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Date - 30/10/2022 (Paper-1 Part B)

भारत का नं. 1 संस्थान

कौटिल्य एकेडमी

सफलता का प्रवेश द्वार...

प्रश्न  
संख्या

मुख्य परीक्षा उत्तर पुस्तिका  
(Mains Answer Sheet)

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1	United Nations has <u>193</u> countries as members. The continent with largest number of members is <u>Africa</u> .	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1	2	There are five oceans in the world namely Pacific Ocean, Atlantic Ocean, Indian Ocean, Southern Ocean & Arctic Ocean. The largest Ocean is <u>Pacific Ocean</u> and the smallest ocean is <u>Arctic Ocean</u> .
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1	3	India is <sup>mainly</sup> a Tropical country. The reason being India lies in <u>Tropics</u> that is <u>between Tropic of cancer</u> ( $23\frac{1}{2}^{\circ}$ N) & <u>Tropic of Capricorn</u> ( $23\frac{1}{2}^{\circ}$ S). However, the <u>northern</u> part of India beyond Tropic of cancer is a <u>sub-tropic</u> region.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1	4	Mountain ranges in <u>Himalayas</u> - Kanchenjunga Range, Zaskar range, Pirpanjal, Dhauladhar etc. <u>Western Ghats</u> - Nilgiri Range, Annamala, Anaimudi, Cardamom hills etc. <u>Eastern Ghats</u> - Sheshay range, Palani, Jawadi, Sheshachalam etc.



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<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	5	Longest border - with Bangladesh Shortest border - with Afghanistan (through POK)
<input type="checkbox"/>	<input type="checkbox"/>		
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	6	India has around 7500 kms long coast-line. It is vulnerable to natural disaster such as tropical cyclone, storm surge & Tsunami.
<input type="checkbox"/>	<input type="checkbox"/>		
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	7	Tourist places in River Narmada - Dhuwadhar waterfall ( Jabapur ), Sahasraadhara waterfall ( Khondwa ) Kapildhara ( Amantantak ) etc.
<input type="checkbox"/>	<input type="checkbox"/>		
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	8	Origin points of Shipra & Tapi rivers are <u>Kakri Bardi hills</u> near <u>Dhars</u> and <u>Multa</u> (Betul) respectively.
<input type="checkbox"/>	<input type="checkbox"/>		
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	9	<u>Betul</u> district is known for <u>Graphite</u> production.
<input type="checkbox"/>	<input type="checkbox"/>		
<input type="checkbox"/>	<input type="checkbox"/>		



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<input type="checkbox"/>	<input type="checkbox"/>	<p><u>Seismograph</u> is an instrument used for recording seismic waves or shock waves during an earthquake. <u>Richter scale</u> is used for measuring the <u>magnitude</u> of an earthquake. It measures an earthquake on a scale of <u>1 to 10</u>.</p>
<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	<p><u>Grand Canyon</u> is world's largest canyon located in <u>Arizona, USA</u>. It is made by the erosion done by river <u>Colorado</u> in the USA.</p>
<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	<p>When the warm air layer lies above the cold layer of air, it is known as temperature inversion. As it is inversion of normal condition where warm layer of air lies below the cold layer. Its causes are - extreme cold weather, clear sky, stagnant air &amp; long winter nights.</p>
<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	







2.	1	Types of mountains -
<input type="checkbox"/>	<input type="checkbox"/>	① <u>Fold mountains</u> - They are formed due to convergence of tectonic plate boundaries. Example - <u>Himalayas</u> (due to collision of Eurasian plate & Indian plate), <u>Alps</u> (collision of African plate with Eurasian plate)
<input type="checkbox"/>	<input type="checkbox"/>	② <u>Block mountains</u> - They are formed due to tensional forces acting in opposite direction. Ex. - <u>Vindhyas &amp; Satpuras</u> in MP (India), <u>Vosges mountain</u> (France)
<input type="checkbox"/>	<input type="checkbox"/>	③ <u>Volcanic mountain</u> - formed due to volcanic eruptions. Ex. - <u>Kilimanjaro Mountain</u> (Tanzania)
2.	2	
<input type="checkbox"/>	<input type="checkbox"/>	Climate change adversely affects oceans in following ways -
<input type="checkbox"/>	<input type="checkbox"/>	① <u>Ocean acidification</u> - Excess of $CO_2$ in ocean leads to mortality of oceanic lives.
<input type="checkbox"/>	<input type="checkbox"/>	② <u>Sea level rise</u> - results into submergence of coastal areas & small islands.
<input type="checkbox"/>	<input type="checkbox"/>	③ <u>Warming of ocean water</u> - Few degrees rise in ocean water destroys <u>corals</u> & other organisms.
<input type="checkbox"/>	<input type="checkbox"/>	④ <u>Extreme weather events</u> such as excess tropical cyclone, Tsunami, storm surge also negatively affects oceanic organisms. eg. <u>corals</u> .







