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- There are two contending models to explain the formation of massive stars, **Core Accretion and Competitive Accretion.** They differ primarily in how and when the mass that ultimately makes up the massive star is gathered.
  - **In the core accretion model,** the mass is gathered in a prestellar stage due to the overlying pressure of a stellar cluster or a massive pre-cluster cloud clump.
  - In contrast, **competitive accretion** envisions that the mass is gathered during the star formation process itself, being funneled to the centre of a stellar cluster by the gravitational potential of the stellar cluster.

Q.40) Ans: d
Exp:

	Particulars	2017-18	2018-19	2019-20
1	Indigenous crude oil processing	32.8	31.7	29.3
2	Products from indigenous crude (93.3% of crude oil processed)	30.6	29.6	27.3
3	Products from fractionators (Including LPG and Gas)	4.6	4.9	4.8
4	Total production from indigenous crude & condensate (2 + 3)	35.2	34.5	32.1
5	Total domestic consumption	206.2	213.2	214.1
	% Self-sufficiency (4 / 5)	17.1%	16.2%	15.0%

- **Statement 1 is incorrect:**
  - As can be seen from the adjoining table, the self-sufficiency has actually decreased.
- **Statements 2 and 3 are incorrect**
  - In the last 3 financial years alone, the imported quantity of both LNG have increased

Financial Year	Crude Oil			Liquefied Natural Gas		
	Quantity Imported (in MMT)	Amount in US$ (Billion)	Amount in Rs. (Crores)	Quantity Imported (in MMT)	Amount in US$ (Billion)	Amount in Rs. (Crores)
2017-18	220.4	87.8	566450	20.7	8.05	52122
2018-19	226.5	111.9	783183	21.7	10.25	71867
2019-20	227	101.4	717001	25.6	9.49	67383
2020-21 (April -January) (P)	162.8	47.2	349827	20.43	5.77	42798

consistently.

Q.41) Ans: c
Exp:
- As can be seen in the map, **the correct sequence is 3-1-2-4**
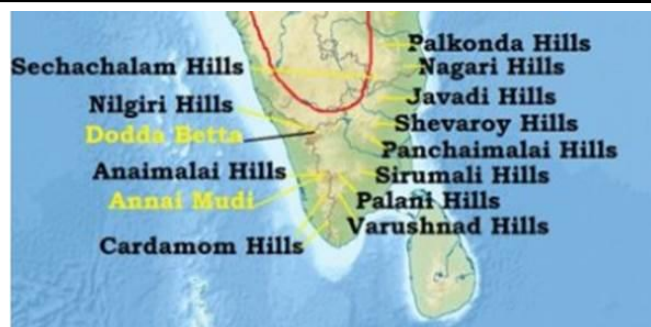
Q.42) Ans: d
Exp:

- **All Statements are correct:**
  - **NASA and ISRO are collaborating** on developing an **SUV-sized satellite called NISAR,** which will detect movements of the planet's surface as small as 0.4 inches over areas about half the size of a tennis court. The satellite will be launched in 2022 from the **Satish Dhawan Space Center in Sriharikota** (Andhra Pradesh) into a near-polar orbit.
  - The Name **'NISAR'**: The name NISAR is short for **NASA-ISRO-SAR.** SAR here refers to the Synthetic Aperture Radar that **NASA will use to measure changes in the surface of the Earth.** It refers to a technique for producing high-resolution images. Because of the precision, the radar **can penetrate clouds and darkness, which means that it can collect data day and night in any weather.**
  - Primary Goals:
    - Tracking subtle changes in the Earth's surface
    - Spotting warning signs of i**mminent volcanic eruptions,**
    - Helping to **monitor groundwater supplie**s, and
    - Tracking the rate at which **ice sheets are melting**
  - NISAR's data can help people worldwide better manage **natural resources and hazards**, as well as **providing information for scientists to better understand the effects and pace of climate change.** The images will be detailed enough to show local changes and broad enough to measure regional trends.
  - As the mission continues for years, the data will allow for better understanding of the causes and consequences of land surface changes. It will also **add to our understanding of the Earth's crust**.

Q.43) Ans: a
Exp:
- **Option A is correct:**