Mains Q& A Test(6)- (11/09/2022)

Approach for the Mains Answer Writing

- **Start Your answer briefly introducing the Topic**
- **Discuss the Key points about the Topic with the Context in the Question**
- **Discuss Pro and Cons of the Topic (if applicable)**
- **Quote the Statistics (if there are any)**
- **Draw the Conclusion (Make Sure your answer doesn't support any particular view and make it look balanced)**

Define money bill and how is it different from financial bill? Discuss the criteria for a bill needs to fulfill be termed as a money bill (250 words)

Introduction

Money bills are which are concerned with financial matters like taxation, public expenditure, etc.
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Procedure for Money Bills

- These are those bills that contain provisions that deal with all or any of the matters specified in Article 110 of the Indian Constitution.
- This bill is presented only in Lok Sabha. It is introduced only by the Minister. Money bill is introduced only after the President's recommendation.
- This bill cannot be amended or rejected by Rajya Sabha.
- It can be detained by Rajya Sabha for the maximum period of 14 days. Money bill is then sent to the President for his approval only after being passed by the Lok Sabha.

There is no provision of joint sitting in case of money bill

Financial bill

- As per Article 117 of the Indian Constitution, financial bills are those bills which are concerned with financial matters but are different from money bills.
- Financial bills are further classified as Financial bills Categories A and B.

Category A Bills contain provisions dealing with any of the matters specified in sub- clause (a) to (f) of clause 1 of **Article 110 Indian Constitution and Category B Bills involve expenditure from the Consolidated Fund of India.**

Differences between Money Bills and Financial bills

- The fundamental difference between a money bill and finance bill is that a **money bill** can be introduced in only the lower house of parliament, i.e. Lok Sabha only,
- **finance bill** can be introduced in either of the two houses. Although money bill is a type of finance bill, most of the people use them interchangeably, but they differ in terms of their content.

Discuss the legacy of Maharaja of ranjit singh and his contributions to sikh community (250 words)

Ranjit Singh, also spelled **Runjit Singh**, byname **Lion of the Punjab**

born November 13, 1780, Budrukhan, or Gujranwala which is now in Pakistan

Ranjit Singh is the founder and maharaja of the sikh kingdom of Punjab

He was the only child of Maha Singh, on whose death in 1792 he became chief of the Shukerchakias, a Sikh group.

In July 1799 he seized Lahore, the capital of the Punjab which is now the capital of Punjab province, Pakistan.

The Afghan king, Zamān Shah, confirmed Ranjit Singh as governor of the city, but in 1801 Ranjit Singh proclaimed himself maharaja of the Punjab

Establishments

- He had coins struck in the name of the Sikh Gurus, the revered line of Sikh leaders, and proceeded to administer the state in the name of the Sikh commonwealth.

- He captured Amritsar which is now in Punjab state, India, the most-important commercial entrepôt in northern India and sacred city of the Sikhs
- In December 1809 he went to the aid of Raja Sansar Chand of Kangra in the Lesser Himalayas which is now western Himachal Pradesh state and, after defeating an advancing Ghurka force, acquired Kangra for himself.
- In the summer of 1818 Ranjit Singh's troops captured the city of Multan, and six months later they entered Peshawar.
- In July 1819 he finally expelled the Pashtuns from the Vale of Kashmir, and by 1820 he had consolidated his rule over the whole Punjab between the Sutlej and Indus rivers.
- All Ranjit Singh's conquests were achieved by Punjabi armies composed of Sikhs, Muslims, and Hindus

How far is Environment Impact Assessment(EIA) useful for environment & Society?(250 words)

EIA is a tool used to identify the environmental, social, economic impacts of a project, before decision making.

It aims to predict environmental impacts at an early stage in project planning & design, find ways & means to reduce adverse impacts, shape projects to suit the local environment & present the predictions, options to decision-makers.