2.	4	<p>Factors affecting distribution of population -</p> <p>① <u>Geographical factors</u> - Such as availability of water &amp; food resources, topography, climate etc.</p> <p>② <u>Cultural factors</u> - Same language, faith etc.</p> <p>③ <u>Economic factors</u> - availability of employment &amp; livelihood, proximity to markets etc.</p> <p>④ <u>Other factors</u> - access to various resources, security of life etc.</p>
2.	5	<p>Metallurgical minerals are those minerals from which <u>metals</u> can be <u>extracted</u>. e.g. Iron Ore, Bauxite Bauxite etc.</p> <p>Distribution of metallurgical minerals in MP -</p> <p>① <u>Iron Ore</u> - The major iron producing districts are Hoshangabad, Bhopal etc.</p> <p>② <u>Manganese</u> - The major manganese mines are located in Malajkhand, Balasahat. It is Asia's largest mine.</p> <p>③ <u>Copper</u> - It is produced in Bhanoli, Balasahat.</p> <p>④ <u>Bauxite</u> - Seoni, Chhindwara districts.</p> <p>⑤ <u>Gold</u> - Placer deposits of Gold are found in Ken, Son river.</p>




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<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.	6	Madhya Pradesh receives rainfall from both the branches of <del>Arabian</del> South-West monsoon. The western part of MP comprising Malwa Plateau receives rain from Arabian sea branch, while Eastern part comprising districts of Balaghat, Seoni, Chhindwara etc gets rain fall from both the branches, Bay of Bengal branch & Arabian sea branch. The highest rainfall is received in Pachmarhi (above 200 cm). The Balaghat region also receives very high rainfall around 150-250 cm. The northern region comprising districts of Bhind, <del>Morena</del> Morena, Shajapur etc gets the minimum rainfall (below 50 cm)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	7	The Islands of India are located in Indian Ocean. These are - ① <u>Andaman &amp; Nicobar Islands</u> - These are group of Islands in Eastern Indian Ocean. 10° channel is between Andaman & Nicobar group of Islands. ② <u>Lakshadweep Islands</u> - There are <sup>more</sup> <del>more</del> than 20 groups of Islands, located in western Indian Ocean. 9° channel is between <u>Kannatti &amp; Amindivi</u> group of Islands



1.	8	Distribution of mineral & energy resources in MP -
<input type="checkbox"/>	<input type="checkbox"/>	① <u>Coal fields</u> - in <u>Madhya Bharat coal fields</u> - comprises <u>Singrauli coalfield</u> . <u>NTPC</u> plant gets coal from here to produce energy.
<input type="checkbox"/>	<input type="checkbox"/>	② <u>Satpura coal fields</u> - <u>Pench-Kanha coal fields</u> comes under this. <u>Saamari Power plant</u> gets coal from here.
<input type="checkbox"/>	<input type="checkbox"/>	③ <u>Sonapur coal field</u> - Thickest coal sheet is found here.
2.	9	Ground water management is sustainable & efficient use of ground water resources. This includes -
<input type="checkbox"/>	<input type="checkbox"/>	① Preservation of ground water resources.
<input type="checkbox"/>	<input type="checkbox"/>	② Rain water harvesting.
<input type="checkbox"/>	<input type="checkbox"/>	③ Scientific irrigation methods.
<input type="checkbox"/>	<input type="checkbox"/>	④ Precision agriculture.
<input type="checkbox"/>	<input type="checkbox"/>	⑤ Use of less pesticide & medicines in agriculture.
<input type="checkbox"/>	<input type="checkbox"/>	⑥ Various steps have been taken <sup>by</sup> government for ground water management such as <u>Atal Bhujal Yojna</u> , Rain water management projects etc. 



2. 10

Ganga river system is largest river system in India. Ganga originates from Gangotri glaciers as Bhasinathi. After meeting with Alaknanda in Deerprayag it becomes Ganga. It has a large network of Tributaries such as Yamuna, Gomati, Ghaghra, Gandak, Kosi, Son, Brakaputra etc. It meets Brahmaputra in Bangladesh & then known as Padma. It meets with river Meghna then & drains into Bay of Bengal. It makes the largest Delta of Ganga-Brahmaputra in the world.

