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Daily MCQs: 17-08-2024

1. Consider the following statements about the Primary amebic meningoencephalitis (PAM)

- 1) It is a fatal infection of the brain caused by amoeba.
- 2) The infection does not spread from person to person.
- 3) No vaccine is available for the prevention of PAM.

How many of the statements given above are correct?

- A. Only one
- B. Only two
- C. All three
- D. None

2. The "Lakshpati Didi" initiative is primarily focused on which of the following?

- A. Promoting rural women entrepreneurship
- B. Providing healthcare to tribal women
- C. Enhancing education for girl children
- D. Skill development for urban youth

3. Consider the following pairs

1)	Labour Force Participation Rate (LFPR)	Percentage of employed persons in the population
2)	Worker Population Ratio (WPR)	Percentage of persons in the labor force (i.e., working or seeking/available for work) in the population
3)	Unemployment Rate (UR)	Percentage of persons unemployed among the persons in the labor force

How many of the above pairs are correctly matched?

- A. Only one
- B. Only two
- C. All three
- D. None

4. Which of the following is an advantage of the SSLV over larger launch vehicles like the PSLV or GSLV?

- A. High payload capacity
- B. Lower cost and quicker turnaround time
- C. Ability to launch interplanetary missions
- D. None of the above

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5. Consider the following statements

- 1) Monkeypox is a zoonotic disease.
- 2) Like smallpox, monkeypox is completely eradicated globally..

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

Solutions:

1. Answer: C

Explanation

- **Statement 1 is correct:** Primary amebic meningoencephalitis (PAM) is a **rare, usually fatal infection of the central nervous system** (brain and spinal cord) caused by **Naegleria fowleri**, a type of free-living **ameba**.
- As it can infect the brain and destroy the tissues there, this **one-celled organism** is also called '**brain-eating amoeba**'.

How does the disease occur?

- The amoeba **thrives in warm freshwater** like lakes, ponds, and rivers, and can also survive in **poorly maintained swimming pools**. Infection usually occurs when people swim in these water bodies during hot summers, especially when the water level is low.
- The amoeba enters through the nose, travels to the brain, and causes brain tissue damage and swelling.
- **Statement 2 is correct:** The infection **does not spread from person to person**.
- **Children are more vulnerable**.

Symptoms

- Early symptoms of PAM include **headache, fever, nausea, and vomiting**.
- The disease quickly worsens, causing symptoms like a stiff neck, confusion, lack of focus, loss of balance, and hallucinations.
- It often **leads to coma and death** within five days, with most people dying within one to 18 days.
- These infections, though rare, are **fatal** and **97% of the patients don't survive**.

How is it diagnosed and treated?

- PAM can be diagnosed through **Polymerase Chain Reaction (PCR) tests of cerebrospinal fluid (CSF)**.
 - *PCR works by amplifying the DNA of amoeba if present in the sample.*
 - *CSF is a clear, colorless liquid that surrounds and cushions the brain and spinal cord.*
- There are **no standard treatment methods** available to treat PAM. Miltefosine, a broad-spectrum antimicrobial drug, Azithromycin and Amphotericin B are some of the medicines currently being utilized to treat the infection.
- **Statement 3 is correct: No vaccine** is available for the prevention of PAM.

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2. Answer: A

Explanation

- Lakhpati Didi is an initiative of the **Ministry of Rural Development** that strives to **empower women** associated with **Self-Help Groups** to have an annual household income exceeding Rs. 1,00,000 through adopting sustainable livelihood practices.
- A Lakhpati Didi is a Self-Help Group (SHG) member with an annual household income exceeding Rs. 1,00,000.
- Beyond financial success, they inspire through adopting sustainable livelihood practices and achieving a decent standard of life.
- SHGs support this journey with collective action, financial literacy, and skill development, empowering members for entrepreneurial ventures.
- Lakhpati initiative facilitates diversified livelihood activities, by ensuring convergence across all Government departments, Panchayati Raj Institutions, Private sector and Market players. The strategy includes focused planning, implementation and monitoring at all levels.
- IFCs play an important role in the functioning of this initiative.

3. Answer: A

Explanation

- **Labour Force Participation Rate (LFPR):** LFPR is defined as the percentage of persons in the labor force (i.e. working or seeking or available for work) in the population. Hence **pair 1 is incorrect.**
- **Worker Population Ratio (WPR):** WPR is defined as the percentage of employed persons in the population. Hence **pair 2 is incorrect.**
- **Unemployment Rate (UR):** UR is defined as the percentage of persons unemployed among the persons in the labor force. Hence **pair 3 is correct.**

4. Answer: B

Explanation

- The **SSLV** is capable of **launching Mini, Micro or Nanosatellites (10 to 500kg mass)** into a **500 km planar orbit.**
- SSLV is a **three-stage launch vehicle** with all **solid propulsion stages** and a **liquid propulsion-based Velocity Trimming Module (VTM)** as a terminal stage.
- The design drivers of SSLV are low cost, low turn-around time, flexibility in accommodating multiple satellites, launch-on-demand feasibility, minimal launch infrastructure requirements, etc.

5. Answer: A

Explanation

- Monkeypox, or mpox is caused by the **monkeypox virus** which belongs to the **orthopoxvirus genus** of the **Poxviridae family.**

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- The orthopoxvirus genus of viruses also includes the **variola virus**, which causes smallpox, and **vaccinia virus**, which was used in the smallpox vaccine.
- Monkeypox causes **symptoms similar to smallpox, although they are less severe.**
- While **vaccination eradicated smallpox worldwide** in 1980, monkeypox continues to occur in a swathe of countries in Central and West Africa, and has on occasion showed up elsewhere. Hence **statement 2 is incorrect.**
- Transmission, when it occurs, can be through **contact with bodily fluids, lesions on the skin or on internal mucosal surfaces**, such as in the mouth or throat, **respiratory droplets and contaminated objects.**

Zoonotic disease

- Monkeypox is a **zoonosis**, that is, a disease that is transmitted from infected animals to humans. Hence **statement 1 is correct.**
- According to the WHO, **cases occur close to tropical rainforests inhabited by animals that carry the virus.** Monkeypox virus infection has been detected in squirrels, Gambian pouched rats, dormice, and some species of monkeys.
- **Human-to-human transmission is limited in nature.**
- According to the WHO, the **proportion of patients who die has varied between 0 and 11%** in documented cases, and has been **higher among young children.**
- There is **no safe, proven treatment for monkeypox yet.** The WHO recommends **supportive treatment** depending on the symptoms. Awareness is important for prevention and control of the infection.

