



APTI PLUS

Academy for Civil Services Pvt. Ltd.

CREATING CIVIL SERVANTS FOR THE NATION



**ANSWER OF OCS (2020)
MAINS EXAMINATION (GS - II)**

OPSC OAS MAINS DETAILED EXPLANATION OF GS-II OCS- 2020

1.What are the implications of Taliban’s recent resurgence in Afghanistan on regional security in South Asia with special reference to India. [10 Marks]

The Taliban's recent return to power after two decades in Afghanistan has caused a geopolitical imbalance in south Asia and serious ramifications on regional security.

Affect on neighboring nations in South Asia.

Pakistan

Taliban's return in Afghanistan could potentially embolden terror groups in Pakistan, including the Pakistani Taliban, which could affect the country's security.

At the same time, Pakistan will see the rise of the Taliban as a major setback for its arch-rival India and a positive outcome for its arch-rival.

China

China will be in a strong position to seek the Taliban's cooperation for its two main interests in Afghanistan: a secure environment for Chinese infrastructure projects, and the isolation of Uyghur militants.

Challenges For India

Issue of Indian Security: The restoration of Taliban rule in Afghanistan presents some very serious potential challenges for Indian security.

The challenges range from securing its development infrastructures to safely evacuating Indians stranded in troubled Afghanistan.

Spread of International Terrorism: For India, a bigger challenge will be about the Taliban’s renewed support for international terrorism and Pakistan’s re-direction of jihadi groups that have allegedly fought with the Taliban towards India.

No Contiguity With Taliban:

- Unlike Pakistan, China and Iran, India has no contiguity with Afghanistan.
- Russia has a security treaty with Tajikistan, for instance, and has deployed more troops there to prevent a destabilising spill over from the turmoil in Afghanistan into Central Asia.
- India has no such security responsibilities and no direct access to Central Asia.
- This may give reasons to the Taliban to hit back at India through Pakistan in J&K, given that LeT and Jaish are operating in Afghanistan alongside the Taliban.

India, as would be impacted by the consequences of American withdrawal, has to work with Taliban and other regional powers to protect its interests and stabilise Afghanistan. If India remains active and patient too, many opportunities could open up in the new Afghan phase.

2.India’s diaspora can provide the requisite strategic impulse to unlock India’s potential as a global power.[10 Marks]

Introduction

According to Global Migration Report 2020, India continues to be the leading the table in international migrants with a 17.5 million-strong diaspora across the world, and it received the highest remittance of \$78.6 billion from Indians living abroad. The diaspora also has huge economic and political backing which acts in favour of Indian diplomacy.-.

However, it is not only the economic prospects of the Indian diaspora but their role in lobbying for crucial strategic deals, promoting Indian culture abroad that has helped India to assume the distinction of Global soft power.

Significance of Indian Diaspora

Economic Front: The migration of less-skilled labor (especially to West Asia) brings remittances to India that have positive systemic effects on the balance of payments.

By weaving a web of cross-national networks, the Indian diaspora has facilitated the flow of tacit information, commercial and business ideas, and technologies into India.

Diplomatic Engagement: Indian diaspora is one of the richest minorities in many developed countries. Through this strong people-to-people contact has helped to further the nation's diplomacy. For example, the signing of the India-U.S. nuclear deal.

Enhancing India's Soft Power: Indian diaspora through values, music, domestic cuisines, and traditional practices has helped India to establish India as a Brand.

The recognition of 21st June as the International Day of Yoga is an example of growing India's soft power.

Political Front: Indian diaspora is not just a part of India's soft power, but a fully transferable political vote bank as well.

Many people of Indian origin hold top political positions in many countries, in the US itself they are now a significant part of Republicans and Democrats, as well as the government.

This helps in strengthening bilateral relations.

Conclusion

The institutionalization of "diaspora diplomacy" by the Ministry of External Affairs, is a distinct indication for the fact that a country's diaspora community has become considerably more important as a subject of interest for foreign policy and associated government activities.

3. Explain how the fiscal policy of the government can play a positive role during Covid-19.[10 Marks]

The Union Govt has taken timely fiscal measures to overcome the pandemic crisis which has resulted in recovering the economy at V-shaped post covid-19.

Some of the salient measures include:

- Government announced a special economic and comprehensive package under AtmaNirbhar Bharat including measures taken by RBI amounting to about Rs. 27.1 lakh crore - more than 13 per cent of India's GDP- to combat the impact of the COVID-19 pandemic and to revive economic growth.
- The package included, among others, in-kind and cash transfer relief measures for households, employment provision measures under Pradhan Mantri Garib Kalyan Rojgar Abhiyaan and increased allocation under MGNREGS, credit guarantee and equity infusion-based relief measures for MSMEs and NBFCs and regulatory and compliance measures.
- Structural reforms were also announced as part of the AtmaNirbhar Bharat Package, which, inter alia, included deregulation of the agricultural sector, change in the definition of MSMEs, new PSU policy, commercialization of coal mining, higher FDI limits in defence and space sector, development of Industrial Land/ Land Bank and Industrial Information System, revamp of Viability Gap Funding scheme for social infrastructure, new power tariff policy and incentivizing States to undertake sector reforms.
- Rs. 30,000 crores Additional Emergency Working Capital Funding for farmers through NABARD is being provided. Rs. 25,000 crore has been disbursed so far as on 4th December, 2020. Under balance

Rs. 5000 crores Special Liquidity Facility for smaller NBFCs and MFIs, Rs. 130 crores has been disbursed as on 4th December, 2020.

- Centre had enhanced the borrowing limit for the States from 3% to 5% of GSDP for FY2020-21. Under the Special Window provided by the Central Government to borrow the shortfall arising out of GST implementation on behalf of States, the Government of India has borrowed an amount of Rs. 78,000 crores in 13 instalments, at an average interest rate of 4.75 per cent, and passed it on to the States and UTs as on 25th January, 2021.

4. Give a brief outline of regional disparity in Odisha. What policy measures do you suggest for balanced regional development of Odisha. [10 Marks]

Odisha faces several developmental issues in terms of regional disparity.. Some regions continue to remain backward.

Regional disparity in Odisha:

- The undivided districts of Koraput, Bolangir and Kalahandi (KBK) form one such region where the incidence of poverty is very high.
- Several other pockets of southern and western Odisha are also socially and economically depressed.
- These regions are also frequently visited by natural calamities, including severe droughts and floods. The persistence of heavy incidence of poverty in these regions is a cause of concern.

