nominated by the Chief Justice of India.
- After obtaining the concurrence of Chief Justice of India, appointments are made with the approval of Appointments Committee of the Cabinet (ACC)
- The CAT is **not bound by the procedure laid down in the Civil Procedure Code of 1908**. It is guided by the principles of natural justice.

