

December 19, 2017

Q.1) The Kangri is earthenware filled with glowing embers and encased in pretty handmade wicker baskets and is carried as a personal warmer. Kangri making is practiced in which of the following states?

- a) Jammu and Kashmir
- b) Himachal Pradesh
- c) Arunachal Pradesh
- d) Sikkim

Q.1) Solution (a)

Kangri-making is a cottage industry, providing employment to many men and women. The pot is supplied by the potter, while thousands of people produce the charcoal by burning twigs and leaves of different kinds of trees in autumn. Some people buy quality charcoal from bakers who use firewood ovens.

The best and costliest kangri, known as Charar Kangri as it is made in Charar town, 35 km from Srinagar, has thin twigs woven around in an easily recognisable design. The twigs are steeped in boiling water until soft and the bark peeled.

The kangri is a part of Kashmiri culture. For instance, parents give a specially designed pot to their daughter in the first winter after her wedding. Though the pot is still being used by many in both urban and rural areas, it is slowly losing out to electric and gas heaters. One ill-effect of the hot pot is rashes and burns.

Twigs are collected from deciduous shrubs, scraped and peeled and go through a process of soaking, drying, dying and are finally woven around the bowl-shaped earthenware.

The earthenware is decorated with colourful threads, mirror-work and sequins and is about six inches (150 mm) in diameter.

Kangris can be ignited by just 250 grams of charcoal; it is cheaper than oil, gas and wood-fired heaters and costs from Rs 70 (\$1.12) to Rs 1,500 (\$24).

The traditional fire-pot is an effective and economical heating arrangement in the modern era when electronic heating gadgets are available.

In the absence of electricity or load-shedding, it does not disappoint people and keeps them warm in harsh winters



Source: <http://www.thehindu.com/news/national/the-kangri-and-the-kashmiri/article21822794.ece>

Q.2) Which of the following is correctly matched?

Invasive Species	Native
1. Papaya Mealy Bug	Central America
2. Cotton Mealybug	Papua New Guinea

Select the correct code:

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

Q.2) Solution (a)

Paracoccus marginatus (Papaya Mealy Bug), which belongs to Mexico and Central America but is believed to have destroyed huge crops of papaya in Assam, West Bengal and Tamil Nadu.

Phenacoccus solenopsis (Cotton Mealybug) is a native of North America but has severely affected cotton crops in the Deccan.

Alien plant species such as Parthenium hysterophorus (cotton grass) and Lantana camara (Lantana) are known to harm agriculture and biodiversity; invasive animal species pose a threat to biodiversity and human well-being.

Source: <http://www.thehindu.com/sci-tech/energy-and-environment/biodiversity-under-alien-attack/article21823042.ece>

Q.3) Consider the following statements about Methylglyoxal

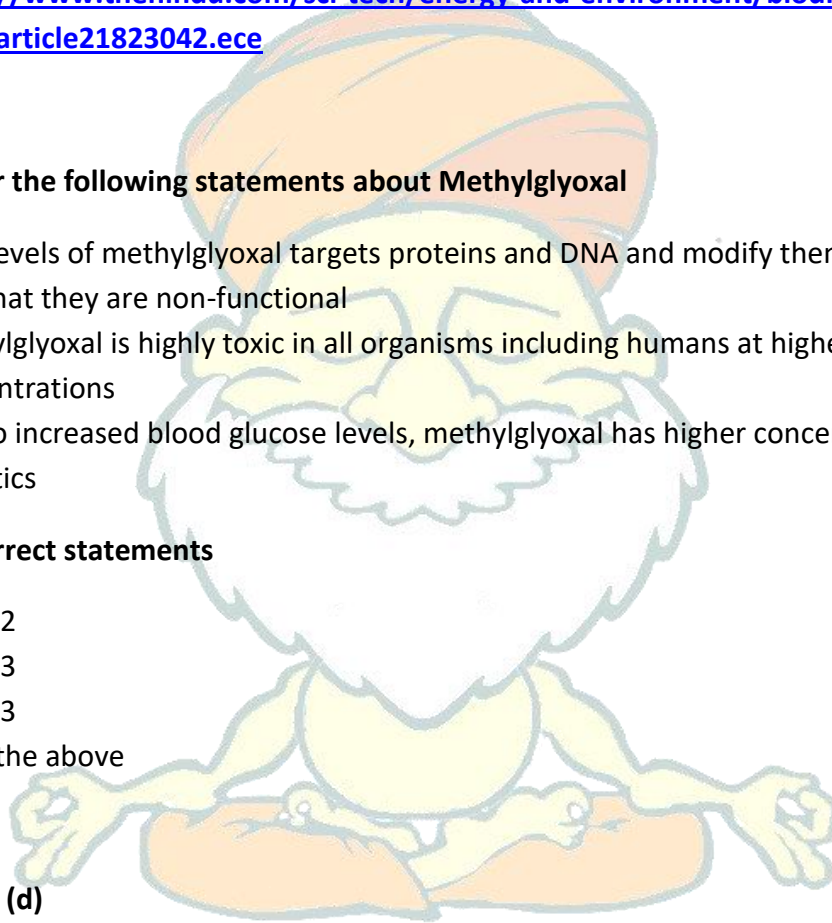
1. High levels of methylglyoxal targets proteins and DNA and modify them in such a way that they are non-functional
2. Methylglyoxal is highly toxic in all organisms including humans at higher concentrations
3. Due to increased blood glucose levels, methylglyoxal has higher concentrations in diabetics