Measures for balanced development:

- Nine key initiatives, which have been taken to address problems of underdevelopment and regional disparities, are: Special Plan for KBK districts, Biju KBK Plan for KBK districts, Biju Kandhamal 'O' Gajapati Yojana, Backward Regions Grant Fund, ACA for Leftwing Extremism Affected Districts, Gopabandhu Gramin Yojana, Western Odisha Development Council for backward western districts, Grants-in-aid received to bridge critical infrastructure gaps in identified sectors in the Tribal Sub Plan (TSP) areas, and implementation of development programmes in TSP areas funded out of Special Central Assistance.
- The State needs to conceptualize a well articulated development strategy with special emphasis on poverty and human development with emphasis on building rural and urban productive infrastructure, strengthen the momentum already gained in mobilizing rural poor with emphasis on, women and vulnerable groups.
- Strengthening social security system to reduce IMR, MMR, provide food security, and increase female literacy etc.
- Focused efforts for reducing poverty and achieving Sustainable Development Goals, Improving governance and service delivery mechanisms.
- Promoting broad-based growth, encouraging private investment, public private partnership and public private community partnership
- Emphasis on creation of adequate self-employment / employment opportunities, Enhancing and promoting convergence at district level across large number of Government programmes through strengthening Integrated District Planning to achieve the SDGs.
- Focus on household based Micro-Planning to provide support for livelihoods of most vulnerable groups in different parts of the State with special emphasis to KBK region.

For an all round development the State Govt has taken necessary steps to reduce the regional disparity by above discussed robust schemes and programmes and giving a special position regarding it in the state's budget, results are bound to come in the coming future.

5. Critically examine the world health organization response to Covid-19.[10 Marks]

WHO has played a pivotal role in combating the pandemic by timely action and providing necessary and immediate suggestions and safeguard measures during COVID-19.

Steps taken by WHO:

- WHO Headquarters has held several media briefings. The Director-General's opening remarks, transcripts, videos and audio recordings for these media briefings are available online and useful
- There have been timely Member State Briefings and information sessions.
- WHO convenes international expert networks, covering topics such as clinical management, laboratory and virology, infection prevention and control, mathematical modelling, seroepidemiology, and research and development for diagnostics, therapeutics and vaccines.
- The Open WHO platform to support the COVID-19 response, spanning across 44 languages for COVID-19.
- The Strategic and Technical Advisory Group on Infectious Hazards (STAG-IH) provides independent advice and analysis to the WHO Health Emergencies Programme on the infectious hazards that may pose a threat to global health security.

Criticism of WHO role during Pandemic:

- There was heavy criticism by the experts that WHO take too long to declare it as a global pandemic and virus was easily transmitted between humans.
- WHO was heavily criticized for its over-the-top praise of Beijing's early response to the crisis.
- WHO was too sluggish on its recommendations on the usefulness of wearing facemasks for protection against transmission of COVID.
- The global health organization was chastising for not calling for curbing the border and banning the international travel to prevent spreading of the virus.

According to sources, WHO's landscape of COVID-19 candidate vaccines lists 63 candidate vaccines in clinical development and 173 in preclinical development.

6. What are consequences of British exit from European Union? [10 Marks]

The United Kingdom (U.K.) finally left the European Union (EU) on 31st January 2020. It was a long-awaited historical move which will bring an important change in the policies and politics of the remaining 27 European Union members states and the U.K. mainly. It becomes important to see how this will shift the policymaking process and what are the ways in which nations are going to tackle it.

Impact on the U.K. and the EU

- By leaving the EU, the U.K. automatically, mechanically, legally, leaves hundreds of international agreements concluded by or on behalf of the EU, to the benefit of its Member States, on topics as different as trade, aviation, fisheries or civil nuclear cooperation.
- However, with just 11 months to negotiate, there are only chances of very basic and minimal deals covering trade, fisheries and security.
- In that case, at the end of 2020, differing aspirations for the trade talks might raise the prospect of a new no-deal scenario.
- In the absence of a deal, the earlier accord on citizens' rights, money and the Irish border will remain intact.
- Both of them will have to be ready for the economic shift in trading on World Trade Organization (WTO) terms.

- The first priority is the trade deal to ensure the tariff and quota-free flow of goods between the EU and U.K.
- However, the EU will only agree to zero tariffs and zero quotas if the U.K. pledges zero dumping – that is, not lowering social and environmental standards to outcompete the EU.
- Negotiations will clash over the EU's refusal to bring services into the trade deal.
- The EU seeks to link goods trade to maintaining the status quo on access to British waters which is considered to be a matter of concern for the U.K., so it might give rise to clashes.

Even the non-trade subjects will be full of political troubles because the EU Member States will have to change their policies according to the new deals and the regulations.

Impact on India

- India has had strong historical ties with the U.K. and currently, it is one of India's most important trading partners. In the last four years alone, the number of Indian companies investing in the U.K. has quadrupled.
- Similarly, the U.K. is one of the largest investors in India, among the G20 countries. Hence, it is important to see how India and the U.K. can manoeuvre through Brexit and enter into new trade agreements that are mutually beneficial to both economies.
- Brexit will directly impact not only the Indian stock market but the global market in totality, including the emerging markets in the world. This is because of the high volatility in the pound.
- Both the U.K. and EU account for 23.7% of Rupee's effective exchange rate. With Brexit, foreign portfolio investments will outflow and will lead to the weakening of the rupee.
- India's businesses based in the U.K. will be hampered as till now they had border-free access to the rest of Europe.
- The investors are concerned as India invests more in the United Kingdom than the rest of Europe combined.

EU's core idea is that the member nations are stronger together and pooling the resources and initiatives is the best way of achieving common goals. Even if the U.K. has moved out of it, it will continue to move forward as 27. Meanwhile, other nations of the world will have to accommodate themselves according to the shifting balance of power and politics.

7. How did Semiconductors became the backbone of modern day technology? [10 Marks]

- Electronic parts and components today consist for 40% of the cost of a new internal combustion engine car, up from less than 20% two decades ago. Semiconductor Chips account for a bulk of this increase.
- With the bulk of semiconductor manufacturing and supply capability concentrated in a handful of countries including Taiwan, South Korea, U.S., Japan and, more recently, China, governments worldwide have realised that it is in the national interest to treat chip manufacturing as a strategic imperative.
- India being one of the countries to recently give recognition to semiconductor chip manufacturing, has initiated a semiconductor mission to power the development of the chip and display industry.

Semiconductor Chips

About: Semiconductors are materials which have a conductivity between conductors and insulators. They can be pure elements, silicon or germanium or compounds; gallium, arsenide or cadmium selenide.

Significance of Semiconductor Chips: They are the basic building blocks that serve as the heart and brain

of all modern electronics and information and communications technology products.

These chips are now an integral part of contemporary automobiles, household gadgets and essential medical devices such as ECG machines.

Recent Increase in Demand: The Covid-19 pandemic-driven push to take sizable parts of daily economic and essential activity online, or at least digitally enable them, has highlighted the centrality of the chip-powered computers and smartphones in people's lives.

