

**Q: Consider the following statement regarding Piezoelectricity:**

1. It is a material known for its association with static electricity.
2. This property is the result of their unusual crystal structures.
3. Molecules are not distorted even if stress is applied.

Choose the correct option from the codes given below:

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

Ans: a

Explanation:

- The term “piezoelectric” originates from the Greek words “piezein,” meaning ‘to squeeze’, and “elektron”, for amber, a material known for its association with static electricity.
- Piezoelectricity is a remarkable phenomenon whereby some materials, including quartz, ceramics such as lead zirconate titanate (PZT), and even certain biological substances like bone and tendons, can generate an electric charge in response to mechanical stress.
- This property is the result of their unusual crystal structures.
- Usually, the charges on atoms in the molecules that make them up are symmetric on two sides of an axis.
- When some stress is applied, the molecule becomes distorted, and the asymmetry of charges gives rise to a small electric current.
- Some materials also display an inverse piezoelectric effect, where the application of an electric current induces a mechanical deformation.

**Q: Consider the following statement regarding Cholelithiasis:**

1. It is a major risk factor for blood cancer.
2. Gallstones are hardened deposits of digestive fluid that form in the gallbladder.
3. It is a common hepatobiliary condition affecting mostly Western populations.

Choose the correct option from the codes given below:

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

Ans: b

Explanation:

- The condition of having gallstones is called cholelithiasis.
- It is a common hepatobiliary condition affecting mostly Western populations.
- It is a major risk factor for cholangiocarcinoma, which is a kind of bile duct cancer.
- Gallstones are hardened deposits of digestive fluid that form in the gallbladder.
- The gallbladder is a small, pear-shaped organ that lies beneath the liver and stores bile made by the liver.
- Bile is a digestive fluid made of cholesterol, bile salts, and bilirubin and gets released into the small intestine through the cystic duct and common bile duct to aid in fat digestion.
- The exact cause of cholelithiasis is not entirely clear. Cholelithiasis most commonly results from a chemical imbalance within the contents of the gallbladder in which the bile contains too much cholesterol or bilirubin.

**Q: Consider the following statement regarding sub-Neptune planets:**

1. They could be rocky worlds with thick atmospheres of hydrogen and helium gas.
2. These planets have radii between those of the Earth and Neptune.

Choose the correct option from the codes given below:

- a) 1 Only
- b) 2 Only
- c) 1 and 2
- d) None of the above

Ans: c

Explanation:

- sub-Neptune planets are the most commonly observed types of planets in our galaxy.
- They could be rocky worlds with thick atmospheres of hydrogen and helium gas, or perhaps composed of rock and ice with warm, water-rich atmospheres.
- These planets have radii between those of the Earth and Neptune.

**Q: Consider the following:**

1. Advaidananda Sabha
2. Dravida Mahajana Sabha
3. Sakya Buddhist Society in Madras

Which of the above event is associated with Iyothee Thass Pandithar:

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

Ans: d

Explanation:

- Iyothee Thass Pandithar was born on 20 May 1845 in Madras presidency.
- He was a prominent anti-caste activist and a practitioner of Siddha medicine.
- Association with tribal people: In the 1870s, Iyothee Thass organised the Todas and other tribes of the Nilgiri Hills into a formidable force for the freedom movement.
- In 1876, Thass established the Advaidananda Sabha and launched a magazine called Dravida Pandian in collaboration with Rev. John Rathina.
- He established the "Dravida Mahajana Sabha " in 1891 along with Rettamalai Srinivasan.
- He established the Sakya Buddhist Society in Madras, with branches all over South India

**Q: Consider the following statement regarding Codex Alimentarius Commission:**

1. It is an international food safety and quality standard-setting body.
2. It was created by the World Health Organisation and Food and Agriculture Organisation.
3. Currently, it has standards for Sugarcane and wheat.

Which of the above event is associated with Iyothee Thass Pandithar:

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

Ans: a

Explanation:

- Codex Alimentarius Commission is an international food safety and quality standard-setting body.
- It was created by the World Health Organisation and Food and Agriculture Organisation of the United Nations in May 1963.
- Objective: Protecting consumer's health and ensuring fair practices in food trade.
- Members: It consists of 189 member countries.
- Membership of the Commission is open to all Member Nations and Associate Members of FAO and WHO which are interested in international food standards.

- The Commission meets in regular sessions once a year, alternating between Geneva and Rome.
- The programme of work of the Commission is funded through the regular budgets of WHO and FAO, with all work subject to the approval of the two governing bodies of the parent organisations.
- The Commission works in the six official languages of the UN.
- Currently, it has standards for sorghum and pearl millet.