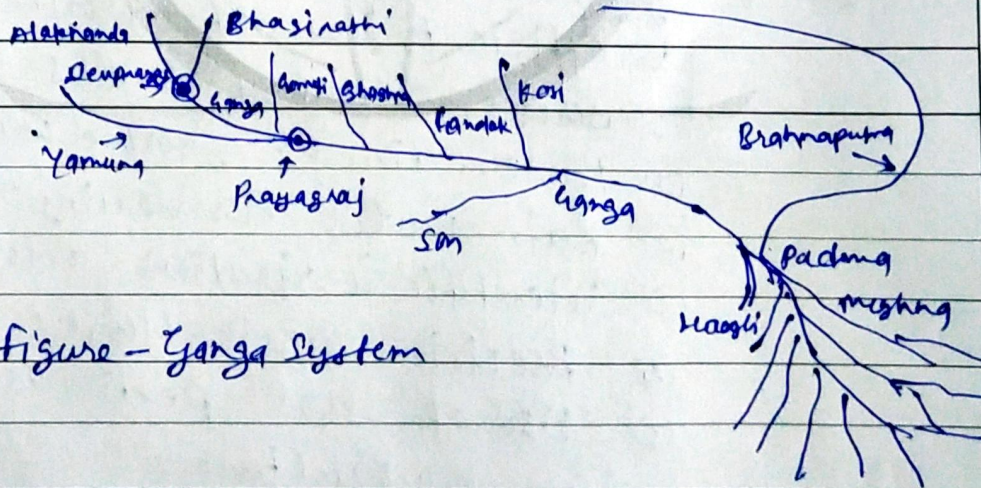


Figure - Ganga System



3.	1	<p>Climate change can be defined as changes in weather pattern of a region over a large period of time.</p>
<input type="checkbox"/>	<input type="checkbox"/>	<p>Climate change has various adverse effects on planet earth.</p>
<input type="checkbox"/>	<input type="checkbox"/>	<p><u>Adverse effects on India</u> -</p>
<input type="checkbox"/>	<input type="checkbox"/>	<p>① <u>Sea level rise</u> - India has a vast coast-line. Due to climate change the submergence of coast line will happen as the sea level of will rise. It will lead to loss of life &amp; livelihood of population residing in coastal areas &amp; islands.</p>
<input type="checkbox"/>	<input type="checkbox"/>	<p>② <u>Ocean acidification</u> - It will lead to large scale mortality of oceanic organisms such as crustaceans, fish, etc. It will impact the <sup>food security of</sup> sea food eating population. Also the exports of <u>marine foods</u> will be <del>neg</del> affected negatively.</p>
<input type="checkbox"/>	<input type="checkbox"/>	<p>③ <u>Loss of biodiversity</u> - <u>Forest fires</u> will increase that will lead to <u>loss of wildlife &amp; biodiversity</u>.</p>
<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	



4) Melting of Glaciers - It will lead to drying up of fresh water river in later times.

5) Events of extreme weather - Frequency of extreme weather events such as Tsunami, Storm surge, Tropical cyclone will increase. ~~It will~~

Adverse impacts on MP -

① Changes in Agriculture pattern - Agriculture production will be impacted. More climate change resistant crops will be needed to be produced.

② Livelihood will be impacted

③ Groundwater resources will be depleted.

④ Rainfall pattern will be affected which will negatively affected the agriculture of rainfed areas.

⑤ Food security & nutritional security will be impacted, cases of malnutrition & hunger may rise.

Effective climate change measures at both Central & state government level is need of the hour.



3.	2	India is 5th largest producer of coal. It has various types of coals such as Bituminous, Lignite, Anthracite & peat.
<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	<u>Distribution of coal in India</u> —
<input type="checkbox"/>	<input type="checkbox"/>	① Chotanagpur plateau — (Bituminous) Raniganj coal mines (West Bengal), Hazaribagh plateau (Jharkhand) Palamu plateau (Jharkhand)
<input type="checkbox"/>	<input type="checkbox"/>	② Odisha — Talcher coal field
<input type="checkbox"/>	<input type="checkbox"/>	③ Chhattisgarh — Korba coal field, Surguja coal field, etc
<input type="checkbox"/>	<input type="checkbox"/>	④ Madhyapradesh — Singrauli coal fields, Sohagpur coal field, Panch- Kanga coal fields.
<input type="checkbox"/>	<input type="checkbox"/>	⑤ Tamil Nadu — Neyvile coal field ( <u>Lignite coal</u> )
<input type="checkbox"/>	<input type="checkbox"/>	⑥ Jammu & Kashmir — Kalakot region ( <u>Anthracite coal</u> )
<input type="checkbox"/>	<input type="checkbox"/>	