- The pandemic and the subsequent lockdowns across the world also forced shut crucial chip-making facilities in countries including Japan, South Korea, China and the US.
- Its shortage causes cascading effects, given that the first one creates pent-up demand that becomes the cause for the follow-up famine.
- India's Semiconductor Demand and Related Initiatives: India currently imports all chips and the market is estimated to touch \$100 billion by 2025 from \$24 billion now.
- The Union Cabinet has recently allocated an amount of ₹76,000 crore for supporting the development of a 'semiconductors and display manufacturing ecosystem'.
- It is a belated but welcome acknowledgment of the strategic significance of integrated circuits, or chips, to a modern economy.
- India has also launched the Scheme for Promotion of Manufacturing of Electronic Components and Semiconductors (SPECS) under which a budget outlay of Rs 3,285 crore is spread over a period of eight years for manufacturing of electronics components and semiconductors.

Conclusion

India has realised that being entirely dependent on global supply chains for something as critical as semiconductor chips is not a wise policy. The Cabinet's decision to simultaneously establish an India Semiconductor Mission helmed by 'global industry experts' to drive long-term strategies for the sustainable development of the chip and display industry is a step in the right direction.

8. Briefly explain the principle of optical fibres that are used in communication technology.

[10 Marks]

The optical fibre is the medium for carrying the information from one point to another in the form of light. A basic fiber optic system consists of a transmitting device that converts an electric signal into in light signal and a receiver that accepts the light signal and converts it back to the electric signal. The Optic Fiber System may be from very simple to extremely sophisticated systems. Today, the long-distance telephone cable has now been replaced by Optical Fiber Cable. From the decades of 1980s onwards there has been phenomenal growth in the use & importance of Fiber Optic System.

Optical Fibre Cable and Total Internal Reflection

In an optical fiber the light signal undergoes total internal reflection. The light hits the fibers at the glancing angle and is transmitted forward. They have different layers of glass protected in layers of buffers, namely, hard buffer, soft buffer, core glass, and cladding glass. The cladding glass has a low refractive index toward the core glass. When total internal reflection occurs the signal is transmitted. The soft and the hard buffer are protective coating which provide the necessary protection to the inner glass from external environments.

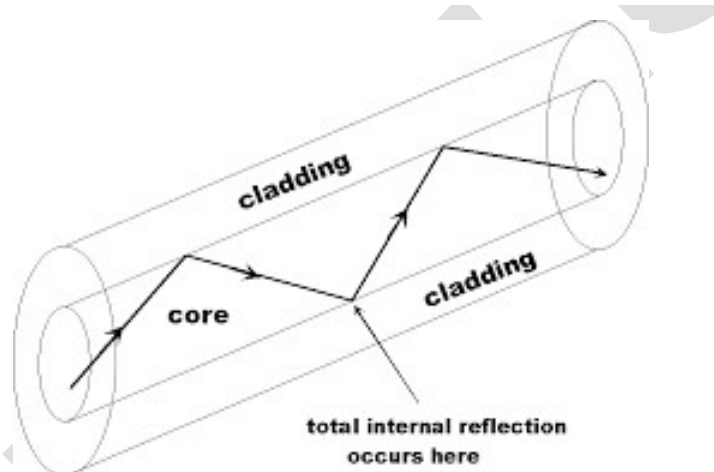
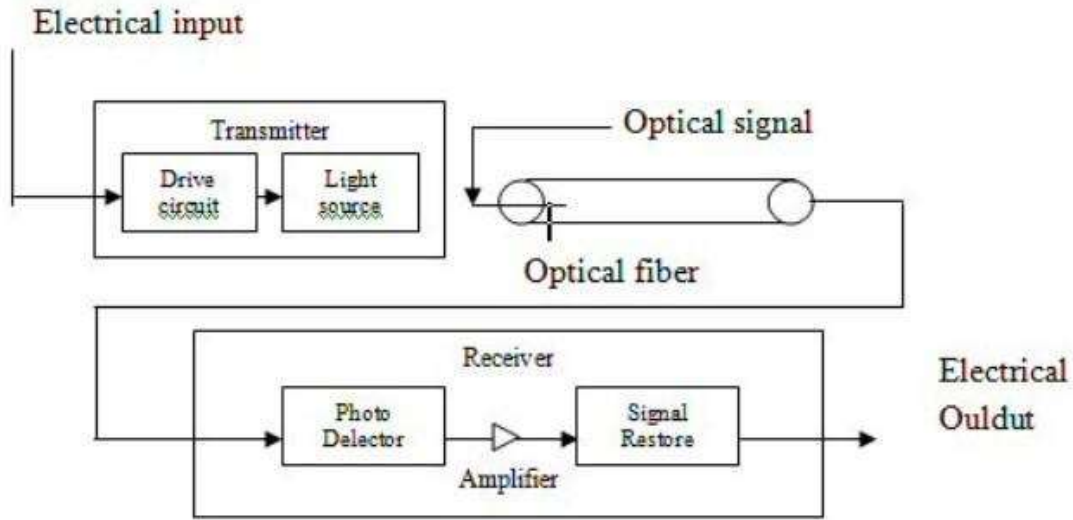
A Fibre Optic Relay System consists of the following components:

The Transmitter - It produces the light signals and encodes them to fit to transmit.

The Optical Fibre - The medium for transmitting the light pulse (signal).

The Optical Receiver - It receives the transmitted light pulse (signal) and decodes them to be fit to use.

The Optical Regenerator - Necessary for long-distance data transmission.



Type of Light Used in Optical Fibre Cable

Please note that Optical communication employs a beam of modulated monochromatic light to carry information from transmitter to receiver. The light spectrum spans a tremendous range in the electromagnetic spectrum, i.e. extending from the region of (104 gigahertz to 109 gigahertz) covering the far infrared to visible to near ultraviolet.

9. Explain briefly a histogram and how to construct it. How will you identify a skewed and a systematic histogram. [10 Marks]

A histogram is a graphical representation of a grouped frequency distribution with continuous classes. It is an area diagram and can be defined as a set of rectangles with bases along with the intervals between class boundaries and with areas proportional to frequencies in the corresponding classes. In such representations, all the rectangles are adjacent since the base covers the intervals between class boundaries. The heights of rectangles are proportional to corresponding frequencies of similar classes and for different classes, the heights will be proportional to corresponding frequency densities.

How to Plot Histogram?