Importance of EIA:

- EIA encourages the adaptation of mitigation strategies in the developmental plan.
- EIA links the environment with development for environmentally safe, sustainable development.
- EIA enables the decision makers to analyze the effect of developmental activities on the environment well before the developmental project is implemented.
- EIA provides a cost effective method to eliminate or minimize the adverse impact of developmental projects.
- EIA makes sure that the developmental plan is environmentally sound & within the limits of the capacity of assimilation & regeneration of the ecosystem.
- The objective of EIA is to foresee the potential environmental problems that would arise out of a proposed development & address them in the project's planning, design state.

- MoEF has taken several policy initiatives & enacted environmental, pollution control legislations to prevent indiscriminate exploitation of natural resources.
- All the projects where there is likely to be a significant alteration of ecosystems need to go through the process of environmental clearance, without exception.
- Public hearings should be applicable to all hitherto exempt categories of projects which have environmental impacts.
- The focus of EIA needs to shift from utilization & exploitation of natural resources to conserve natural resources.
- The present executive committees should be included with expert people from various stakeholders who are reputed in environmental & other relevant fields.
- NGOs, civil society groups, local communities need to build their capacities to use the EIA notification towards better decision making on projects.

Conclusion:

The government has drafted new rules for EIA, 2020, the most controversial rule being reducing the time for public scrutiny.

EIA is essentially a useful component of sound environment management & the government must understand that reducing the time for public scrutiny is essentially diluting the EIA process.

EIA studies are increasingly undertaken before project is cleared by the government. Discuss the key elements of an initial project description & scoping (250 words)

The key environmental issues to be considered in relation to a project characteristics are discussed in guidelines published by MoEF.

An Initial Project Description (IPD) should at the very least, provide the reviewer with all the information necessary to enable project screening and scoping.

Specific information that must be covered by the IPD includes :

- Location, current land use along with contours and whether it conforms to the development plans proposed for that area.
- Outlining the key project elements during the pre-construction, the construction and the operation phases etc. as per the list of documents to be attached with the questionnaire.
- Details of proposed project activity including the project cost.

Project Location-

- The site selection can be an effective approach in minimizing the requirement of mitigation measures.

- Proposed project locations should be reviewed based upon regulatory and non-regulatory criteria.
- Project siting restrictions depend on the sensitivity of the surrounding environment. Sensitivity should be assessed in relation to proximity of the project to the places listed in the identified ecologically sensitive zones (ESZ) notified by MoEF.

Siting criteria delineated by MoEF include –

- Land acquired should be minimum but sufficient to provide for a green belt wherein the treated wastewater, if suitable, could be utilized from wastewater treatment systems.
- As far as possible prime agricultural land may not be converted into an industrial site.
- Enough space may be provided for storing solid wastes. The space and the waste can be made available for possible reuse in future.

In addition, the following distances should be maintained-

Estuaries- At least 200 meters from the estuary boundaries.

Flood Plains of the Riverine systems- At least 500 meters from flood plain or modified flood plain or by flood control systems.

Coastal areas- At least 500km from high tide line, within 0.5km of High Tide Line(HTL), specified activities as per CRZ notification, 1991 are permitted.

Transport-communication system- At least 500 meters from highway and railway.

Major settlements i.e., 3lakh population at least 25km from the projected growth boundary of the settlement.

Process of public Hearing-

Person who apply for environmental clearance of projects, shall submit to the concerned State Pollution Control Board.

Notice of public hearing-

All persons including bonafide residents, environmental groups and others located at the project sites, displacement sites likely to be affected can participate in the public hearing. They can also make oral/written suggestions to the State Pollution Control Board.

The State Pollution Control Board shall cause notice for environmental public hearing which will be published in at least two newspapers widely circulated in the region around the project, one of which shall be in the local language of the locality concerned.

SPCB shall mention the date, time and place of public hearing.

Suggestions, views, comments and objections of the public shall be invited within thirty days from the date of publication of the notification.

