

#### **GOVERNANCE**

## CAROTAR 2020

- The Customs (Administration of Rules of Origin under Trade Agreements) Rules, 2020 (CAROTAR, 2020), will come into force from 21st September 2020. It was notified on 21st August 2020.
- > The importers and other stakeholders were given a 30-day period to familiarise themselves with new provisions.

#### **Kev Points**

#### **Stricter Rules:**

- Importers will have to ensure that imported goods meet the prescribed 'rules of origin' provisions for availing concessional rate of customs duty under Free Trade Agreements (FTAs).
- ➤ Importers have to prove that imported products have undergone value addition of at least 35% in the countries of origin.
- Earlier, merely a country of origin certificate, issued by a notified agency in the country of export was sufficient to avail the benefits of FTAs.
- This was exploited in many cases, i.e. the FTA partner countries have been claiming to have produced the goods in question without having the necessary technological capacity for the required value addition.

#### **Reason for Stricter Rule:**

- The investigation into FTA imports in the last few years has revealed that the rules of origin, under respective FTAs, were not being followed in the true spirit.
- ➤ Customs officials suspect that China diverts its supplies to India through Association of Southeast Asian Nations (ASEAN) nations, abusing rules of origin, to illegally take advantage of duty-free market access under FTA.
- Major imports to India come from five ASEAN countries Indonesia, Malaysia, Thailand, Singapore and Vietnam.
- > The ASEAN FTA allows imports of most items at zero or concessional basic customs duty from the 10-nation bloc.
- ➤ Given the latest border standoff between India and China, the diversion may surge.

## Impact:

- ➤ The new rules will make the importer to correctly ascertain the country of origin, properly claim the concessional duty and assist customs authorities in smooth clearance of legitimate imports under FTAs.
- The domestic industry will be protected from misuse of FTAs.

## Additional information

#### Free Trade Agreement

It is an arrangement between two or more countries or trading blocs that primarily agree to reduce or eliminate customs tariff and non tariff barriers on substantial trade between them.

It covers trade in goods (such as agricultural or industrial products) or trade in services (such as banking, construction, trading etc.).

It also covers other areas such as intellectual property rights (IPRs), investment, government procurement and competition policy etc.

India has inked FTAs with several countries, including Japan, South Korea, Sri Lanka and ASEAN members.

#### Benefit:

By eliminating tariffs and some non-tariff barriers, FTA partners get easier market access into one another's countries.

Exporters prefer FTAs to multilateral trade liberalization because they get preferential treatment over non-FTA member country competitors.

# INTERNATIONAL RELATION

# Gilgit-Baltistan to became Pakistani Province

Recently, Pakistan has decided to elevate Gilgit-Baltistan's status to that of a full-fledged province.

➤ Gilgit-Baltistan is one of the disputed territories of India.

## **Key Points**

Current Status of Gilgit-Baltistan:



- > It is an autonomous region now and with this elevation, it will become the 5th province of the country.
- Currently, Pakistan has four provinces namely Balochistan, Khyber Pakhtunkhwa, Punjab, and Sindh.

#### **Chronology:**

- ➤ 1999: Pakistan's Supreme Court ruled that the people of Gilgit-Baltistan are Pakistani citizens and directed the federal government to start appropriate administrative and legislative measures.
- ➤ 2009: The Gilgit-Baltistan Empowerment and Self-Governance Order was introduced, whereby the Northern Areas were renamed as Gilgit-Baltistan and the region was given province-like status but without representation in Parliament.
- ➤ 2015: A committee constituted by the federal government proposed giving Gilgit-Baltistan the status of a province.
- ➤ 2018: A new order was introduced which transferred all powers of the Gilgit-Baltistan council to its assembly.
- ➤ This elevation will lead to adequate representation from the province on all constitutional bodies, including the National Assembly and the Senate.
- ➤ The Government will also start working on the Moqpondass Special Economic Zone (SEZ) under the China Pakistan Economic Corridor (CPEC).
- > SEZs work as an engine for economic growth supported by quality infrastructure complemented by an attractive fiscal package, both at the Centre and the State level, with the minimum possible regulations.

## Other Developments by China in Pakistan-occupied Kashmir under CPEC:

- Diamer-Bhasha Dam.
- ➤ Kohala hydropower Project.
- Azad Pattan Hydel Power Project.