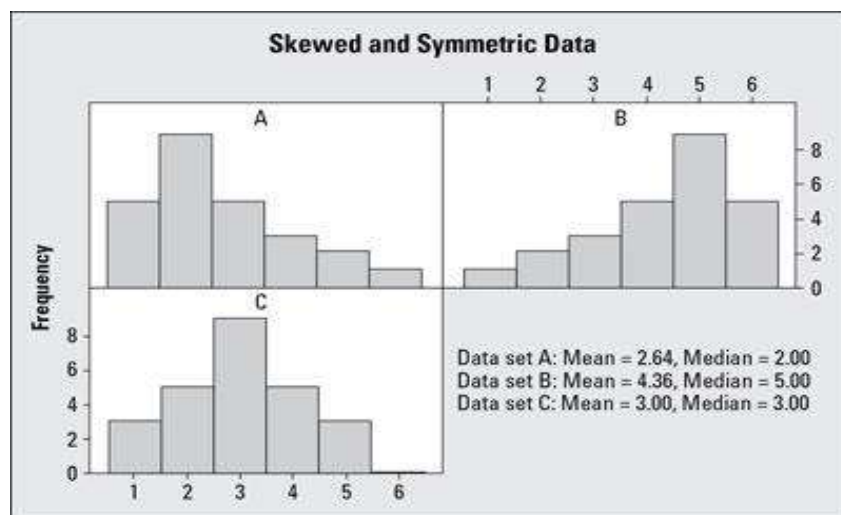
You need to follow the below steps to construct a histogram.

- Begin by marking the class intervals on the X-axis and frequencies on the Y-axis.

- The scales for both the axes have to be the same.
- Class intervals need to be exclusive.
- Draw rectangles with bases as class intervals and corresponding frequencies as heights.
- A rectangle is built on each class interval since the class limits are marked on the horizontal axis, and the frequencies are indicated on the vertical axis.
- The height of each rectangle is proportional to the corresponding class frequency if the intervals are equal.
- The area of every individual rectangle is proportional to the corresponding class frequency if the intervals are unequal.

Although histograms seem similar to graphs, there is a slight difference between them. The histogram does not involve any gaps between the two successive bars.

Symmetric Histogram



A symmetric histogram is also called a bell-shaped histogram. When you draw the vertical line down the center of the histogram, and the two sides are identical in size and shape, the histogram is said to be symmetric. The diagram is perfectly symmetric if the right half portion of the image is similar to the left half. The histograms that are not symmetric are known as skewed.

10. What do you mean by standard deviation? How does it differ from the coefficient of variation? A series 10,15,20,25,30,35 and 40 has a standard deviation of 10. Explain what should be standard deviations 5,10,15,20,25,30 & 35 and 1, 2, 3,4,5,6 and 7?[10 Marks]

Solution: Standard deviation is defined as the positive square root of the arithmetic mean of the squares of the deviations of the given observations from their arithmetic mean.

It was first suggested by Karl Pearson as a measure of dispersion in 1893.

Thus if X_1, X_2, \dots, X_n is a set of observations then the standard deviation is given by

$$\sigma = \sqrt{1/n \sum (X - \bar{X})^2}$$

Where $\bar{X} = 1/n \sum X$, is the arithmetic mean of the given values.

According to Karl Pearson coefficient variation is the percentage variation in mean, standard deviation being considered as a the total variation in the mean.

Difference: The relative measure of dispersion based on standard deviation is called the coefficient of standard deviation and is given by:

Coefficient of standard deviation= σ/\bar{X}

100 times the coefficient of dispersion based on standard deviation is called the coefficient of variation..

$$C.V=100 \times \sigma/\bar{x}$$

X	X ²	d=x+ \bar{X}
5	25	25
10	100	20
15	225	35
20	400	40
25	625	45
30	900	50
35	1225	55
$\sum x=140$	$\sum x^2=3500$	$\sum d=270$

$$n=7$$

$$\bar{X}=\sum x/n=140/7=20$$

$$\sigma_x^2=1/n \sum x^2 - \bar{X}^2=3500/7-(20)^2=500-400=100$$

$$\sigma_x=\sqrt{100}=10.$$

X	X ²	d=x+ \bar{X}
1	1	5
2	4	6
3	9	7
4	16	8
5	25	9
6	36	10
7	49	11
$\sum x=28$	$\sum x^2=140$	$\sum d=56$

$$n=7$$

$$\bar{X}=\sum x/n=28/7=4$$

$$\sigma_x^2=1/n \sum x^2 - \bar{X}^2=140/7-16=4$$

$$\sigma_x=\sqrt{4}=2$$

11. Does India need to reconsider its No first use policy? What would be the possible consequences if India changes its policy of no first use to use its first instances? [20 Marks]

After the 1998 nuclear test India also enunciated a doctrine of 'No First Use' (NFU) of nuclear weapons. The doctrine was formally adopted in January, 2003, and says that nuclear weapons will only be used in retaliation against a nuclear attack on Indian territory or on Indian forces anywhere.

Advantages of NFU

- The NFU policy facilitates restrained nuclear weapons programme without tactical weapons and a complicated command and control system.
- The doctrine minimises the probability of nuclear use by avoiding the deployment of weapons on hair-trigger alert and keeping an arms-race in check.
- The doctrine also reduces the chances of unnecessary chaos as the onus of taking the decision to escalate a nuclear use lies on the adversary.
- Strict adherence to the doctrine can strengthen India's efforts to gain membership in Nuclear Supplier Group (NSG) and United Nations Security Council (UNSC).

Arguments Against NFU

- The idea of no-first-use (NFU) of nuclear weapons has been rejected by some nuclear weapons states and accepted only at the declaratory level by most, if not by all of the others.
- Nuclear weapons are often seen as an antidote to conventional inferiority as the inferior party will seek to deter conventional attack by threatening a nuclear response.
- The first-use nuclear doctrine introduces an element of nuclear risk to any war contemplated by the superior state as it is hard for the potential attacker to confidently calculate that it can achieve victory at an acceptable cost when there is a possibility of nuclear escalation.
- In India the NFU policy has been called into question on the grounds that it allows Pakistan to take the initiative while restricting India's options militarily and puts India in a disadvantageous position.
- Pakistan's low nuclear thresholds and its policy of using its nuclear umbrella to foment sub-conventional conflict in India is the principal reason behind the debate around India's 'no first use' policy.

Implications of Abandoning NFU for India

- Withdrawing the NFU policy and making a declaration to that effect can affect India's status as a responsible nuclear power.
- Such a step will abrogate India's commitment to the universal goal of nuclear disarmament and upset the regional balance in the sub-continent.
- Further, abrogating the doctrine would signal a first use posture by India, thus reducing the space for conventional warfare below the nuclear threshold. This could also severely corrode India's ability to limit Pakistan's offensive tactics and policies at the conventional level.
- Moreover, China's expansionist policies cannot be deterred by revising the doctrine, the decision to abandon the doctrine can send a deliberate signal of provocation to China.
- Nuclear preemption is a costly policy as it requires massive investment not only in weapons and delivery systems but also intelligence, surveillance and reconnaissance (ISR) infrastructure.
- India would require a far bigger inventory of nuclear weapons particularly as eliminating adversaries' nuclear capabilities would require targeting of its nuclear assets involving multiple warheads.
- India is yet to induct the Multiple Reentry Vehicle (MRV) technology in its missiles, which is fundamental to eliminating hardened nuclear targets.
- First use doctrine will also require to devolve control of nuclear weapons from the scientific enclave to the military for their eventual use.
- Moreover, the after effects of the nuclear fallout, depending on the magnitude of nuclear explosions, could pose existential threats to humanity itself.

