



**1. Consider the following statements, with reference to LHS 3154 Star:**

1. LHS 3154 is an ultra-cool dwarf star that's about 50 light years away from Earth.
2. It is about a thousand times less luminous than our sun and nine times less massive.
3. The planet, LHS 3154b, is 13 times more massive than Earth and about the mass of Neptune.

**How many of the statements given above are correct?**

- (A) Only one
- (B) Only two
- (C) All three
- (D) None

**Answer:** (C)

**Explanation:** LHS 3154 is an ultra-cool dwarf star that's about 50 light years away from Earth. It is about a thousand times less luminous than our sun and nine times less massive. The planet, LHS 3154b, is 13 times more massive than Earth and about the mass of Neptune. It is classified as an M dwarf, which is the least massive spectral type of star. In early 2020, astronomers observed a periodic shift in LHS 3154's spectrum every 3.7 days. This indicated that the star was being wobbled by the gravitational pull of a planet in a close orbit. LHS 3154 has a planet called LHS 3154 b that orbits it. Hence, all statements are correct.

**2. Consider the following statements, with reference to Akkadi Saalu:**

1. Akkadi Saalu is an intercropping system that has been in traditional practice in Karnataka.
2. It is a biodiversity based ecological farming practice with zero chemical fertilisers, zero chemical pesticides and minimal use of ground water.
3. It involves intercropping with a combination of legumes, pulses, oilseeds, trees, shrubs and livestock that improves the health of the soil.

How many of the statements given above are correct?

- (A) Only one
- (B) Only two

- (C) All three
- (D) None

**Answer:** (C)

**Explanation:** The recently released report by the FAO suggests that use of traditional farming practices including Akkadi Saalu could reduce the escalating human and environmental costs of producing food. Akkadi Saalu is an intercropping system that has been in traditional practice in Karnataka. It is diversity based ecological farming practice that integrates multi-cropping with livestock, native seeds, soil enrichment, organic fertilizers and bio-markers as indicators of crop health. It helps to preserve life in the soil by reducing the use of pesticides. It is a traditional, biodiversity based ecological farming practice with zero chemical fertilisers, zero chemical pesticides and minimal use of ground water. It involves intercropping with a combination of legumes, pulses, oilseeds, trees, shrubs and livestock that improves the health of the soil. It is built on proven ecological principles integrated into locally adopted farming systems and innovations like BioChar. Akkadi Saalu helps farmers make the best use of land which depends on rains. Hence, statement 1 is not correct.

**3. With reference to Endothelial Cells, consider the following statements:**

1. Endothelial cells are thin, wafer-like cells that line the inside of all blood vessels in the body.
2. They form a double cell-thick layer called the endothelium.
3. They are the secondary cell type that comes into contact with blood.

**How many of the statements given above are correct?**

- (A) Only one
- (B) Only two
- (C) All three
- (D) None

**Answer:** (A)

**Explanation:** Recently, the scientists have discovered a molecular mechanism that reins in the overgrowth of blood vessels by regulating endothelial cell size and the mTORC1 signaling pathway. Endothelial cells are thin, wafer-like cells that line the inside of all blood vessels in the body. They form a single cell-thick layer called the endothelium. They are the primary cell type that comes into contact with blood. They also organize the growth and development of



connective tissue cells that form the surrounding layers of the blood-vessel wall. Hence, only statement 1 is correct.

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

1. It is a disorder characterised by gallbladder stones.
2. It is most usually caused by a chemical imbalance inside the gallbladder's contents.

**Which of the above statements is/are correct?**

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

**Answer:** (C)

**Explanation:** A new study offers light on the complicated relationship between serum lipids, lipid-modifying targets, and cholelithiasis. Cholelithiasis is the medical term for gallstones. It is a prevalent hepatobiliary disorder that primarily affects Western people. It is a significant risk factor for cholangiocarcinoma, a kind of bile duct cancer. Gallstones are hardened digestive fluid deposits that occur in the gallbladder. The gallbladder is a tiny, pear-shaped organ located under the liver that stores bile produced by the liver. Bile is a digestive fluid composed of cholesterol, bile salts, and bilirubin that enters the small intestine via the cystic and common bile ducts to aid in fat digestion. Cholelithiasis is most usually caused by a chemical imbalance inside the gallbladder's contents, in which the bile includes too much cholesterol or bilirubin. Abdominal pain in the upper right or central abdomen is the most typical sign of cholelithiasis. Treatment options include medicines and surgical procedures. Hence, both statements are correct.

**5. It is situated in Southeast Asia and is bordered on the north and north-east by China, on the east and south-east by Laos and Thailand, on the south by the Andaman Sea and the Bay of Bengal and on the west by Bangladesh and India.**

**Above paragraph described about which of the following country?**



- (A) Combodia
- (B) North Korea
- (C) Brunei
- (D) Myanmar

**Answer:** (D)

**Explanation:** Myanmar, formerly known as Burma, is a Southeast Asian nation bordered by India, Bangladesh, China, Laos and Thailand. It is a country of great ethnic diversity, with over 135 distinct ethnic groups. The majority of the population is Buddhist, but there are also significant Christian, Muslim and Hindu minorities. Recently, in the eastern city of Loikaw in Myanmar, pro-democracy fighters navigated through the streets in a worn-out pickup truck.