#### **India's Stand:**

India has held that the Government of Pakistan or its judiciary has no locus standi on territories illegally and forcibly occupied by it.



- India completely rejects such actions and continued attempts to bring material changes in Pakistan occupied areas of the Indian territory of Jammu and Kashmir.
- While protesting Islamabad's efforts to bring material change in Pakistan occupied territories, India held that Pakistan should immediately vacate all areas under its illegal occupation.

#### China Pakistan Economic Corridor

- It is the flagship project of China's ambitious Belt and Road Initiative (BRI).
- > The bilateral project between Pakistan and China intends to promote connectivity across Pakistan with a network of highways, railways, and pipelines accompanied by energy, industrial and other infrastructure development projects.
- > Originally valued at USD 46 billion, the projects were worth over USD 60 billion as of 2017.
- It links the Western part of China (Xinjiang) to the Gwadar Port in Balochistan, Pakistan via Khunjerab Pass in Northern Pakistan.
- ➤ India has protested to China over the CPEC as it is being laid through Pakistan-occupied Kashmir.



#### Wetland conservation

Rajasthan Government is acting proactively to protect the wetland ecosystem of the state with 52 wetlands earmarked for time-bound development.

In Rajasthan, Sambhar Lake and Keoladeo Ghana National Park have the prestigious tag of 'Wetland of International Importance', by the Ramsar Convention on Wetlands.



#### **Kev Points**

Wetlands are defined as: "lands transitional between terrestrial and aquatic eco-systems where the water table is usually at or near the surface or the land is covered by shallow water"

## Importance:

# **Ecosystem and biodiversity support:**

- ➤ Wetlands are highly productive ecosystems that provide the world with nearly two-thirds of its fish harvest.
- ➤ Wetlands play an integral role in the ecology of the watershed. The combination of shallow water, high levels of nutrients is ideal for the development of organisms that form the base of the food web and feed many species of fish, amphibians, shellfish and insects.
- Wetlands' microbes, plants and wildlife are part of global cycles for water, nitrogen and sulphur. Wetlands store carbon within their plant communities and soil (carbon sequestration) instead of releasing it to the atmosphere as carbon dioxide.
- They provide habitat for animals and plants and many contain a wide diversity of life, supporting plants and animals that are found nowhere else.
- > They are also an important source of ground water recharge.

## **Human Dependence:** More than one billion people depend on them for a living.

- ➤ Wetlands are a vital source for food, raw materials, genetic resources for medicines, and hydropower.
- Many wetlands are areas of natural beauty and promote tourism and many are important to Aboriginal people.
- Also, they help in controlling the floods.

#### Threats to Wetlands:

- ➤ Urbanization: Wetlands near urban centres are under increasing developmental pressure for residential, industrial and commercial facilities. Urban wetlands are essential for preserving public water supplies.
- Agriculture: Vast stretches of wetlands have been converted to paddy fields. Construction of a large number of reservoirs, canals and dams to provide for irrigation significantly altered the hydrology of the associated wetlands.
- ➤ **Pollution:** Wetlands act as natural water filters. However, they can only clean up the fertilizers and pesticides from agricultural runoff but not mercury from industrial sources and other types of pollution.
- There is growing concern about the effect of industrial pollution on drinking water supplies and the biological diversity of wetlands.
- ➤ Climate Change: Increased air temperature; shifts in precipitation; increased frequency of storms, droughts, and floods; increased atmospheric carbon dioxide concentration; and sea level rise could also affect wetlands.
- > **Dredging and sand mining:** That is the removal of material from a wetland or river bed. Dredging of streams lowers the surrounding water table and dries up adjacent wetlands.
- ➤ Introduced Species: Indian wetlands are threatened by exotic introduced plant species such as water hyacinth and salvinia. They clog waterways and compete with native vegetation.

#### **Global Conservation Efforts:**

#### Ramsar Convention

- ➤ The Convention came into force in 1975 and is one of the oldest inter-governmental accord for preserving the ecological character of wetlands.
- > The Convention's mission is "the conservation and wise use of all wetlands through local and national actions and international cooperation, as a contribution towards achieving sustainable development throughout the world".
- India has 37 Ramsar Sites which are the Wetlands of International importance.