Looking ahead:

- As security is a dynamic concept and all doctrines needs periodic reviews. Same is the case with India.
- If Indian policymakers feel a need to review the nation's nuclear doctrine, they should be cognizant of the costs involved in doing so.
- A sound policy debate can only ensue if the costs and benefits of a purported policy shift are discussed and debated widely.
- Also, India must gradually revise its posture of 'active deterrence' to 'dissuasive deterrence' by building up its infrastructure along the border and improving the surveillance and warning capabilities among other things.
- Like India, China too has an NFU policy so it provides an opportunity to work jointly towards a global no first use nuclear order.

12.What are the impediments faced by Indian abroad during Covid-19 and what steps government has taken to tackle them? [20 Marks]

Introduction: According to World migration report 2020, Indian diasporas are the highest international migrants summing up to 17.5million across the world. At the same time they are largest contributor of the remittances from abroad (\$78.6 billion) and which forms 3.4% of India's total GDP. During Covid-19 they have faced multiple challenges while studying, working, etc abroad.

Impediments faced by Indian abroad during COvid-19:

- Loss of Jobs, wage thefts for people who are working in the middle-east and west Asia countries. They were left stranded without money, food and shelter and facing challenges to return to home.
- Similarly Covid-19 has triggered an anti-globalization wave, whereby many migrant workers had to return to India and now facing restrictions regarding emigration.
- The restrictions on social distancing imposed due to Covid-19 has resulted in large scale moving back of migrant workers and many of these migrants were stuck not just at international borders but at national and state borders as well.
- The basic needs of migrant workers such as food, shelter, healthcare, fear of procuring disease or spreading it are were not properly addressed during the virulent attack.
- Students in abroad in like European nations, CIS countries , Australia, USA and Canada etc had to leave their studies in the mid of the educational curriculum and chances of permanent drop-outs also increased.

Steps of Government:

Vande Bharat Mission:

- As per the initiative of our Government to organise repatriation flights to bring back the migrant India diaspora especially from Doha, Kuwait, Dammam and Riyadh where more Indians have migrated and wanted to come back home due to this crisis.
- Almost 900 flights have been operated by this mission so far and more than 12 lakh Indians from over 22 countries have been brought back home safely and all the required medical clearance is done for them before they are sent to their respective states and homes.

Operation Samudra Setu

- It was launched in May 2020 by Indian Navy as part of the national effort to bring back Indian citizens from overseas during the Covid-19 pandemic.
- Around 4000 Indian citizens stranded in neighbouring countries, amidst Covid-19 outbreak, were successfully repatriated back to India.

Conclusion: Indian Diaspora is pride of India. Not just negotiating with the Governments to retain the Indians abroad but also arrange a livelihood for Indians coming home if the doors are shut in their migrant countries

13. Discuss the nature of structural changes in the Indian economy during the past two decades. Comment on the implications of such changes. [20 Marks]

Structure of an economy refers to the fundamental features of the economy like the size of the primary, secondary and tertiary sectors in terms of their contribution to GDP and employment. Other important elements of structure are trade composition (the items that we export and import), saving GDP ratio (level of savings as a percent of GDP) etc. Structure of the economy thus means the occupational structure, sectoral distribution of income, industrial pattern, composition of exports, saving- GDP ratio etc.

Structural change in last two decade

GDP pattern

- The economy of India is a middle income developing market economy. It is the world's sixth-largest economy by nominal GDP and the third-largest by purchasing power parity (PPP).
- According to the International Monetary Fund (IMF), on a per capita income basis, India ranked 145th by GDP (nominal) and 122th by GDP (PPP)
- The end of the Cold War and an acute balance of payments crisis in 1991 led to the adoption of a broad economic liberalisation in India.
- Since the start of the 21st century, annual average GDP growth has been 6% to 7%, and from 2013 to 2018 and in 2021, India is the world's fastest growing major economy, surpassing China.
- Nearly 70% of India's GDP is driven by domestic private consumption. The country remains the world's sixth-largest consumer market.
- Apart from private consumption, India's GDP is also fueled by government spending, investment, and exports.
- Nearly 66% of India's population is rural,[84] and contributes about 50% of India's GDP

TRADE

- In 2020, pandemic has affected trade and India was the world's 14th-largest importer and the 21st-largest exporter.
- India has been a member of the World Trade Organization since 1 January 1995.
- It ranks 63rd on the Ease of doing business index and 68th on the Global Competitiveness Report.
- In 2020, India's ten largest trading partners were the United States, China, the United Arab Emirates (UAE), Saudi Arabia, Switzerland, Germany, Hong Kong, Indonesia, South Korea, and Malaysia

EMPLOYMENT

- With 500 million workers, the Indian labour force was the world's second-largest.
- India has one of the world's highest number of billionaires and extreme income inequality.
- Because of several exemptions, barely 2% of Indians pay income taxes.
- The service sector makes up 50% of GDP and remains the fastest growing sector, while the industrial sector and the agricultural sector employs a majority of the labor force
- India faces moderate unemployment, rising income inequality, and a drop in aggregate demand

FDI & Trade Bloc

- During the 2008 global financial crisis the economy faced a mild slowdown. India undertook stimulus measures (both fiscal and monetary) to boost growth and generate demand. In subsequent years, economic growth revived.

- In 2019–20, the foreign direct investment (FDI) in India was \$74.4 billion. The leading sectors for FDI inflows were the service sector, the computer industry, and the telecom industry.
- India has free trade agreements with several nations, including ASEAN, SAFTA, Mercosur, South Korea, Japan, and several others which are in effect or under negotiating stage.

