

QUESTIONS & SOLUTIONS

1. With regard to the Western Himalayas and the Eastern Himalayas, consider the following

1. The ranges of the Eastern Himalayas are more continuous compared to Western Himalayas
2. The Western Himalayas receive most of the precipitation in the winter months and the Eastern Himalayas in the summer months
3. Eastern Himalayas are much greener and dense compared to Western Himalayas

Choose the correct answer using the codes below.

1. 1 and 2 only
2. 2 and 3 only
3. 1 and 3 only
4. All of the above

Solution: 2

Western Himalaya refers to the western half of the Himalayan Mountain region, stretching from Badakhshan in northeastern Afghanistan/southern Tajikistan, through Kashmir to Nepal. Eastern Himalaya is situated between Central Nepal in the west and Myanmar in the east, occupying southeast Tibet in China, Sikkim, North Bengal, Bhutan and North-East India.

The western Himalayas consists of the most continuous range and the loftiest peaks and compared to eastern Himalayas. The western Himalayas receive more precipitation from northwest in the winters, and eastern Himalayas receive more precipitation from south-eastern monsoon in the summers. Due to higher temperature and perception, the Eastern Himalayas are far greener with forests than the Western Himalaya.

2. Consider the following statements

1. The peninsular plateau is composed mainly of igneous and metamorphic rocks
2. The Garo, Khasi and Jaintia Hills form a part of peninsular block.
3. The peninsular plateau is the oldest and most stable landmass in India, devoid of earthquakes or volcanic activity.

Choose the correct answer using the codes below.

1. 1 and 2 only

2. 2 and 3 only
3. 1 and 3 only
4. All of the above

Solution: 1

The central-western parts of India, particularly Gujarat (in 1819, 1956 and 2001) and Maharashtra (in 1967 and 1993) have also experienced some severe earthquakes. Earth scientists have found it difficult to explain the occurrence of earthquakes in one of the oldest, most stable and mature landmass of Peninsular block for a long time. Recently, some earth scientists have come up with a theory of emergence of a fault line and energy build-up along the fault line represented by the river Bhima (Krishna) near Latur and Osmanabad (Maharashtra) and the possible breaking down of the Indian plate.

3. New Moore Island was recently in news because

1. of the maritime dispute between India and Sri Lanka on Kachatheevu islands
2. of the maritime dispute between India and Bangladesh
3. of the alarming decline in the population of dolphins and whales there
4. of the alarming decline in the area of mangroves and coral reefs there

Solution: 2

The island is located in the coastal, shallow Bay of Bengal immediately south of the international border river, the Hariabhanga. The island was claimed by both Bangladesh and India, although neither country established any permanent settlement there because of the island's geographical instability.

Bangladesh claims the settlement of the boundaries between Bangladesh and India has been reached on the basis of Radcliffe Award. Bangladesh took these disputes to the PCA in 2009.

Recently, the dispute came to an end as the **Permanent Court of arbitration** gave final verdict regarding this dispute allotting a large maritime area to Bangladesh about 32,000 sq. kms. The **delimitation award** is binding on both the parties and is not subject to further appeal. But, New Moore Island (or South Talpatti Island to the Bangladesh) has fallen in India's part of the Bay of Bengal.

4. Peninsular rivers in India are not flooded as much as the Himalayan rivers. The reasons can be?

1. India's peninsular rivers have relatively steep gradients.

2. There is little variation in flow from the dry to wet seasons.
3. Most rivers do not form deltas.

Choose the correct answer using the codes below.

1. 1 and 2 only
2. 2 and 3 only
3. 1 and 3 only
4. 1 only

Solution: 4

India's peninsular rivers have relatively steep gradients and thus rarely give rise to floods of the type that occur in the plains of northern India, despite considerable variations in flow from the dry to wet seasons.

Forming Delta or not is irrelevant to the flooding of rivers. It depends more on the river's silt load, water volume flow, and gradient of flow.

5. The Himalayan Mountains are tectonic in origin, dissected by fast-flowing rivers which are in their youthful stage. Which of the following features made by rivers can be seen there?

1. Gorges
2. V-shaped valleys
3. Rapids
4. Waterfalls

Choose the correct answer using the codes below.

