

IASbaba's Daily Quiz

October 17, 2017

Q.1) Consider the following statements about National e-Governance Services Ltd. (NeSL)

1. It is India's first information utility (IU) for bankruptcy cases under the Insolvency and Bankruptcy Code 2016.
2. It is owned and promoted by leading public institutions like State Bank of India, Life Insurance Corporation among others

Select the correct statements

- a) 1 Only
- b) 2 Only
- c) Both 1 and 2
- d) Neither 1 nor 2

Q.1) Solution (c)

National e-Governance Services Ltd (NeSL) became India's first information utility (IU) for bankruptcy cases under the Insolvency and Bankruptcy Code 2016. NeSL is owned by State Bank of India and Life Insurance Corporation Ltd., among others. Recently, the Insolvency and Bankruptcy Board of India (IBBI) eased ownership norms for setting up such utilities.

Source: <http://www.thehindu.com/todays-paper/tp-business/information-utility-under-the-ibc/article19867924.ece>

Q.2) Consider the following statements about Trap Crops

1. Trap crops are the plant stands that are grown to attract insects or other organisms to protect target crops from pest attack
2. It is economical but not an environmental friendly technique

Select the correct statements

- a) 1 Only
- b) 2 Only
- c) Both 1 and 2
- d) Neither 1 nor 2

Q.2) Solution (a)

October 17, 2017

Trap crops are the plant stands that are grown to attract insects or other organisms to protect target crops from pest attack. Protection may be achieved either by preventing the pests from reaching the crop or by concentrating them in certain part of the field where they can economically be destroyed.

The principle of trap cropping rests on the fact that virtually all pests show a distinct preference to certain crop stage. Manipulation of stand in time and space so that attractive host plants are offered at critical time in pests and the crop phenology leads to the concentration of the pests at the desired site, the crop.

Farmers are being motivated to utilize trap cropping because of the difficulties in cropping with the pest situations in other ways. Some times the cost of chemical pesticides and the number of treatments required is so high that more economical ways have to be developed, additionally; the pests have often evolved resistance to commonly used pesticides, which requires some alternative control strategies.

Further, motivations to use trap cropping are economical and environmental benefits are often associated with this strategy. Besides, its potential role in improving the environmental soundness, trap cropping techniques may have special preference of conventional agriculture to sustainable farming in developing countries.

Additionally, the increasing sector of organic farming also could exploit this strategy of pest control. Yet another function of trap crop is their use of attracting natural enemies of pest insects to the fields and concentrating them there to enhance naturally occurring biological control`.

The essential features of the trap cropping are that the trap crop must be attractive to the pest then the main crop, it should occupy small area as far as possible and it should be established an early or later or along with the main crop.

Trap cropping has indicated a great benefit interms of economic returns on an average of 10-30 per cent increase in net profits mainly resulting from reduced insecticide use and pest attack. Trap cropping is a useful strategy in the management of several pests in various cropping systems. It offers significant economic and environmental benefits and it can successfully integrated with cultural, biological and chemical control methods.

Q.3) Consider the following statements about fluorescence resonance energy transfer (FRET)

1. It is a mechanism describing energy transfer between two chromophores
2. It is known as a radiation less mechanism

Select the correct statements

- a) 1 Only
- b) 2 Only
- c) Both 1 and 2
- d) Neither 1 nor 2

Q.3) Solution (c)

Förster resonance energy transfer (FRET), fluorescence resonance energy transfer (FRET), resonance energy transfer (RET) or electronic energy transfer (EET) is a mechanism describing energy transfer between two light-sensitive molecules (chromophores). A donor chromophore, initially in its electronic excited state, may transfer energy to an acceptor chromophore through nonradiative dipole–dipole coupling. The efficiency of this energy transfer is inversely proportional to the sixth power of the distance between donor and acceptor, making FRET extremely sensitive to small changes in distance.

Measurements of FRET efficiency can be used to determine if two fluorophores are within a certain distance of each other. Such measurements are used as a research tool in fields including biology and chemistry.

FRET is analogous to near-field communication, in that the radius of interaction is much smaller than the wavelength of light emitted. In the near-field region, the excited chromophore emits a virtual photon that is instantly absorbed by a receiving chromophore. These virtual photons are undetectable, since their existence violates the conservation of energy and momentum, and hence FRET is known as a radiationless mechanism. Quantum electrodynamical calculations have been used to determine that radiationless (FRET) and radiative energy transfer are the short- and long-range asymptotes of a single unified mechanism.

In News:

- Researchers have utilised the overexpression of biotin receptors on cancer cells and enhanced production of thioredoxin reductase (TrxR) enzyme in cancer cells for cancer diagnosis.
- Breast and cervical cancer cell line studies shows encouraging results.
- The researchers developed a hybrid assembly by binding naphthalimide moiety to carbon dots using disulphide covalent bond.
- Naphthalimide analogues are used as anticancer agents.