## Montreux Record

- Montreux Record is a register of wetland sites on the List of Wetlands of International Importance where changes in ecological character have occurred, are occurring, or are likely to occur as a result of technological developments, pollution or other human interference.
- Wetlands of India that are in Montreux Record: Keoladeo National Park (Rajasthan) and Loktak Lake (Manipur).
- > Chilka lake (Odisha) was placed in the record but was later removed from it.

## **Conservation Efforts by India:**

#### **National Plan for Conservation of Aquatic Ecosystems (NPCA):**

- ➤ NPCA is a single conservation programme for both wetlands and lakes.
- It is a centrally sponsored scheme, currently being implemented by the Union Ministry of Environment and Forests and Climate Change.
- ➤ It was formulated in 2015 by merging of the National Lake Conservation Plan and the National Wetlands Conservation Programme.
- > NPCA seeks to promote better synergy and avoid overlap of administrative functions.

#### Wetlands (Conservation and Management) Rules, 2017:

Nodal authority: As per the Wetlands Rules, the Wetlands Authority within a state is the nodal authority for all wetland-specific authorities in a state/UT for the enforcement of the rules.

#### Prohibited activities:

- > Setting up any industry and expansion of existing industries,
- Dumping solid waste or discharge of untreated wastes and effluents from industries and any human settlements, and
- Encroachment or conversion for non-wetlands uses.
- **Integrated Management Plan:** The guidelines recommend that the state/UT administration prepare a plan for the management of each notified wetland by the respective governments.
- ➤ **Penalties:** Undertaking any prohibited or regulated activities beyond the thresholds (defined by the state/UT administration) in the wetlands or its zone of influence, will be deemed violations under the Wetlands Rules. Violation of the Rules will attract penalties as per the Environment (Protection) Act, 1986.

#### SCIENCE AND TECHNOLOGY

## VAIBHAV Summit

- ➤ Vaishwik Bharatiya Vaigyanik (VAIBHAV) Summit will be inaugurated on 2nd October 2020 the birth anniversary of Mahatma Gandhi.
- ➤ It will be followed by online month-long deliberation sessions among researchers.

## **Key Points**

#### **About VAIBHAV Summit:**

- ➤ It is a global summit of Overseas and Resident Indian scientists and academicians.
- ➤ Key areas of discussion will include: quantum technologies, artificial intelligence and machine learning, communications technologies, computational and data sciences and aerospace technologies among others.

#### **Objectives:**

- ➤ To bring out the comprehensive roadmap to leverage the expertise and knowledge of global Indian researchers for solving emerging challenges.
- > To reflect in-depth on the collaboration and cooperation instruments with academia and scientists in India.
- > To create an ecosystem of Knowledge and Innovation in the country through global outreach.
- ➤ Organisers: The Summit is a joint effort of various Science & Technology (S&T) and Academic organisations, including Department of S&T, Defence Research and Development Organisation (DRDO).

#### Significance:

- ➤ To boost the innovation ecosystem in India, VAIBHAV will add a new dimension to Atal Innovation Mission (AIM).
- AIM is Government of India's flagship initiative to promote a culture of innovation and entrepreneurship in the country.
- The summit seeks active support and ideation from Indian Diaspora for developing skills of Indian aspirants in alignment with the New Educational Policy.
- NEP 2020 aims to pave the way for transformational reforms in school and higher education systems in the country.
- ➤ With Indian roots, global outlook and experience, accomplished scientists, researchers and academicians of Indian descent, around the world can play a vital part in the "Aatmanirbhar Bharat" initiative.
- ➤ The initiative is based on 5 pillars- Economy, Infrastructure, System, Vibrant Demography and Demand.



#### Other Government Initiatives involving Overseas Indian:

- ➤ Pravasi Bharatiya Divas (PBD) is celebrated on 9th January every year to mark the contribution of Overseas Indian community in the development of India.
- ➤ Know India Program (KIP) is a flagship initiative of the Ministry of External Affairs (MEA) for diaspora engagement which familiarizes Indian-origin youth (18-30 years) with their Indian roots and contemporary India.
- ➤ VAJRA (Visiting Advanced Joint Research) Faculty Scheme of the Department of S&T is a dedicated program exclusively for overseas scientists and academicians with emphasis on Non-resident Indians (NRI) and Persons of Indian Origin (PIO)/Overseas Citizen of India (OCI) to work as adjunct/visiting faculty for a specific period of time in Indian Public funded academic and research institutions.

