

Q: Consider the following statement regarding QR codes:

1. It is a graphical representation of digital data.
2. The data in it is a series of dots in a square grid.
3. The American Company invented the first QR Code system in 1994.

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:

- A QR Code is a graphical representation of digital data that can be printed and scanned by a smartphone or other device.
- The data in a QR code is a series of dots in a square grid. Each dot represents a one and each blank a zero in binary code, and the patterns encode sets of numbers, letters or both, including URLs. At its smallest this grid is 21 rows by 21 columns, and at its largest it is 177 rows by 177 columns
- In most cases, QR codes use black squares on a white background, making the dots easy to distinguish. However, this is not a strict requirement, and QR codes can use any colour or shape for the dots and background.
- The first QR Code system was invented in 1994 by the Japanese company and Toyota subsidiary Denso Wave. This was done as they needed a more accurate way to track vehicles and parts during the manufacturing process.

Q: Consider the following statement regarding YUVA 2.0:

1. The implementing agency of this scheme in Ministry of Skill Development and Entrepreneurship.
2. It is an Author Mentorship programme.
3. National Book Trust will publish the books prepared under this scheme.

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:

- Recently, the Ministry of Education, Department of Higher Education, launched YUVA 2.0 - Prime Minister's Scheme for Mentoring Young Authors.
- It is an Author Mentorship programme to train young and budding authors (below 30 years of age) in order to promote reading, writing and book culture in the country, and project India and Indian writings globally.
- This scheme will thus help to develop a stream of writers who can write on a spectrum of subjects to promote Indian heritage, culture and knowledge system.
- The National Book Trust, India, under the Ministry of Education as the Implementing Agency will ensure phase-wise execution of the Scheme under well-defined stages of mentorship.
- The books prepared under this scheme will be published by National Book Trust, India, and will also be translated into other Indian languages ensuring the exchange of culture and literature, thereby promoting 'Ek Bharat Shreshtha Bharat'.

Q: Consider the following statement regarding the objectives of India's Mangalyaan mission:

1. To study Martian atmosphere.
2. It aims to explore Martian surface features, mineralogy, morphology using indigenous scientific instruments.

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:

- India's Mangalyaan mission is aimed at studying Martian atmosphere.
- Its objective is to explore Martian surface features, mineralogy, morphology and atmosphere using indigenous scientific instruments.
- A crucial objective of MOM was to develop technologies required in planning, designing, management and operations of an interplanetary mission.

Q: Recently, a team of researchers identified a strong correlation between the accelerated rate of melting ice and the rate of ocean acidification. Consider the following statement:

1. According to researchers, Arctic Sea will no longer survive after 2050.
2. Seawater is normally alkaline.
3. Water under the sea ice had a deficit of carbon dioxide.

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:

- The study is the first analysis of Arctic acidification that includes data from 1994 to 2020.
- They flagged the changing chemistry of the western region of the Arctic Ocean after discovering acidity levels increasing three to four times faster than ocean waters elsewhere.
- Scientists have predicted that by 2050, Arctic sea ice in this region will no longer survive the increasingly warm summers.
- Seawater is normally alkaline, with a pH value of around 8.1.
- They point to sea-ice melt as the key mechanism to explain this rapid pH decrease, because it changes surface water in three primary ways.
- First, the water under the sea ice, which had a deficit of carbon dioxide, now is exposed to the atmospheric carbon dioxide and can take it up freely.

Q: Nord Stream Gas pipeline runs under which among the following Sea?

- a) Baltic Sea
- b) Black Sea
- c) Caspian Sea
- d) Adriatic Sea

Ans: a

Explanation:

- The Nord Stream pipelines have been at the centre of geopolitical tensions in recent months as Russia cut gas supplies to Europe in suspected retaliation against Western sanctions following its invasion of Ukraine.
- The \$7.1 (€7.4) billion Nord Stream 1 subsea pipeline, having two lines running alongside one another, has been operational since 2011, and is the largest single supply route for Russian gas to Europe.
- The 1,224 km-long lines run under the Baltic Sea, starting from near S.t Petersburg in Russia and Lubmin in eastern Germany, and have a combined capacity of 55 billion cubic metres (bcm).