Public debt

- India has a high public debt with 86% of GDP, while its fiscal deficit stood at 9.5% of GDP.
- India's government-owned banks faced mounting bad debt, resulting in low credit growth.
- Simultaneously, the NBFC sector has been engulfed in a liquidity crisis.
- India's gross domestic savings rate stood at 30.1% of GDP in FY 2019

Contributions of different sectors

- India is the world's largest manufacturer of generic drugs, and its pharmaceutical sector fulfills over 50% of the global demand for vaccines.
- The Indian IT industry is a major exporter of IT services with \$191 billion in revenue and employs over four million people.
- India's chemical industry is extremely diversified and estimated at \$178 billion.
- The tourism industry contributes about 9.2% of India's GDP and employs over 42 million people.
- India ranks second globally in food and agricultural production, while agricultural exports were \$35.09 billion.
- The construction and real estate sector ranks third among the 14 major sectors in terms of direct, indirect, and induced effects in all sectors of the economy.[
- The Indian textiles industry is estimated at \$100 billion and contributes 13% of industrial output and 2.3% of India's GDP while employs over 45 million people directly.
- India's telecommunication industry is the world's second largest by the number of mobile phone, smartphone, and internet users.
- It is the world's 23th-largest oil producer and the third-largest oil consumer.
- The Indian automobile industry is the world's fifth-largest by production.
- India has retail market worth \$1.17 trillion, which contributes over 10% of India's GDP. It also has one of the world's fastest growing e-commerce markets.
- India has the world's fourth-largest natural resources, with the mining sector contributing 11% of the country's industrial GDP and 2.5% of total GDP.
- It is also the world's second-largest coal producer, the second-largest cement producer, the second-largest steel producer, and the third-largest electricity producer.

Implications:

- Historically, an economy would undergo structural changes when growing: agriculture's contribution to the gross domestic product would decline steadily, industry's contribution would rise steadily and compensate, and later, the services sector would follow.
- Contrary to this historical pattern, the services sector has bypassed the industrial sector in India, and it dominates the economy.
- An empirical analysis of the nature and causes of structural change in the Indian economy shows that the industry and the economy are driven by the services sector, and the sector's growth and dominance is influenced by external factors, such as foreign direct investment.

Conclusion

According to the World Bank, to achieve sustainable economic development, India must focus on public

sector reform, infrastructure, agricultural and rural development, removal of land and labour regulations, financial inclusion, spur private investment and exports, education, and public health.

14. Explain why foreign trade is important for India. Discuss the trends of Indian exports and imports in recent years. [20 Marks]

India is the sixth largest economy in the world and its rich –mineral reserve and diversified resources across the length and breadth of the India has always fuelled the foreign trade to various destinies in the world.

Though India struggles in terms of its trade deficit and unfavorable balance payments scenario but it has in recent times has become member of various trade blocs (Mercusor, SAFTA. Quad) and signed Free Trade agreements with emerging and developed nations to enhance its foreign trade.

Importance:

- Accelerate economic activity and make the most of global market opportunities
- Encourage sustained economic growth by providing access to raw materials, components, intermediates (goods used as inputs for the production of other goods), consumables and capital goods required for production
- Strengthen Indian agriculture, industry and services
- Generate employment
- Encourage stakeholders to strive for international standards of quality
- Provide quality consumer products at reasonable prices

Trends of Indian exports and imports

- India had a total export of 323,250,726.42 in thousands of US\$ and total imports of 478,883,729.11 in thousands of US\$ leading to a negative trade balance of -155,633,002.69 in thousands of US\$
- The trade growth is 0.71% compared to a world growth of -1.13%. GDP of India is 2,870,504,096,717.48 in current US\$.
- India services export is 214,761,539,670.90 in BoP, current US\$ and services import is 130,535,200,230.31 in BoP, current US\$.
- India exports of goods and services as percentage of GDP is 18.43% and imports of goods and services as percentage of GDP is 20.96%.

Exports and Imports

Now, India exports around 7500 commodities to about 190 countries, and imports around 6000 commodities from 140 countries. Exports and Imports are not only restricted to commodities (merchandise). Service is also a major export/import item.

Top Trading Partners of India

- India's top five trading partners continue to be USA, China, UAE, Saudi Arabia and Hong Kong.
- Top 10 Export Commodities
- Petroleum Products
- Pearl, Precious, Semiprecious Stones
- Drug Formulations, Biologicals
- Gold and Other Precious Metal Jewellery
- Iron and Steel
- Electric Machinery and equipment
- Organic Chemicals
- RMG Cotton including Accessories

- Motor Vehicles/ Cars
- Marine Products

Top 10 Countries to which India exports the most

- U S A
- UAE
- China PRP
- Hong Kong
- Singapore
- United Kingdom
- Netherland
- Germany
- Bangladesh PR
- Nepal

Service Exports: Top Services

- The composition of service exports has remained largely unchanged over the years.
- Software services constitute the bulk of it at around 40-45 per cent, followed by business services at about 18-20 per cent, travel at 11-14 per cent and transportation at 9-11 per cent.

Top 10 Import Commodities

- Petroleum: Crude
- Gold
- Petroleum Products
- Coal, Coke and Briquettes, etc.
- Pearl, Precious, Semiprecious Stones
- Electronic Components
- Telecom Instruments
- Organic Chemicals
- Industrial Machinery for Dairy etc.
- Iron and Steel

Top 10 Countries from which India imports the most

- China PRP
- USA
- UAE
- Saudi Arabia
- Iraq
- Switzerland
- Hong Kong
- Korea RP
- Singapore

- Indonesia

Service Imports: Top Services

- Over the years, service imports in relation to GDP have been steadily rising putting pressure on BoP to worsen.
- However, the increase in service imports to GDP ratio is inevitable given a rising level of FDI and a gradual upscaling of the Make in India program.
- Business Services, Travel, and Transportation are the three top service imports.

Looking ahead:

Road to \$5 Trillion by 2025

- India aspires to be a \$5-trillion economy by 2025. To achieve this dream, it needs to:
- Register a GDP growth rate of 8% or more in the next few years
- Triple its exports to \$1 trillion by 2025.
- This is a tough task, considering Indian exports have hovered around the \$300-billion mark since 2011-2012. Battered by the pandemic, exports for the April-November 2020 period stood at \$304.25 billion. The country's GDP reached \$ 2.88 trillion in 2019-2020

15. Discuss the justifications of India's bid for permanent member of UN security council. [20 Marks]

The UNSC comprises 15 members, including 10 non-permanent and five permanent members. The 193-member UNSC holds elections every year to elect five non-permanent members for a two-year term at the UN. Apart from this, there are five permanent members of the Council-China, France, Russia, the UK and the US.

Case for Permanent Membership of India in UNSC:

- India's Historic Association with the UN System: India is the founding member of the UN.
- India, till now has been elected for eight terms for a two-year non-permanent member seat.
- Most significantly, India has almost twice the number of peacekeepers deployed on the ground than by P5 countries.
- India's Intrinsic Value: India being the largest democracy and second-most populous country (soon to become most populous) in the world, are the primary reasons for it to be granted permanent membership in UNSC.
- Also, India is one of the largest economies and fastest-growing economies of the world.
- India's Geopolitical Footprint: India's acquired status of a Nuclear Weapons State (NWS) in May 1998 also makes India a natural claimant as a permanent member similar to the existing permanent members who are all Nuclear Weapon States.
- Also, India has been inducted in various export control regimes like MTCR, Wassenaar arrangement, etc.
- India's international profile and capabilities rise due to its ever-expanding global footprint in diverse areas like politics, sustainable development, economics, and culture and science and technology.
- Representing the developing World: India is the undisputed leader of the Third world countries, as reflected by its leadership role in the Non-Aligned Movement.

