

1. Consider the following statements

1. Among the three sub-bands of Ultraviolet Light, UV-B rays are the most harmful and are completely absorbed by the Earth's atmosphere
2. Exposure to UV light modifies the genetic material of microorganisms and destroys their ability to reproduce
3. Ultraviolet Germicidal Irradiation (UVGI) is a method of disinfection that uses UV-B rays to inactivate or kill microorganisms and pathogens

Which of the statements given above is/are correct?

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

Ans: C

Explanation

What is Ultraviolet Light?

- Ultraviolet light is a type of **naturally present electromagnetic radiation** that is in sunlight and actually makes up approximately 10% of the total light generated by the sun.
- UV light is electromagnetic energy with **wavelengths shorter than visible light** but longer than x-rays. The wavelength of this light ranges from 10nm to 400nm and is **classified into three sub-bands; UV-A, UV-B and UV-C**
- **Statement 1 is incorrect:** In this spectrum, **UV-C rays are the most harmful and are completely absorbed by the Earth's atmosphere.** Further, while both UV-A and UV-B rays are harmful, exposure to UV-B rays can cause DNA and cellular damage in living organisms.

UV Light Disinfection

- **Statement 2 is correct: Ultraviolet light kills cells by damaging their DNA.** Exposure to the electromagnetic radiation (light) at UV wavelengths **modifies the genetic material of microorganisms** and destroys their ability to reproduce
- UV can **kill all bacteria, including drug-resistant bacteria** because UV light is actually attacking the **DNA and RNA of microbes.**

What is Ultraviolet Germicidal Irradiation (UVGI)?

- **Statement 3 is incorrect: UVGI is a method of disinfection** that uses short wavelength **ultraviolet light (UV-C) to inactivate or kill microorganisms and pathogens.**
 - Essentially, UVGI is the use of UV light with sufficiently short wavelengths to **disinfect surfaces, air, and water.**
 - UVGI has been recommended for the **isolation of disease and bio-defense systems** for buildings
 - The effectiveness of germicidal UV light depends on the **length of time a microorganism is exposed to UV**, as well as the intensity and wavelength of the UV radiation.
- ❖ As countries begin relaxing restrictions, questions are being asked on how **post-lockdown scenarios will shape-up and what the “new normal”** will be. Several countries are mandating behavioural changes, like **social distancing, wearing masks etc**
- ❖ Now, scientists are **studying the use of ultraviolet germicidal radiation (UVGI) to detect the virus in schools, restaurants and other public places.** Through this method, ultraviolet (UV) lights would be able to disinfect contaminated public spaces to stop the transmission of the virus.

<https://indianexpress.com/article/explained/explained-can-ultraviolet-light-help-detect-kill-the-coronavirus-6402346/>

2. It is a long narrow, deep, endorheic (landlocked) lake situated at a height of more than 14,000 ft in the Ladakh Himalayas. It is a transboundary lake that is expanded between India and China for almost 134 kms. During winter, the lake freezes completely, despite being saline water.

The above description refers to?

- a) Tso Moriri lake
- b) Pangong Tso lake
- c) Wular lake
- d) Chandra Taal lake

Ans: B

Explanation

Pangong Tso lake

- Pangong Tso is a **long narrow, deep, endorheic (landlocked) lake** situated at a height of more than **14,000 ft in the Ladakh Himalayas**.
- The western end of Pangong Tso lies 54 km to the southeast of Leh. The 134 km-long lake sprawls over 604 sq km in the shape of a boomerang, and is 6 km wide at its broadest point.
- Pangong is a **transboundary lake** that is expanded between India and China for almost 134 kms. Approximately **60% of the length of the lake lies within the Tibetan Autonomous Region**.
- During **winter the lake freezes completely, despite being saline water**. It is **not a part of the Indus river basin area** and geographically a separate landlocked river basin

Strategic significance

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- **The Line of Actual Control (LAC) cuts through the lake, but India and China do not agree on its exact location.**
- As things stand, a **45 km-long western portion of the lake is in Indian control**, while the rest is under China's control.
- Most of the **clashes between the two armies occur in the disputed portion** of the lake.
- The difference in perception over where the LAC lies on the northern bank of the lake, makes this **contested terrain**.
- In 1999, when the **Army unit from the area was moved to Kargil** for Operation Vijay, China took the opportunity to **build 5 km of road inside Indian territory** along the lake's bank.
- ❖ On May 10, **Indian and Chinese troops clashed in north Sikkim (Naku La)**, which adjoins the 3,448-kilometer Line of Actual Control (LAC) that **informally delimits the disputed Sino-Indian frontier**.
- ❖ Reports have also emerged of **similar scuffles in the eastern Ladakh region**. In an area called "Finger-5" on the northern bank of the 134-km **Pangong Tso (lake)**, which was one of the key battlegrounds during the 1962 Sino-Indian War, roughly **400 troops clashed**.