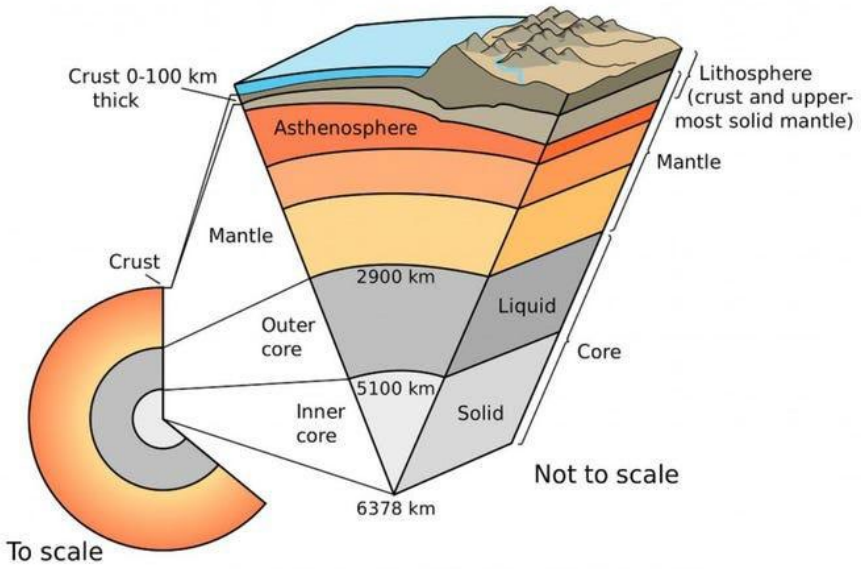
Describe the components of Earth's Crust. Also highlight the prime importance between continental crust and oceanic crust (150 WORDS)

INTRODUCTION

"Crust" describes the outermost shell of a terrestrial planet. Our planet's thin, 40-kilometer (25-mile) deep crust—just 1% of Earth's mass—contains all known life in the universe.

EARTH'S CRUST

- The crust is Earth's outermost layer.
- It is a thin skin of relatively cool, brittle rock on which we live.
- Earth has three layers: the crust, the mantle, and the core. The crust is made of solid rocks and minerals.
- Beneath the crust is the mantle, which is also mostly solid rocks and minerals, but punctuated by malleable areas of semi-solid magma.
- At the center of the Earth is a hot, dense metal core. Earth's layers constantly interact with each other, and the crust and upper portion of the mantle are part of a single geologic unit called the lithosphere.
- The lithosphere's depth varies, and the Mohorovicic discontinuity (the Moho)—the boundary between the mantle and crust—does not exist at a uniform depth. Isostasy describes the physical, chemical, and mechanical differences between the mantle and crust that allow the crust to "float" on the more malleable mantle.



Differences between continental and oceanic crust

Feature	Continental Crust	Oceanic crust
Global distribution	35% of Earth's surface - mainly in the northern hemisphere.	65% of Earth's surface - mainly in the southern hemisphere.
Average thickness	35 km	5 km
Maximum thickness	70 km	12 km
Topographical features	Fold mountain ranges, extensive areas of low relief	Mid-ocean ridges, abyssal plains, trenches
Composition	Sial (Silicon and aluminium)	Sima (Silicon and magnesium)
Average density (gcm^{-3})	2.7	3.3
Age	Up to 3800 Ma	Up to 250 Ma

How earthquake waves can aid as a vital importance for understanding the interior of the earth. (150 words)

NTRODUCTION

- The passage of earthquake waves through Earth provides valuable information about the nature of its interior.
- Earthquakes occur in areas where rocks are subject to directed pressure, which causes stress in the rocks. The lithosphere (Earth's solid outer layer) may bend until the stress exceeds the strength of the rocks.

- The **focus** of an earthquake is the location inside Earth of the fracture or faulting which caused the earthquake.
- The **epicenter** of the earthquake is the point on the surface of Earth situated directly above the focus.