Looking ahead:

- It is argued by critics that India has still not signed the Nuclear Non-Proliferation Treaty (NPT) and also refused to sign the Comprehensive Nuclear-Test-Ban Treaty in 1996.
- China, which has veto power in the UNSC being one of its five permanent members, has been stonewalling India's efforts to become a permanent member.
- Though India is a bright spot in the global economy and its macroeconomic fundamentals are stable, it shows poor performance in many socio-economic indicators like the Human Development Index.
- India's capacity to project its military power beyond the Indian Ocean region is still to be tested. Further, India heavily relies on weaponry imports from US and Russia for its military requirements.

16. What are the possible implications for India of US withdrawal from Afghanistan? [20 Marks]

The speedy withdrawal of US troops from Afghanistan has been matched by the swift advance of the Taliban across the nation. While the US has confirmed that 90% of the withdrawal is done, the Taliban has claimed that it is in control of 85% of Afghanistan territory.

These developments have moved Afghanistan into the court of regional powers that now have the burden of managing the military vacuum created by the US retreat.

The idea of a regional solution to Afghanistan has always had much political appeal. But divergent regional strategic perspectives limit the prospects for a sustainable consensus on Afghanistan.

Implications for India

- India is wary of the future of the Afghan government without the support of the US military as it will trigger a geopolitical flux in the region.
- The withdrawal from Afghanistan will only bring challenges for the Indian Subcontinent as the US military presence kept a check on the radically extremist forces and created the possibility of a conducive environment for India to work with Afghanistan.
- The withdrawal can lead to a surge in international and regional terrorism, re-emergence of Taliban's influence on Pakistan and the political instability it will create in the region.
- India's larger concerns are about the resurgence of Taliban, which can undoubtedly reassure and incite the extremist elements in Kashmir and other parts of India through India-focused militant groups such as Lashkar-e-Toiba and Jaish-e-Mohammed, which are believed to have relocated to Afghanistan in large numbers.
- Unlike the United States, both India and Pakistan share a geographical proximity to Afghanistan, therefore any political instability in the region will affect both the countries.

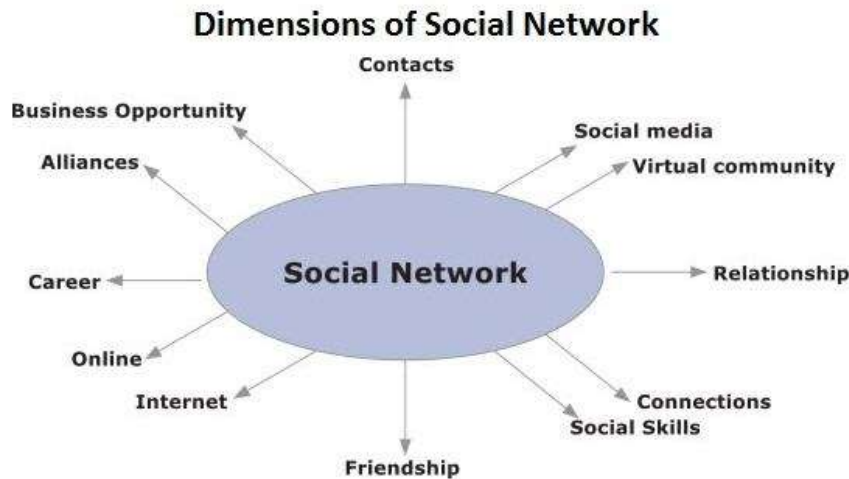
Conclusion

- The US's exit from Afghanistan has triggered Taliban emergence, geopolitical flux and thus, instability in the region.
- As these factors will increasingly push India into a geopolitical tough spot in the region, smart statecraft, therefore, is required to deal with changing dynamics in Afghanistan.
- If India remains active and patient too, many opportunities could open up in the new Afghan phase.

17. Wireless communication are curse for society. Please justify the statement. [20 Marks]

By enabling tetherless connectivity first between people, then between people and the Internet, wireless communications fundamentally transformed our daily life and created a fully connected society. Over the past two decades, mass-offering of mobile broadband (MBB) access to the Internet has been the dominating theme of wireless communications and recently became a reality with introduction of various advanced

transmission technologies, including multiple antenna transmission and reception (MIMO), multicarrier transmission, channel-adaptive transmission, etc.



Challenges

Hate speech and Rumours

- Hate speech and rumours in India have been responsible for acts of violence and deaths in many of the cases for quite some time now.
- The most recent being the case when two sadhus and their driver were lynched in Gadchinchale village in Palghar, Maharashtra this year.
- The incident was fuelled by WhatsApp rumours about thieves operating in the area and the group of villagers had mistaken the three passengers as thieves and killed them. Several policemen who intervened were also attacked and injured.
- Similarly Hate Speech on Social Media had a big role in the Delhi Riots of 2020.

Fake News

- A 2019 Microsoft study found that over 64% of Indians encounter fake news online, the highest reported amongst the 22 countries surveyed.
- There are a staggering number of edited images, manipulated videos and fake text messages spreading through social media platforms and messaging services like WhatsApp making it harder to distinguish between misinformation and credible facts.

Online Trolling

- Trolling is the new bi product of Social Media.
- Vigilantes take law in their own hand and start trolling and threatening those who don't agree with their views or narratives.
- It has led to anonymous trolls who attack the reputation of an individual.
- Women Safety
- Women face cyber rape and threats that affect their dignity severely.
- Sometimes their pictures and videos are leaked with and are forced to cyber bullying.

Conclusion

- As India is not a surveillance state, there must not be any illegal or unconstitutional check on the right to privacy and freedom of speech and expression which are the fundamental rights of every citizen.
- There must be a balance as the Constitutions itself has provided several limitations on one's right to speech and expression.

- Big technology firms who own social media platforms can mediate content and thus impinge on democracy.
- They and everyone must be held accountable for their actions which have wide social ramification.

18. Computer use various kinds of memory devices. In what way they differ from each other.

[20 Marks]

A memory storage device for a computer enables its user to store and safely access the data and applications on a computer device. Knowing and learning about these computer storage devices is necessary as it works as one of the core components of the system.

Types of Computer Storage

The computer storage unit is divided into three parts. Given below are details about the three types of computer storage:

Primary Storage: This is the direct memory which is accessible to the Central Processing Unit (CPU).