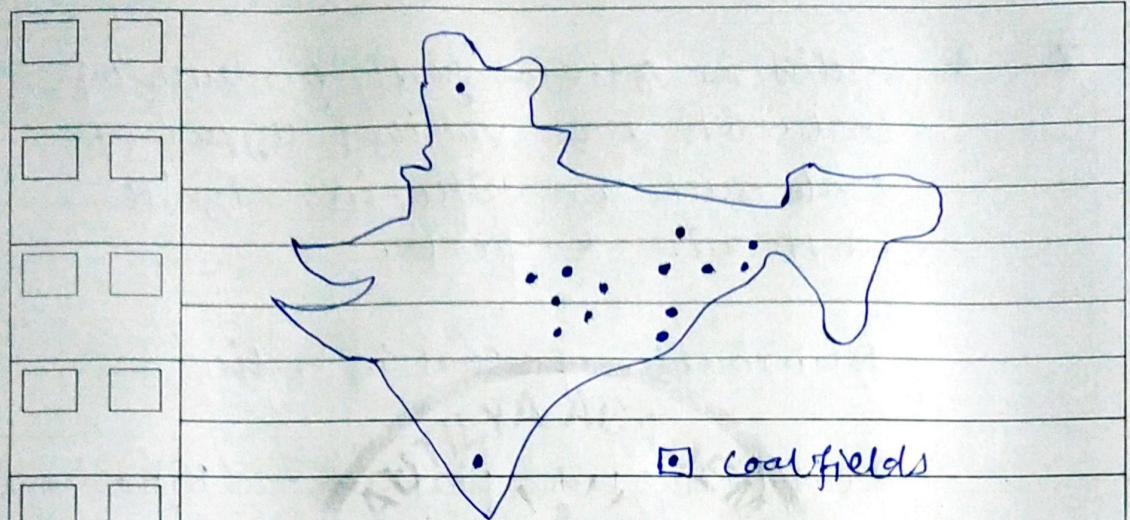


Figure - Distribution of coal deposits in India

### Importance of coal sector -

- Coal sector contributes significantly to the GDP of India.
- It is the main raw material of power plants for producing electricity.
- It is used (mainly coking coal) in smelting of iron in iron and steel industry.
- It is used in various industrial processes.

Coal sector plays a key role in India's industrial growth. But, since it is a fossil fuel & also polluting, alternative & more sustainable alternatives are needed to be adopted.



3	3	<p><u>Major industries of MP -</u></p> <p>① <u>Mineral Based Industries -</u></p>
<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	<p>① <u>Cement based industry</u> - These cement is made from limestone, which is found in Vindhyan rocks. The cement based industry is located in Satna (ACC cements), Kaimur cements (Satna), Neemuch cements (Mandsaus) etc. These industry companies produces portland &amp; portelain cement which is used in construction sector.</p>
<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	<p>② <u>Coal based</u> - Various power plants such as NTPC, Sarani Power plant etc are dependent upon the coal fields of Singrauli, Satapur etc.</p>
<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	<p>③ <u>Iron ore based</u> - Iron is used in Iron steel industry. The major iron producing districts are Hoshangabad, Bhopal etc. These industries are located in Pithampur, Dhar, Mandideep etc.</p>
<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	



① Forest based Industry -

- ① Security paper mill, Hoshangabad.
- ② ~~the~~ Currency printing, Dewas.
- ③ Paper Newspaper print mill, Neeranagar, Bunkhampur.
- ④ Lakh based - Umaria
- ⑤ Terdu patta based - Beedi factories of Jabalpur.
- ⑥ Match box manufacturing - Gwalior

② Agriculture Based Industry -

- ① Textile industry - Indore, Maheshwar, Chanderi etc.
- ② Artificial yarn - Gwasim (Nagda).
- ③ Food processing units - Indus Mega food park, Khargone, other such parks in Dewas, Mandideep etc.
- ④ Various Rice mills, oil mills etc

Madhya Pradesh holds immense potential in these industries all is needed is a robust government policy & its proper implementation to reap the benefit of these industries.



2.	1	<p>Atmospheric air circulation can be defined as the circulation of air in the earth's atmosphere. It depends upon various factors such as the pressure gradient, temperature, Coriolis force etc.</p>
		<p>The atmospheric air-circulation is generally described through a <u>Tri-cellular model</u>. <u>This Tri-cellular model includes -</u></p>
		<p>① <u>Hadley Cell</u> - This is formed between equator &amp; tropics. The equator receives high insolation hence the air rises upwards &amp; creates low pressures. <del>It moves towards</del> The air from high pressure areas moves towards equator to fill the gap. This is how the Hadley cell is formed. It lies between <math>10^{\circ}</math> N &amp; S to <math>30-35^{\circ}</math> N &amp; S.</p>
		<p>② <u>Ferel Cell</u> - It is formed <sup>between</sup> <del>due to</del> <math>30-35^{\circ}</math> N &amp; S &amp; <math>60-65^{\circ}</math> N &amp; S. It is dynamically induced unlike Hadley cell.</p>



② Polar cell - It lies to above the polar areas. It is thermally induced.