1. 1, 2 and 4 only
2. 1, 2 and 3 only
3. 3 and 4 only
4. All of the above

Solution: 4

The Himalayas along with other Peninsular mountains are young, weak and flexible in their geological structure unlike the rigid and stable Peninsular Block. Consequently, they are still subjected to the interplay of exogenic and endogenic forces, resulting in the development of faults, folds and thrust plains. These mountains are tectonic in origin, dissected by fast-

flowing rivers which are in their youthful stage. Therefore, various landforms like gorges, V-shaped valleys, rapids, waterfalls, etc. are indicative of this stage. These are both due to the speed of the rivers as well as the weak geological structure.

6. The Kashmir Himalayas are famous for Karewa formations, which are useful for the cultivation of

1. Zafran, a local variety of saffron
2. buckwheat, a local nutritional coarse grain
3. turnips, a local health supplement
4. All of the above

Solution: 1

The valley of Kashmir has many types of soils like: Gurti (clay), Bahil (Loam), Sekil (Sandy), Nambaal (Peats), Surzamin, Lemb, Floating garden soils and **Karewa soils**.

Karewa formations are lake-laid clays and shales. These are lacustrine (lake related) deposits and appear like flat mounds on the margin of high mountains. Below these karewas is spread the alluvium of the Jehlum. The highest karewa is near the Pir Panjal.

7. The British introduced tea plantations in the Darjiling and Sikkim Himalayas looking at some of the favourable conditions which were

1. Steep slopes
2. thick soil cover with low organic content
3. well distributed rainfall
4. mild winters

Choose the correct answer using the codes below.

1. 1, 2 and 4 only
2. 1, 2 and 3 only
3. 3 and 4 only
4. All of the above

Solution: 3

Tea plantation cannot grow in steep slopes, it requires moderate slopes. Moreover, soil with high organic content is needed for tea plantation. Moreover, mild winter and well-

distributed rainfall made the Darjeeling and Sikkim Himalayas an ideal destination for the British to grow tea plantations.

8. The Tarai region of the Northern plains supports luxurious growth of natural vegetation and varied wild life population. This is because

1. Re-emerging rivers from Bhabhar flow in undemarcated channels here creating marshy and swampy conditions
2. all fertile coarse load is deposited at Tarai region after rivers re-emerge from Bhabhar region
3. the Tarai region is crossed by large Himalayan rivers which regularly deposit silt and clay here
4. Both 1 and 3

Solution: d)

Bhabhar is a narrow belt ranging between 8-10 km parallel to the Shiwalik foothills at the break-up of the slope. As a result of this, the streams and rivers coming from the mountains deposit heavy materials of rocks and boulders, and at times, disappear in this zone. South of the *Bhabhar* is the *Tarai* belt, with an approximate width of 10-20 km where most of the streams and rivers re-emerge without having any properly demarcated channel, thereby, creating marshy and swampy conditions known as the *Tarai*. This has a luxurious growth of natural vegetation and houses a varied wild life.

The Terai is crossed by the large perennial Himalayan rivers Yamuna, Ganges, Sarda, Karnali, Narayani and Kosi that have each built alluvial fans covering thousands of square kilometres below their exits from the hills.

9. Consider the following statements about the Western and Eastern Ghats.

1. Western Ghats are comparatively higher in elevation than Eastern ghats.
2. Western Ghats are more continuous than the Eastern Ghats as the latter is eroded by several east flowing rivers.
3. The Eastern and the Western Ghats meet each other at the Nilgiri hills.

Choose the correct answer using the codes below.

1. 1 and 2 only
2. 2 and 3 only
3. 1 and 3 only
4. All of the above

Solution: 4

Most of the Peninsular rivers have their origin in the Western Ghats. Eastern Ghats comprising the discontinuous and low hills are highly eroded by the rivers such as the Mahanadi, the Godavari, the Krishna, the Kaveri, etc. Some of the important ranges include the Javadi hills, the Palconda range, the Nallamala hills, the Mahendragiri hills, etc. The Eastern and the Western Ghats meet each other at the Nilgiri hills.

10. Consider the following statements with regard to Western coastal plain

1. The western coastal plains provides natural conditions for the development of ports and harbours
2. The rivers flowing through western coastal plains do not form any deltas

Choose the correct answer using the codes below.