Earthquake Waves

The waves produced by earthquakes may be divided into two groups. They are:

- Body waves travel through Earth's interior**.** There are two types of body waves:
  - *Primary*, or push-pull waves (P-waves).
  - *Secondary*, or shear waves (S-waves).
- Surface waves or L-waves, which travel around Earth's surface. These are the waves which cause earthquake damage.

A.Primary Waves

- These are the fastest waves produced by the earthquake. They travel through Earth's interior, and reach recording stations first. They are longitudinal waves, in which the particles of the medium (the material through which the wave is travelling) vibrate backwards and forwards along the line of propagation of the wave forming a series of compressions and rarefactions.
- Compressions are regions of the wave in which the particles of the medium are close together.
- Rarefactions are regions of the wave in which the particles of the medium are further apart.
- The diagram below shows the behaviour of the particles of a medium as a P- wave passes through the medium.

B.Secondary Waves

- Secondary waves also travel through Earth's interior. These are **transverse** waves in which the particles of the medium vibrate **perpendicular** to the direction of propagation of the wave. A transverse wave consists of a series of **crests** and **troughs**, as shown in the diagram below.

C.Refraction of Earthquake Waves in understanding interior of the Earth

- The speed at which a wave travels depends on the medium through which it is travelling. As a wave passes from one medium to another its speed changes, and the direction in which it travels also changes.
- All kinds of waves undergo a change in direction, or refraction, as they pass from one medium to another.
    - For example water waves are refracted as they pass from deep water into shallow water, since their speed is less in shallow water. Light waves are refracted as they pass from water into glass.
- The density of Earth's mantle increases with depth, so that earthquake waves are gradually refracted towards Earth's surface as they travel through the mantle.

C1.Shadow Zones

Wherever an earthquake occurs, there are always some seismic stations around the world which receive no waves at all from that earthquake. There are also stations which receive only P-waves. This is because of the behaviour of the waves as they pass from one of Earth's layers to the next one.

C1.1The P-Wave Shadow Zone

As well as being gradually refracted as they pass through the mantle, P-waves undergo refraction at the boundary between the mantle and the outer core. For this reason, no P-waves are received by seismic stations in a band around Earth extending between 103° and 145° from the earthquake's epicentre. This region is known as the **P-wave shadow zone**.

The diagram below shows how P-waves are refracted at boundaries between Earth's layers to produce the P-wave shadow zone.

Explain the India-china border dispute and discuss the key issues and areas involved in it (250 words)

Introduction

- China informed India that it should be happy with what has been achieved regarding the disengagement in the Pangong Tso area.
- At two friction points, Patrolling Point 15 (PP 15) in Hot Springs and PP 17A near Gogra Post, China still has a platoon-level strength each along with vehicles

Line of Actual Control

The LAC is a demarcation that separates Indian-controlled territory and Chinese-controlled Territory
India Considers that LAC to be 3,488km and Chinese Considers that LAC to be only around 2,000km
It is divided into three sectors
Eastern Sector- Arunachal Pradesh and Sikkim
Middle Sector-Uttarakhand and Himachal Pradesh
Western Sector- Ladakh

- It is creating a standoff with India, PP15 and PP17A was two of the four points where the soldiers were eyeball-to-eyeball.
- The other points of friction at that time were PP14 in Galwan Valley and the north bank of Pangong Tso.
- Chinese troops crossed the LAC at all these points and positioned themselves across

PP15 and PP17A are two of the 65 patrolling points in Ladakh along the LAC.

PP 15 is located in an area known as the Hot Springs, while PP17A is near an area called the Gogra post.

Present Situation

- As two of the four initial friction points during the recent standoff, the disengagement of troops from PP15 and PP17A had started in June 2020, during the initial rounds of discussion.
- Both sides had agreed to disengage from PP14 (Galwan Valley), PP15 and PP17A after the third round of meetings of the senior military commanders in June, following the Galway Valley clashes.
- However, though China pulled back its troops from PP14, it did not complete the disengagement from PP15 and PP 17A.
- Earlier there had been a company-sized strength at both these locations, there is still a platoon each there, along with military vehicles.