October 17, 2017

- In the presence of normal amount of TrxR enzyme seen inside normal cells, the carbon dots behave as an energy donor and the naphthalimide moiety as an acceptor, thus establishing fluorescence resonance energy transfer (FRET).
- There is a typical yellow emission when irradiated with visible light.
- But in the presence of elevated levels of TrxR enzyme, which is seen in cancer cells, the disulphide covalent bond gets disrupted freeing the naphthalimide moiety from the surface of carbon dots.
- As a result, the FRET gets disrupted and there is blue emission when the cells are irradiated with visible light.
- In normal cells, the amount of TrxR enzyme is very little and hence the FRET mechanism is not eliminated, resulting in yellow emission.

Source: <http://www.thehindu.com/sci-tech/science/elevated-enzyme-for-cancer-diagnosis/article19861648.ece>

Q.4) Which of the following statements is/are correct?

- a) 'Tele Law' is a web based platform, through which interested lawyers can register themselves to volunteer pro bono services for the underprivileged litigants, who are unable to afford it.
- b) Nyaya Mitra scheme is aimed at reducing pendency of cases across selected districts, with special focus on those pending for more than 10 years.
- c) Both (a) and (b)
- d) Neither (a) nor (b)

Q.4) Solution (b)

Nyaya Mitra

- Nyaya Mitra Scheme, is aimed at reducing pendency of cases across selected districts, with special focus on those pending for more than 10 year.
- A retired judicial officer, or an executive officer with judicial experience, will be put in charge of assisting those suffering due to judicial delays.

TELE LAW

- Tele Law', is aimed at facilitating delivery of legal advice through an expert panel of lawyers – stationed at the State Legal Services Authorities (SLSA).
- The project would connect lawyers with clients through video conferencing facilities at CSCs, operated by para legal volunteers. The project would be launched across

October 17, 2017

1800 panchayats in Uttar Pradesh, Bihar, North Eastern States and Jammu & Kashmir.

Pro bono legal Services

The 'Pro bono legal services' initiative is a web based platform, through which interested lawyers can register themselves to volunteer pro bono services for the underprivileged litigants, who are unable to afford it. The Department of Justice has launched the online application for this initiative on its website doj.gov.in. Through this online portal, litigants from marginalised communities (including members of scheduled castes and scheduled tribes, women, children, senior citizens, persons with low income and persons with disabilities) can also apply for legal aid and advice from the pro bono lawyers.

Source: <https://economictimes.indiatimes.com/news/politics-and-nation/free-legal-aid-to-needy-may-become-a-key-criterion-for-lawyers-entry-into-judiciary/articleshow/61094772.cms>

Q.5) Consider the following statements about Fjord

1. A fjord is formed when a glacier cuts a U-shaped valley by ice segregation and abrasion of the surrounding bedrock.
2. The longest fjord in the world is Scoresby Sund in Greenland

Select the correct statements

- a) 1 Only
- b) 2 Only
- c) Both 1 and 2
- d) Neither 1 nor 2

Q.5) Solution (c)

It is a long, narrow inlet with steep sides or cliffs, created by glacial erosion.[clarification needed] There are many fjords on the coasts of Alaska, British Columbia, Chile, Greenland, Iceland, the Kerguelen Islands, New Zealand, Norway, Novaya Zemlya, Labrador, Nunavut, Newfoundland, Scotland, and Washington state.

The opening toward the sea is called the mouth of the fjord, and is often shallow. The fjord's inner part is called the sea bottom. If the geological formation is wider than it is long, it is not a fjord. Then it is a bay or cove.



IASbaba's Daily Quiz

October 17, 2017

The longest fjord in the world is Scoresby Sund in Greenland (350 km), but the Western Norway region (Fjord Norway) boasts the next two spots on the list, with the Sognefjord (203 km), and the Hardanger Fjord (179 km).

A fjord is formed when a glacier cuts a U-shaped valley by ice segregation and abrasion of the surrounding bedrock. Glacial melting is accompanied by the rebounding of Earth's crust as the ice load and eroded sediment is removed (also called isostasy or glacial rebound). In some cases this rebound is faster than sea level rise. Most fjords are deeper than the adjacent sea; Sognefjord, Norway, reaches as much as 1,300 m (4,265 ft) below sea level. Fjords generally have a sill or shoal (bedrock) at their mouth caused by the previous glacier's reduced erosion rate and terminal moraine. In many cases this sill causes extreme currents and large saltwater rapids (see skookumchuck). Saltstraumen in Norway is often described as the world's strongest tidal current. These characteristics distinguish fjords from rias (e.g. the Bay of Kotor), which are drowned valleys flooded by the rising sea. Drammensfjorden is cut almost in two by the Svelvik "ridge", a sandy moraine that during the ice cover was under sea level but after the post-glacial rebound reaches 60 meters above the fjord.

Source: <http://indianexpress.com/article/technology/science/melting-ice-affecting-marine-life-around-greenland-global-ocean-currents-study-4893345/>