Select the correct statements

- a) 1 and 2
- b) 2 and 3
- c) 1 and 3
- d) All of the above

Q.3) Solution (d)

It has been known that the accumulation of an aldehyde – methylglyoxal – above a certain level can be toxic in all organisms. “Under normal developmental conditions, methylglyoxal levels remain very low (30-75 microM) and this regulates processes such as cell proliferation and their survival, and control of toxins. Methylglyoxal is highly toxic in all organisms including humans at higher concentrations. “High levels of methylglyoxal targets proteins and DNA and modify them in such a way that they are non-functional.



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Due to increased blood glucose levels, methylglyoxal has higher concentrations in diabetics and has been linked to arterial atherogenesis. Damage by methylglyoxal to low-density lipoprotein through glycation causes a fourfold increase of atherogenesis in diabetics.

Although methylglyoxal has been shown to increase carboxymethyllysine levels, methylglyoxal has been suggested to be a better marker for investigating the association between AGEs with adverse health outcomes.

Methylglyoxal is a component of some kinds of honey, including manuka honey; it appears to have activity against *E. coli* and *S. aureus*.

News:

- Plants during their lifetime face biotic stress induced by living entities (pathogens) and abiotic stress caused by non-living entities (drought, osmotic stress, chemical or salt stress).
- Scientists have recently discovered a single gene whose expression controls the plants' response to both biotic and abiotic stress.
- Hsp31 is a heat shock protein found in the plants. Over expression of this protein renders them tolerant to stresses.
- Hsp31 protein is found to detoxify the methylglyoxal when it reaches higher concentration.
- The protein is similar to PARK7 protein in humans which is linked to the early onset of Parkinson's disease.

Source: <http://www.thehindu.com/sci-tech/science/one-gene-to-tackle-all-stresses/article21822553.ece>

Q.4) Consider the following statements about 'Kolleru Lake'

1. It is the largest brackish water lake in India
2. It spans in two states Andhra Pradesh and Telangana

Select the correct statements

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

Q.4) Solution (d)

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Kolleru Lake is one of the largest freshwater lakes in India located in state of Andhra Pradesh 15 kilometers away from the city of Eluru. Kolleru is located between Krishna and Godavari deltas. The lake was declared as a wildlife sanctuary in November 1999 under India's Wildlife Protection Act of 1972, and designated a wetland of international importance in November 2002 under the international Ramsar Convention.

Source: <http://www.thehindu.com/news/national/andhra-pradesh/lone-great-white-pelican-a-visual-treat-in-kolleru/article21828644.ece>

Q.5) Consider the following statements about Great White Pelican

1. It is listed under Appendix I of the Convention on Migratory Species
2. India is one of the breeding ground for the species
3. It is listed an 'vulnerable' under IUCN List

Select the correct statements

- a) 1 and 2
- b) 2 and 3
- c) 1 and 3
- d) All of the above

Q.5) Solution (a)

The species is listed under Appendix I of the Convention on Migratory Species; Appendix II of the Bern Convention; Annex I of the Birds Directive. In its European range it occurs within 43 Important Bird Areas. In the EU it is listed within 108 Special Protection Areas.

The breeding season commences in April or May in temperate zones, is essentially all year around in Africa and runs February through April in India. Large numbers of these pelicans breed together in colonies.

IUCN Status – Least Concern

Source: <http://www.thehindu.com/news/national/andhra-pradesh/lone-great-white-pelican-a-visual-treat-in-kolleru/article21828644.ece>

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