1. 1 only
2. 2 only
3. Both 1 and 2
4. None of the above

Solution: 3

The western coastal plains are an example of submerged coastal plain. Because of this submergence it is a narrow belt and provides natural conditions for the development of ports and harbours. Kandla, Mazagaon, JLN port Navha Sheva, Marmagao, Mangalore, Cochin, etc. are some of the important natural ports located along the west coast. The rivers flowing through the western coastal plain do not form any delta.

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11. Aditya-1 is a spacecraft, whose mission is to study the 'Sun'. It will study?

1. Sun's corona
2. Sun's photosphere
3. Sun's chromospheres

Select the correct code

1. 1 only
2. 1 and 3

3. 2 only
4. All

Solution: 1

<https://directory.eoportal.org/web/eoportal/satellite-missions/a/aditya-1>

12. With reference to 'Phyto-chemicals', consider the following

1. These are chemical compounds, naturally occurring in plants and animals.
2. They possess antioxidant and hormone like activity.
3. They can be found in apples, tea and carrot
4. They have potential to treat cancer, cardiovascular diseases, diabetes etc

Select the correct codes

1. 1,2 and 3
2. 1,2 and 4
3. 2,3 and 4
4. 1,2,3 and 4

Solution: 3

Explanation: Phyto-chemicals are found only in Plants.

<http://pib.nic.in/newsite/efeatures.aspx>

<http://en.wikipedia.org/wiki/Phytochemical>

13. Which of the following international agreement is/are related to 'Engineering'?

1. Washington Accord
2. Sydney Accord
3. Dublin Accord

Select the correct code

1. 1 and 2
2. 2 and 3
3. Only 1
4. 1, 2 and 3

Solution: 4

<http://www.thehindubusinessline.com/news/india-becomes-permanent-member-of-washington-accord/article6112160.ece>

<http://www.ieagreements.org/dublin/>

<http://www.ieagreements.org/sydney/>

14. With reference to Light Water Reactor, consider the following

1. Pressurized water reactor and Boiling water reactor is a subtype of LWR
2. The fuel used is of liquid form of Uranium-235
3. Normal water is used as coolant and moderator

Correct statement is/are

1. 1 and 2
2. Only 1
3. Only 2
4. 1 and 3

Solution: 4

Explanation: Uranium used is solid in the form of pellets not liquid

15. Bollgard technology is associated with which crop?

1. Cotton
2. Wheat
3. Rice
4. Pulse

Solution: 1

16. 'Globally, Preterm Birth (PTB) is the single largest cause of neonatal deaths'. Consider the following statements wrt PTB

1. A birth that takes place before the mother has been pregnant for 7 months construes a preterm birth.
2. India has the highest number of PTB worldwide.
3. Major reason of PTB is the lack of healthcare facilities in the country.

Identify the incorrect statement/s

1. Only 3
2. 1, 2 and 3
3. 1 and 3
4. 1 and 2

Solution: 3

Explanation:

Globally, Preterm Birth (PTB) is the single largest cause of neonatal deaths. A birth that takes place before the mother has been pregnant for at least 37 weeks construes a preterm birth. In India, among the total 27 million babies born annually, 3.6 million babies are born preterm, and over 300,000 of these preterm babies die each year because of associated complications. India, with its highest number of PTBs and the highest number of preterm deaths worldwide, contributes 25% of the overall global preterm related deaths. The effects of PTB extend beyond the early infancy with substantial long-term consequences in late childhood and adult life.

A major reason for our inability to significantly reduce the burden of preterm birth is that the causes of preterm birth are not fully understood. Preterm birth is likely caused by a combination of physical, environmental and biological factors. Biological factors appear to be the predominant causes that predispose a woman to deliver babies preterm.

17. With reference to Indian livestock, what are 'Gramapriya and Vanaraja'?

1. A breed of Chicken
2. A breed of Goat
3. Gramapriya is a breed of Chicken and Vanaraja is a breed of Goat
4. None

Solution: 1

18. Consider the following 'Deserts' of the world

1. Namib
2. Colorado Plateau
3. Kalahari
4. Atacama
5. Great Victoria
6. Patagonian

Which can be categorized in cold desert?

1. 1,2,3, 5 and 6
2. 2, 3 ,5 and 6
3. 1,2,4,5 and 6
4. 1, 2 ,4 and 6

Solution: 4

The cold Deserts are- Namib, Colorado Plateau, Atacama, Patagonian