## INDIAN AGRICULTURE

# World Bamboo Day

World Bamboo Day is celebrated every year on 18th September.

➤ Theme of 2020: Bamboo Now

## **Key Points**

- **World Bamboo Day :** It was officially established by the World Bamboo organization at the 8th World Bamboo Congress held in Bangkok in 2009.
- ➤ World Bamboo Organization: It was set up at the 1992 International Bamboo Congress in Japan.
- > It is an international coordinating body for bamboo practitioners dedicated to promoting the use of bamboo and bamboo products for the sake of the environment and economy.

## **Properties of Bamboo**

- ➤ Versatile Uses: Bamboo can be used in 1,500 different ways including as food, a substitute for wood, building and construction material, for handicrafts and paper. Due to its versatile nature and multiple uses, it is also called 'poor man's timber'.
- Environmental Benefits: It can be planted to reclaim severely degraded sites and wastelands. It is a good soil binder owing to its peculiar clump formation and fibrous root system and hence also plays an important role in soil and water conservation.
- ➤ It is the fastest growing canopy, releasing 35% more oxygen than trees and can sequester 12 tonnes of carbon dioxide from per hectare.
- ➤ Use in Covid-19: Bamboo has been a key ingredient in new antimicrobial soaps and hand mists developed by scientists from the Philippines to fight the novel coronavirus.
- > Nutraceutical Bamboo Shoot: Bamboo shoots have nutraceutical properties, according to experts.
- The term 'nutraceutical' is used to describe medicinally or nutritionally functional foods.
- ➤ Bamboo shoots or bamboo sprouts are the edible newly sprouted canes of bamboo that form just under the soil and have a firm, crisp texture.
- Bamboo shoots are emerging as high-value and safe edibles and are also among the cheapest immunity boosters for increasing the human body's resistance to viral attacks.
- > The protein content in fresh bamboo shoots can range between 1.49-4.04%. They also contain 17 amino acids, eight of which are essential for the human body.

#### **Global Market:**

- The present global market of bamboo shoots is around 1,700 million USD.
- More than 3 million tonnes of bamboo shoots are consumed across the earth annually.
- According to the International Network for Bamboo and Rattan (INBAR), China exports 68% of the world's bamboo and rattan (a type of Palm Fibre) products valued at 1,112 million USD.
- > INBAR is a multilateral development organisation, founded in 1997 which promotes environmentally sustainable development using bamboo and rattan.

#### **Indian Scenario:**

- According to the National Bamboo Mission, India has the highest area (13.96 million hectares) under bamboo.
- > It is the second richest country after China in terms of bamboo diversity with 136 species.
- The annual production of bamboo in India is 14.6 million tonnes and the bamboo-rattan industry in the country was worth Rs. 28,005 crore in 2017.
- > Bamboo shoot production and consumption in India are confined mostly to the north-eastern States.



#### **Initiatives to Promote Bamboo**

- ➤ **Bamboo Clusters:** Recently, the Union Minister for Agriculture and Farmers' Welfare has virtually inaugurated 22 bamboo clusters in 9 states viz. Gujarat, Madhya Pradesh, Maharashtra, Odisha, Assam, Nagaland, Tripura, Uttarakhand and Karnataka.
- ➤ **MSP Hike:** Recently, the Central government has revised the Minimum Support Price (MSP) for Minor Forest Produce (MFP).
- ➤ MFP includes all non-timber forest produce of plant origin and includes bamboo, canes, fodder, leaves, waxes, resins and many forms of food including nuts, wild fruits, lac, tusser etc.
- ➤ National Bamboo Mission: The restructured NBM was launched in 2018-19 for the holistic development of the complete value chain of the bamboo sector and is being implemented in a hub (industry) and spoke model.
- ➤ It supports local artisans through locally grown bamboo species, which will actualise the goal of Vocal for Local and help increase the income of farmers, reducing dependency on imports of raw material.
- **Removal of Bamboo from 'Tree' Category:** The Indian Forest Act 1927 was amended in 2017 to remove bamboo for the category of trees.
- As a result, anyone can undertake cultivation and business in bamboo and its products without the need of a felling and transit permission.
- Farmer Producer Organisations (FPOs): 10,000 new FPOs will be formed in 5 years.
- FPOs engage in providing a range of assistance to farmers like imparting better farm practices, collectivisation of input purchases, transportation, linkage with markets, and better price realisation as they do away with the intermediaries.