Conclusion

- After the disengagement in the Pangong Tso Region, when both India and China had pulled back their troops and armoured columns in February, as per the agreement, the senior military commanders were to meet to discuss the other friction points, including these two and Depsang Plains.
- However, no fresh ground could be broken in the talks and China has refused to pull back.

Are electrical vehicles alternatives for fossil fuels comment. (250 words)

Introduction

- Fuel cell electric vehicles (FCEVs) are powered by hydrogen. They are more efficient than conventional internal combustion engine vehicles and produce no tailpipe emission they only emit water vapour and warm air.
- FCEVs and the hydrogen infrastructure to fuel them are in the early stages of implementation.
- The need to combat temperature change and stall ecological degradation has created itself felt with pressing significance

Benefits of cell electrical vehicles:

- FCEVs area unit among the cleanest modes of transportation as they unharness no harmful pipage emissions, and solely emit water vapour and heat air. With future technical enhancements, there'll be a forecasted improvement in overall WTW (well-to-wheel) potency for FCEVs that is pegged at around 30–35 per cent nowadays.
- FCEVs may be instrumental in achieving energy security and fulfilling de-carbonisation goals. whereas it's crucial to recollect battery electrical vehicles (BEVs) and FCEVs don't seem to be competitive however complementary technologies, hydrogen-operated EVs provide some necessary edges over lithium-powered BEVs.
- In the context of sure duty cycles and applications, they possess higher energy density (more energy per unit mass), need shorter fuelling durations, and have long-range applications that don't seem to be viable with BEVs due to the constraints of Li-ion batteries. With associated inherent renewability part and no emissions, FCEVs also are environmentally friendly.
- In explicit, transitioning to gas cell heavy-duty vehicles will have a major impact on reducing greenhouse emissions. within the close to future, gas fuel cells are key in achieving higher vary applications (exceeding five hundred km) due to quicker refuelling and better density.

Challenges for the adoption of cell electrical vehicles in India:

- **However, despite gas being a promising various fuel resolution, there area unit many challenges for Bharat to adopt this technology, a minimum of in close to future.**

- **Lack of infrastructure:** Infrastructure remains a significant hindrance previous to the expansion of gas cell technology steam-powered vehicles. In India, the gas cell dispensing fuel stations area unit solely a couple of, that approach less than adequate encourage the automakers and vehicle consumers to adopt gas cell technology steam-powered vehicles.
- **Higher safety concern**: Safety could be a major concern around gas cell technology. gas fuel is very ignitable, even more than fossil fuels like fuel or diesel. it's not necessary to store the fuel in gas type solely, however alternative hydrogen-generating sources like methane series, propane, alcohols, or maybe regular fuel can also produce aerosolised gas within the vehicle itself. However, all of those are associated with various flammability problems and also the gas itself is very ignitable similarly, which brings the protection concern.

Initiatives by Government to promote electric vehicles

- The remodelled **Faster Adoption and Manufacturing of Electric Vehicles (FAME II) scheme**.
- **Production-Linked Incentive (PLI) scheme for Advanced Chemistry Cell (ACC)** for the supplier side.
- **PLI scheme for Auto and Automotive Components** for manufacturers of electric vehicles.
- **"Charging Infrastructure for Electric Vehicles—Guidelines and Standards,"** describing the roles and responsibilities of various stakeholders at the Central and State level for the expeditious deployment of public EV charging infrastructure across the country, has been issued recently.

