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

1. It is an unmanned aerial vehicle with four rotors.
2. Air movement comes from Bernoulli's Principle.
3. The main principle behind the flight of a quadcopter is Newton's First Law of motion.

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:

- Quadcopters is an unmanned aerial vehicle (UAV) or drone with four rotors, each with a motor and propeller.
- The main principle behind the flight of a quadcopter is Newton's Third Law of motion, which states that for every action there's an equal and opposite reaction.
- A quadcopter's propellers push air downwards. This causes an opposite reaction called thrust that pushes the quadcopter upwards against gravity.
- Air movement comes from Bernoulli's Principle, with larger propeller blades and faster rotation creating more thrust.

**Q: Consider the following statement regarding Convention on Cluster Munitions**

1. India is a signatory to this convention.
2. It prohibits all use, stockpiling, production and transfer of cluster munitions.
3. Convention on Cluster Munitions was adopted in Dublin on 2008.

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:

- Convention on Cluster Munitions was adopted in Dublin on 30 May 2008 and opened for signature in Oslo on 3 December the same year.
- It prohibits all use, stockpiling, production and transfer of cluster munitions.
- Separate articles in the Convention concern destruction of stockpiles, clearance of contaminated areas, assistance to victims, submission of transparency reports, and adoption of domestic legislation.
- The Convention became binding international law when it entered into force on 1 August 2010.
- Till date a total of 123 States have joined the Convention – 111 States Parties and 12 Signatories.
- India is not a signatory to this convention.

**Q: Consider the following statement regarding Quantum Computing:**

1. It explains the behaviour of energy and material on the atomic and subatomic levels.
2. It is an area of computer science that uses the principles of quantum theory.

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:

- Quantum Computing is an area of computer science that uses the principles of quantum theory.
- Quantum theory explains the behaviour of energy and material on the atomic and subatomic levels.
- Quantum computers have the capability to sift through huge numbers of possibilities and extract potential solutions to complex problems and challenges.

**Q: Consider the following statement regarding Total Expense Ratio (TER):**

1. It is a measure of the total costs associated with managing and operating an investment fund.
2. It is also known as the net expense ratio or after reimbursement expense ratio.

3. It is used by investors to compare the costs of the scheme with its peers.

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: d
Explanation:

- Total Expense Ratio (TER) is a measure of the total costs associated with managing and operating an investment fund, such as a mutual fund.
- These costs consist primarily of management fees and additional expenses, such as trading fees, legal fees, auditor fees, and other operational expenses.
- The total cost of the fund is divided by the fund's total assets to arrive at a percentage amount, which represents the TER.
- TER is also known as the net expense ratio or after reimbursement expense ratio.
- It is used by investors to compare the costs of the scheme with its peers and also in relation to the returns available from that scheme.
- It is a key element in making an investment choice, as those funds which consistently show a high TER may not provide high returns, since high expenses tend to erode the returns generated.
- For example, if a fund generates a return of 7% for the year but has a TER of 4%, then the 7% gain is greatly diminished to roughly 3%.

**Q: Consider the following statement regarding recently developed new variety of wheat called PBW RS1:**

1. It contains high amylose starch content.
2. Amylose starch content known to reduce risks of type-2 diabetes and cardiovascular diseases.
3. Food prepared from its whole grain flour also have higher glycemic index.

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:

- Recently, the Ludhiana-based institution has developed a new variety of wheat called PBW RS1.
- PBW RS1contains high amylose starch content.
- Resistant starch (RS) won't cause an immediate and rapid rise in glucose levels.
- The high amylose and resistant starch, instead, ensure that glucose is released more slowly into the bloodstream.
- Amylose starch content known to reduce risks of type-2 diabetes and cardiovascular diseases.
- Food prepared from its whole grain flour also have lower glycemic index.