Line of Actual Control (LAC)

- The Line of Actual Control (LAC) is a **demarcation line that separates Indian-controlled territory from Chinese-controlled territory** in the former princely state of Jammu and Kashmir
- It is to be noted that this **border is not a legally recognised international boundary**, but rather it is the practical boundary.
- Conventionally, India considers the Johnson line of 1865, marked by a civil servant W.H. Johnson, which put **Aksai Chin in Jammu and Kashmir**.
- On the other hand, **China recognizes the Macartney-Macdonald Line** as the actual boundary which puts **Aksai Chin in Xinjiang region of China**

<https://indianexpress.com/article/explained/explained-pangong-tso-lake-theatre-india-china-lac-scuffles-army-5989785/>

<https://thediplomat.com/2020/05/what-to-make-of-india-and-chinas-latest-border-clash/>

3. Consider the following pairs

Tribe/Indigenous community

Predominantly located in

- | | | |
|-----------|---|------------|
| 1. Gaddis | - | Jharkhand |
| 2. Kukis | - | Punjab |
| 3. Toda | - | Tamil Nadu |

Which of the above given pairs is/are correctly matched?

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

Ans: A

Explanation

- Total population of Scheduled Tribes is 84,326,240 as per the Census 2001 which accounts for **8.6% of the total population of country**. Majority of the **Scheduled tribe population live in rural areas** and their population is 10.4 % of the total rural population of the country.
- The share of the Scheduled Tribe population in **urban areas is 2.4%**. Madhya Pradesh, Maharashtra, Orissa, Gujarat, Rajasthan, Jharkhand, Chhattisgarh, Andhra Pradesh, West Bengal, and Karnataka are the State having larger number of Scheduled Tribes

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- These **states account for 83.2% of the total Scheduled Tribe** population of the country. Assam, Meghalaya, Nagaland, Jammu & Kashmir, Tripura, Mizoram, Bihar, Manipur, Arunachal Pradesh, and Tamil Nadu, account for another 15.3% of the total Scheduled Tribe population. The share of the remaining states / UTs is negligible

Toda

- Toda people are an ethnic group who live predominantly in the **Nilgiri Mountains of Tamil Nadu**. During the 20th century, the Toda population has hovered in the range 700 to 900.
- The Toda traditionally live **in settlements called Mund**, consisting of three to seven small thatched houses.
- The Toda huts, called **dogles**, are of an oval, pent-shaped construction built of bamboo.
- **Fraternal polyandry** - a practice in which a woman marries all the brothers of a family - in traditional Toda society was fairly common; however, this practice has now been totally abandoned

Gaddis

- The Gaddis are a tribe living mainly in the Indian states of **Himachal Pradesh and Jammu and Kashmir**.
- According to the 2011 Census of India, the **Gaddi population was 1,78,130 in Himachal Pradesh** and 46,489 in Jammu Kashmir.
- The Gaddis of Himachal Pradesh had an **adult sex ratio of 1014** and literacy rate of 73.3, whereas those of Jammu and Kashmir had a sex ratio of 953 and literacy of 53.5

Kukis

- The Kukis **constitute one of several hill tribes within India**, Bangladesh, and Myanmar. **In Northeast India, they are present in all states except Arunachal Pradesh**
- Some fifty tribes of Kuki peoples in India are recognised as **scheduled tribes**. A great majority of these people are Christians

➤ **No Scheduled Tribes is notified in Punjab, Chandigarh, Haryana, Delhi, and Pondicherry.**

❖ Amid the COVID-19 outbreak, the **indigenous Toda artisans from the Nilgiris** are producing **thousands of masks with exquisite embroidery for local residents, police, and sanitary workers.**

<https://www.thehindu.com/news/national/tamil-nadu/toda-embroidered-masks-help-in-the-fight-against-covid-19/article31549252.ece>

<https://censusindia.gov.in/Census And You/scheduled castes and sceduled tribes.aspx>

For a complete list of **state wise tribal distribution**, kindly refer the link provided below

<https://tribal.nic.in/ST/LatestListofScheduledtribes.pdf>

4. The 'CHAMPIONS portal' recently seen in news in the context of which of the following?

- a) Revival of the sports culture in India at the grass-root level
- b) Prevention of Gender based violence in India
- c) Providing immediate assistance or emergency care to a person injured in an accident
- d) Development of Micro, Small and Medium Enterprises (MSME)

Ans: D

Explanation

CHAMPIONS - Creation and Harmonious Application of Modern Processes for Increasing the Output and National Strength

- **Union Ministry of MSME** has launched '**CHAMPIONS portal**' www.Champions.gov.in, a Technology driven Control Room-Cum-Management Information System.