Discuss India’s commitment towards EV30 at 30 indicative. Explain advantages and hurdles in achieving EV30. (250words)

Introduction

- India’s commitment to the EV30@30 initiative - to reach a 30 per cent sales share for **EVs by 2030 - presents a cumulative investment opportunity**
- Central and state governments have approved fiscal incentives for EVs, charging infrastructure, and manufacturing that are helping achieve parity in the total cost of

ownership with **internal combustion engine (ICE) vehicles for several segments and use cases.**

- **Original equipment manufacturers (OEMs) and component** manufacturers are investing in indigenous manufacturing and supply chains.
- EV startups are attracting significant venture funding due to their **product and business model innovation, capturing as well as creating the market opportunity presented by EVs.**

Advantages associated with electric vehicles

- **Reduced greenhouse gas emissions-** petrol and diesel are important sources of carbon dioxide emissions. CO2 is a leading source of global warming. EVs can help in reducing GHG emissions.
- **Reduced air pollution-** Petroleum fuels are also a source of NOx, SO2 and particulate matter along with photochemical smog. With EVs, this pollution can be addressed.
- **Reduced noise pollution-** EV vehicles produce less noise as compared to petrol or diesel vehicles. This will be helpful to transport in urban areas, forested areas etc.
- **Use of renewable energy-** with EVs there will be a rise in electricity demand. This will give scope for more renewable energy like solar and wind.
- **Easier to maintenance -**An internal combustion engine usually contains more than 2,000 moving parts. An electric motor onboard an EV on the other hand contain around 20 moving parts.
- **Low cost of ownership -**It is a proven fact by many researchers that EVs offer a way lower cost of ownership in their lifecycle compared to fossil fuel-powered vehicles.

What drives electric vehicles opportunity in India

- Thirteen out of 20 cities in the world with the highest air pollution are in India It is envisaged that the Low carbon scenario with **the 'highest' EV penetration shows a 50 per cent drop in PM 2.5 by 2035 (UNEP, DTU and IIM- A).**
- Master plans for most cities in India target **60 - 80 per cent public transport ridership by 2025 - 2030 (Center for Science and Environment)**
- With the Government of India targeting 100 GW of solar by 2022, **electric vehicles can improve reliability and utilization of renewable by acting as storage**
- However, there needs to be proper planning concerning monitoring and control of charging infrastructure as an unplanned increase in penetration of EVs in an area can lead to an increase in **peak load of an already stressed distribution network.**
- Large scale penetration of EVs will require both demand-side incentives (e.g., tax incentives) and improved charging infrastructures as well as **integrated planning for distribution Grid management.**
- EVs offer the opportunity to act as a **distributed storage in the urban energy system** which could help in better integration of intermittent renewables like wind and

solar and can feed the grid at peak timings if price incentives are designed in terms of **the dynamic tariff as part of Smart Grid implementation.**

Lingayats as a separate religion Comment? Discuss the Lingayats Community (250 Words)

Introduction

Lingayats, who are currently classified as a Hindu subcaste called "Veerashaiva Lingayats", are often considered to be Shaivites, even though the community evolved from a 12th century movement led by the philosopher-saint Basavanna to help downtrodden sections of Hindu society break the chains of caste and seek the truth themselves.

Philosophy behind Separate religion

While caste discrimination is central to the post-Manu Hinduism, Basavanna… and his associates… asked their followers not to observe it.

They held that once a man undergoes the initiation wherein he is given an ishtalinga, he becomes superior and therefore, all Lingayats must be treated as equal," Mahadevappa wrote.

There is a general misconception that Lingayatism is a subsect of Shaivism, which is itself a sect of Hinduism and that Lingayats are Shudras.

But the truth based on textual evidence and reasoning is that Lingayatism is not a sect or subsect of Hinduism, but an independent religion.

Key points

A decision was taken in a meeting of community leaders in 1941 to identify the mahasabha of the community as the All India Lingayat Mahasabha, and to declare Lingayats as a separate religion, but this decison has not been implemented, and the mahasabha continues to be known as the All India Veerashaiva Mahasabha

The term Lingayat cannot be attributed to any community or caste. This is an independent religion. Lingayat has become a part of Hindu religion due to the ignorance of people.

Lingayat should be an independent religion- Mather Mahadevi, a woman seer from the Basava Dharma Peetha

CONCLUDING REMARKS

The extent of the P-wave shadow zone - between 103° and 145° from the earthquake's epicentre - enables the depth of the boundary between the mantle and the outer core to b