#### **Way Forward**

- ➤ India needs to promote Bamboo Shoots as a super-food. It will help in alleviation of malnutrition and hunger.
- Value-addition in Bamboo shoots which enhances storage and diversification in new-age food products like vegetable protein concentrates can enhance its market potential and consumer acceptability.
- > States need to take forward the objectives of the National Bamboo Mission which would contribute to the Aatmanirbhar Bharat Abhiyan through Aatmanirbhar Krishi (self-reliant farming).

## IMPORTANT FACTS FOR PRELIM

# **Biotech-KISAN Programme**

As per the recent information shared by the Union Minister of Science and Technology in Lok Sabha, Biotech-Krishi Innovation Science Application Network (Biotech-KISAN) programme plays an important role in taking innovative biotechnologies to the farmers.

#### **Key Points**

- ➤ Biotech-KISAN programme is a farmer-centric scheme for farmers, developed by and with farmers under the Department of Biotechnology, Ministry of Science and Technology.
- ➤ It is a pan-India program, following a hub-and-spoke model and stimulates entrepreneurship and innovation in farmers and empowers women farmers.
- ➤ It has a unique feature to identify and promote local farm leadership in both genders. Such leadership helps to develop science-based farming besides facilitating the transfer of knowledge.

**Aim:** To understand the problems of water, soil, seed and market faced by the farmers and provide simple solutions to them.

- The programme links available science and technology to the farm by first understanding the problem of the local farmer and then providing scientific solutions to those problems.
- > The Biotech-KISAN hubs are expected to fulfil the technology required to generate agriculture and bio-resource related jobs and better livelihood ensuring biotechnological benefits to small and marginal farmers.
- Currently, there are a total of eight Biotech-KISAN Hubs in different Agro-climatic Zones.

#### **Biotechnology in Agriculture**

- ➤ Government supports research institutes, central and state agriculture universities for competitive research and development and demonstration activities in agriculture biotechnology including organic farming.
- ➤ It has been supported across the country including Aspirational Districts.



- During the last three years, approximately Rs. 310 crores have been invested in supporting the use of biotechnology in agriculture.
- The Integrated Human Resource Development Programme under the Department of Biotechnology has been implemented to provide biotechnology trained personnel in various fields including agriculture.

## **Alternative of Conventional Farming:**

- > The understanding of genetics and biotechnology could enable farmers to obtain maximum yield from their fields and to minimise the use of fertilisers and chemicals so as to avoid their harmful effects on the environment.
- ➤ Genetically Modified Organisms' (GMO) use is a possible solution and an alternative path to conventional farming.
- ➤ GMOs have made crops more tolerant to abiotic stresses, reduced reliance on chemical pesticides, reduced post-harvest losses, increased efficiency of mineral usage by plants and enhanced nutritional value of food.
- For example, Bt cotton, Bt Brinjal, etc.
- Genetically Modified Biopesticides are biologically based agents used for the control of plant pests.
- They can be living organisms (nematodes or micro-organisms) or naturally occurring substances, such as plant extracts or insect pheromones which can provide resistance to insects without the need for chemical insecticides.

## DAILY ANSWER WRITING PRACTICE

# Qns. Covid-19 looks like a "bend but won't break crisis" for globalization. Discuss how isolationism forced by Covid-19 pandemic has paused the growth of globalisation in the world.(250 words) Ans.

- Globalisation envisages a borderless world or seeks the world as a global village. It may be attributed
  by accelerated flow of goods, people, capital, information, and energy across borders, often enabled by
  technological developments.
- On the negative side, globalization has been criticised on account of exacerbating global disparities, the spread of international terrorism and cross-border organised crime, and allow for the rapid spread of disease.
- These trends pave way for an anti-globalization or protectionism sentiment, which may further amplify due to the spread of the Covid-19 pandemic.