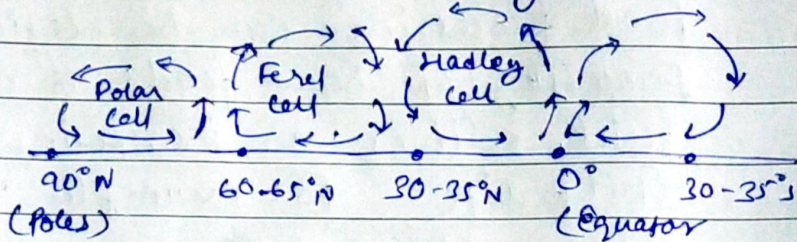
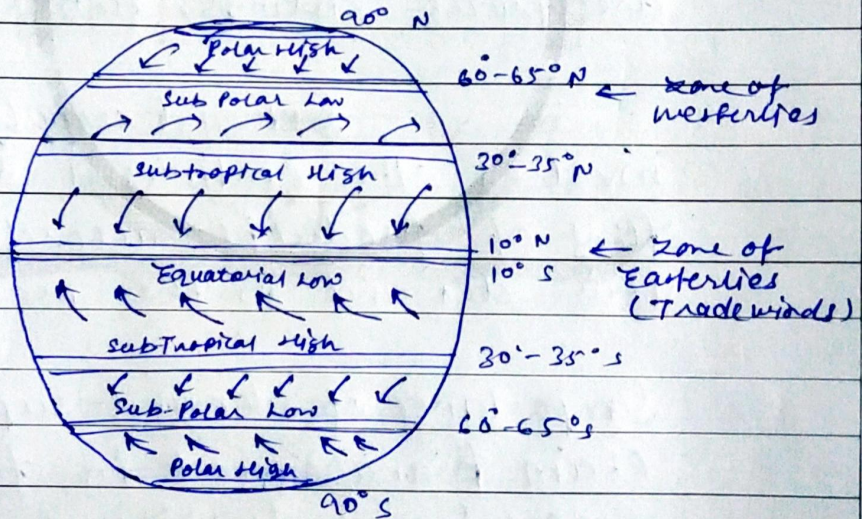


Figure - Tri-cellular air circulation

Pressure Belts



① Equatorial low pressure belt - Also known as Doldrums. It lies between 10°N-10°S in Inter-tropical convergence zone. (Thermally induced)

② Subtropical high pressure belt - Lies between 30-35° N & S. Also known as Horse latitude

③ Sub-polar high - Lies between 60-65° N & S. zone of westerlies. (Dynamically induced)

④ Polar high - Lies in polar region. (Thermally induced)



3.	5	<p>Food processing industries are those industries involved in food processing. Food processing can be defined as processing of raw foods to make them <u>quick edibles</u> or increasing their <u>shelf life</u>. For example making Potato chips from raw potatoes (quick edibles) or making sauce or Jam from fruits &amp; increasing their shelf life. Other examples are frozen shrimps, fish etc.</p>
<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	
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<input type="checkbox"/>	<input type="checkbox"/>	



<input type="checkbox"/>	<input type="checkbox"/>	→ It ensure that the raw material is stored properly, so that the perishables <del>are</del> do not get rotten away. ( <u>cold storage facilities</u> )
<input type="checkbox"/>	<input type="checkbox"/>	→ It take care of all the middle-men & market retailers wholesellers & retailers involved in the marketing of the finished products. ( <u>forward linkage</u> or <u>the demand side management</u> )
<input type="checkbox"/>	<input type="checkbox"/>	<del>is</del>
<input type="checkbox"/>	<input type="checkbox"/>	Food processing industry is the future of food & agriculture industry. India has various <sup>is top</sup> agro-climatic zones & produces of various food crops. The food It also has a vast <u>coastline</u> which has immense potential of <u>marine products</u> . If the food processing industry is focused upon the <u>export</u> can be increased <u>two folds</u> as the demand of processed food products such as <u>milk-powder</u> , <u>flavored cheese</u> etc is always high in the <u>global market</u> . It will also help India achieve the goal of <u>USD 5 Trillion economy</u> in near future.