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- It is aimed at **assisting Indian MSMEs march into big league** as National and Global CHAMPIONS.
- The CHAMPIONS stands here for **Creation and Harmonious Application of Modern Processes for Increasing the Output and National Strength.**
- As the name suggests, the portal is **basically for making the smaller units big by solving their grievances, encouraging, supporting, helping and handholding.** It is a real one-stop-shop solution of MSME Ministry.
- The ICT based system would be set up to **help the MSMEs in present difficult situation** and also to **handhold them to become national and international champions.**
- In addition to ICT tools including **telephone, internet and video conference**, the system is enabled by **Artificial Intelligence**, Data Analytics and Machine Learning.
- As part of the system, **a network of control rooms** is created in a **Hub & Spoke Model.** The Hub is situated in New Delhi. The spokes will be in the States in various offices and institutions of Ministry.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1623201>

5. Which of the following forms a part of the Concurrent list (As Specified in the 7th schedule of Indian Constitution)?

1. Bankruptcy and insolvency
2. Welfare of labour
3. Civil procedure
4. Public health and sanitation

Select the correct answer using the codes given below

- a) 2 and 3 only
- b) 2, 3 and 4 only

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c) 1, 2 and 4 only

d) 1, 2 and 3 only

Ans: D

Explanation

- The constitutional provisions in India on the **subject of distribution of legislative powers between the Union and the States** are defined under several articles; the **most important in this regard is articles 246** of the Constitution of India.
- Article 246 deals with the **7th Schedule of the Indian Constitution** that mentions three lists named as Union List, State List and Concurrent List which specify the divisions of power between Union and States.
- The Union List is a **list of 100** (Originally 97) numbered items as provided in the Seventh Schedule to the Constitution of India. The Union Government or Parliament of India has exclusive power to legislate on matters relating to these items.
- The **State List is a list of 61** (Originally 66) items in the Schedule Seven to the Constitution of India. The respective state governments have exclusive power to legislate on matters relating to these items.
- Concurrent list contains 52 (Originally 47) items currently in the list: This includes items which are under joint domain of the Union as well as the respective States.

Some of the important subjects in Concurrent List

- Criminal law
- Criminal procedure
- **Marriage and divorce**; infants and minors; adoption; wills, intestacy and succession; joint family and partition
- Transfer of property other than agricultural land
- **Bankruptcy and insolvency**
- Evidence and oaths; recognition of laws, public acts and records, and judicial proceedings.

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- **Civil procedure**
- Prevention of cruelty to animals
- Adulteration of foodstuffs and other goods.
- Commercial and industrial monopolies, combines and trusts.
- Trade unions; industrial and labour disputes.
- Social security and social insurance; employment and unemployment.
- **Welfare of labour** including conditions of work, provident funds, employers' liability, workmen's compensation, invalidity and old age pensions and maternity benefits
- Education, including technical education, medical education and universities
- Legal, medical and other professions.
- Charities and charitable institutions, charitable and religious endowments and religious institutions.
- Vital statistics including registration of births and deaths.
- Ports other than those declared by or under law made by Parliament or existing law to be major ports.
- Weights and measures except establishment of standards
- Factories
- Electricity
- Newspapers, books and printing presses

➤ **Public health and sanitation is a part of state list**

❖ As the **economy struggles with the lockdown** and thousands of firms and workers stare at an uncertain future, some **state governments decided to make significant changes in the application of labour laws.**

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- ❖ Uttar Pradesh, the most populous state has made the boldest changes as it **summarily suspended the application of almost all labour laws** in the state for the next three years.
- ❖ Keeping aside the questions of law — **labour falls in the Concurrent List** and there are many laws enacted by the Centre that a state cannot just brush aside

<https://www.mea.gov.in/Images/pdf1/S7.pdf>

<https://indianexpress.com/article/explained/what-labour-law-changes-mean-coronavirus-6403611/>