#### Effect of Covid-19 on Globalization

- The ongoing phase of globalisation hasn't fully recovered from systemic shocks given by the Global Financial Crisis (GFC) of 2008-09. However, the spread of Covid-19 pandemic presents a challenge of a different magnitude.
- Global Economic Crisis: United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) in its annual Economic and Social Survey, held that the Covid-19 crisis is a challenge never seen before and it is going to be a bigger shock for the world economy than the GFC.
- This may act as a severe blow to liberal world order dominated by globalisation.
- Problem faced by Emerging and Developing Economies: The United Nations Conference on Trade and Development held that emerging and developing economies which rely on export-led growth, will now be severely impacted as the global economy contracts and the world opts protectionism policies.
- Disruption of Global Value Chain: Covid-19 crisis is having devastating repercussions for corporations and businesses that have benefited from economic interdependence supported by crossborder supply chains.
- China is the world's largest production base and lies at the heart of many supply chains. Since the outbreak of this coronavirus, many companies that had come to depend on China were hard hit.
- Bringing Back Import Substitution: From a risk analysis perspective, we could at the very least see
  a rapid trend towards moving from globally dispersed production bases back in favour of domestic
  facilities.
- Countries are reconfiguring their economies to look at import substitution with greater clarity now, as the perils and pitfalls of overdependence on foreign supplies become clear.
- Restriction on People to People Movement: National governments will have to weigh the risks of contagious diseases against the benefits of ease of travel or may have to consider stronger safeguards.
- In the short run, the World's Tourism industry will get affected even after the crisis gets over.

#### **DAILY CURRENT AFFAIRS**

#### **Prospects of Globalisation after the Pandemic**

- For the global growth patterns, the key lesson is that international flows tend to swing dramatically with macroeconomic cycles. In good times, they usually grow faster than GDP, and in bad times they shrink faster, too, as people and firms hunker down behind borders.
- Thus, after the pandemic as the economies grow, the trade patterns and globalisation will again become near normal.
- Although there may be some challenges in the global Supply chain, after the pandemic smooth business and transaction will again make a stronger supply chain with some changes in it.
- To make globalisation work even better, advanced economies like the United States can consider donating or lending (on concessionary terms) to a trust fund dedicated to helping poorer countries.
- At the same time, there is a need to work towards eliminating problems such as social and economic disparities caused by globalization.
- Once the world recovers from the crisis, it is crucial to create mechanisms to respond to disease through effective international cooperation.

#### Conclusion

- While the heat against globalisation has been simmering for a while, the pandemic has added fuel to the fire.
- However, we need to realise that globalisation has brought more good than harm. Therefore, nations must work together for a better future through globalisation, as climate change, pollution and global warming issues can only be tackled through collective action.

## **DAILY QUIZ**

- 1. With reference to Beach Environment & Aesthetics Management Services (BEAMS), consider the following statements:
  - 1. It has been launched under the Integrated Coastal Zone Management project.
  - 2. It is launched by the Union Ministry of Environment, Forest and Climate Change.
  - 3. Its objective is to protect & conserve coastal ecosystems & natural resources.

Which of the statements given above is/are correct?

- a) 1 and 3 only
- b) 1 and 2 only
- c) 2 and 3 only
- d) 1, 2 and 3
- 2. Consider the following statements:
  - 1. The basin of the Indus river system is shared only by India and Pakistan.
  - 2. The Indus Water Treaty allows India to use upto 20% water of eastern rivers.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2
- 3. With reference to the protection status of Sloth Bear, consider the following statements:
  - 1. It is listed as endangered under the IUCN Red List.
  - 2. It is protected under Schedule I of the Indian Wildlife Protection Act, 1972.

Which of the statements given above is/are correct?

a) 1 only

- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2
- 4. With reference to the Arsenic, consider the following statements:
  - 1. Arsenic is naturally present at high levels in the earth crust.
  - 2. It is a vital mineral for the human body.

Which of the above statements is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 and 2
- 5. India has signed a Free Trade Agreement with which of the following countries?
  - 1. Japan
  - 2. South Korea
  - 3. Sri Lanka

Select the correct answer using the code given below:

- a) 1 and 3 only
- b) 2 and 3 only
- c) 1 and 2 only
- d) 1, 2 and 3