- This is also known as the main memory and is volatile.
- This is temporary. As soon as the device turns off or is rebooted, the memory is erased
- It is smaller in size
- Primary storage comprises only of Internal memory
- Examples of primary storage include RAM, cache memory, etc.

Secondary Storage: This type of storage does not have direct accessibility to the Central Processing Unit.

- The input and output channels are used to connect such storage devices to the computer, as they are mainly external
- It is non-volatile and larger storage capacity in comparison to primary storage
- This type of storage is permanent until removed by an external factor
- It comprises of both internal and external memory
- Examples of secondary storage are USB drives, floppy disks, etc.

Tertiary Memory: This type of storage is generally not considered to be important and is generally not a part of personal computers.

- It involves mounting and unmounting of mass storage data which is removable from a computer device
- This type of storage holds robotic functions
- It does not always require human intervention and can function automatically
- Also, for further information, refer to the links below where other important Computer Awareness topics have been discussed in detail. Also, sample questions based on each of them have also been given:

List of Computer Storage Devices

There are four types of devices in which computer data can be stored. Discussed below are the same in detail.

Magnetic Storage Devices

The most commonly used storage devices in today's time are magnetic storage devices. These are affordable and easily accessible. A large amount of data can be stored in these through magnetised mediums.

A magnetic field is created when the device is attached to the computer and with the help of the two

magnetic polarities, the device is able to read the binary language and store the information. Given below are examples of magnetic storage devices.

Floppy Disk – Also known as a floppy diskette, it is a removable storage device which is in the shape of a square and comprises magnetic elements. When placed in the disk reader of the computer device, it spins around and can store information. Lately, these floppy disks have been replaced with CDs, DVDs and USB drives

Hard Drive – This primary storage device is directly attached to the motherboard's disk controller. It is integral storage space as it is required to install any new program or application to the device. Software programs, images, videos, etc. can all be saved in a hard drive and hard drives with storage space in terabytes are also easily available now

Zip Disk – Introduced by Iomega, is a removable storage device which was initially released with a storage space of 100 MB which was later increased to 250 and then finally 750 MB

Magnetic Strip – A magnetic strip is attached in the device comprising digital data. The most suitable example for this is a debit card which has a strip placed on one of its sides which stores the digital data

Optical Storage Devices

Such devices used lasers and lights to detect and store data. They are cheaper in comparison to USB drives and can store more data. Discussed below are a few commonly used optical storage devices.

CD-ROM – This stands for Compact Disc – Read-Only Memory and is an external device which can store and read data in the form of audio or software data

Blu-Ray Disc – Introduced in 2006, Blu-ray disk was backup up by major IT and computer companies. It can store up to 25 GB data in a single-layer disc and 50 GB data in a dual-layer disc

DVD – Digital Versatile Disc is another type of optical storage device. It can be readable, recordable, and rewritable. Recordings can be done in such devices and then can be attached to the system

CD-R – It is a readable Compact Disc which uses photosensitive organic dye to record data and store it. They are a low-cost replacement for storing software and applications

Flash Memory Devices

These memory storage devices have now replaced both magnetic and optical storage devices. They are easy to use, portable and easily available and accessible. They have become a cheaper and more convenient option to store data.

USB Drive – Also, known as a pen drive, this storage device is small in size and is portable and ranges between storage space of 2 GB to 1 TB. It comprises an integrated circuit which allows it to store data and also replace it

Memory Card – Usually attached with smaller electronic and computerised devices like mobile phones or digital camera, a memory card can be used to store images, videos and audios and is compatible and small in size

Memory Stick – Originally launched by Sony, a memory stick can store more data and is easy and quick to transfer data using this storage device. Later on, various other versions of memory stock were also released

SD Card – Known as Secure Digital Card, it is used in various electronic devices to store data and is available in mini and micro sizes. Generally, computers have a separate slot to insert an SD card. In case they do not have one, separate USBs are available in which these cards can be inserted and then connected to the computer

There are various other flash memory drives which are also easily available in the market and are easily accessible and easy to use.

Cloud Computing:

The term Cloud computing is used to describe the data centres available for users over the Internet where they can save their databases and files. This data can easily be accessed over the internet anytime and anywhere.

This has become a common mode to store data. The largest or the smallest computerised devices can use the online cloud storage to save their data files. This option is also available in mobile phones where a backup of our files and data is being managed.

19. Explain, with suitable examples, the terms frequency relative frequency and cumulative frequency. The word length for each of the 90 words in a poem is as follows. [20 Marks]

5	4	3	5	8	6	6	3	4	3
4	4	5	8	2	6	7	6	4	5
6	4	9	6	4	2	2	2	9	2
3	3	3	2	4	7	7	2	4	4
4	3	4	4	2	4	4	9	3	7
4	5	9	6	3	5	2	5	10	3
5	7	3	3	3	6	2	5	3	3
3	2	4	5	8	5	3	4	4	6
7	2	3	5	5	5	3	2	4	5

Summarize the above data in terms of a suitable frequency distribution and obtain less than type cumulative frequencies. With the help of constructed frequency distribution estimate the following:

- **Probability that the length of a word in the poem is 9.**
- **Probability that the length of a word in the poem is less than or equal to 3.**
- **Probability that the length of a word in the poem is not less than 5**

ANSWER:

Frequency: Total number of times data occurs in the set is known as frequency.

Relative Frequency: Relative frequency is the fraction or proportion times an answer occurs in the data set. Relative frequencies can be written in decimal, fraction or percents.

Cumulative Relative Frequency: It is the collection of all previous frequencies together. To find the cumulative relative frequencies, add all the previous relative frequencies to the relative frequency for the present given row or column. Cumulative relative frequency is the accumulation of the previous relative frequencies.

Cumulative frequency distribution is a form of frequency distribution that represents the sum of a class and all classes. The relative frequency of a class is the percentage of the data that falls in that class/bin, while the cumulative frequency of a class is the sum of the frequencies of that class and all previous classes.

Price Range	Frequency	Cumulative frequency
-------------	-----------	----------------------

0 - 50	800	800
50 - 100	1200	2000
100 - 500	700	2700
500 - 1000	450	3150
1000 - 1500	200	3250

Thus, the key difference can be stated as, relative frequency represents the ratio of the number of times a value of the data occurs in a dataset, while cumulative frequency represents the sum of the relative frequencies.

Length of word	Frequency	Cum frequency (less than)
2	13	13
3	19	32
4	20	52
5	15	67
6	9	76
7	6	82
8	3	85
9	4	89
10	1	90

- (a) $\text{Prob}(=9) = \frac{4}{90} = 0.044$
 (b) $\text{Prob}(\leq 3) = \frac{32}{90} = 0.355$
 (c) $\text{Prob}(\geq 5) = 1 - \left(\frac{13+19+20}{90}\right) = 1 - \frac{52}{90} = 0.422$

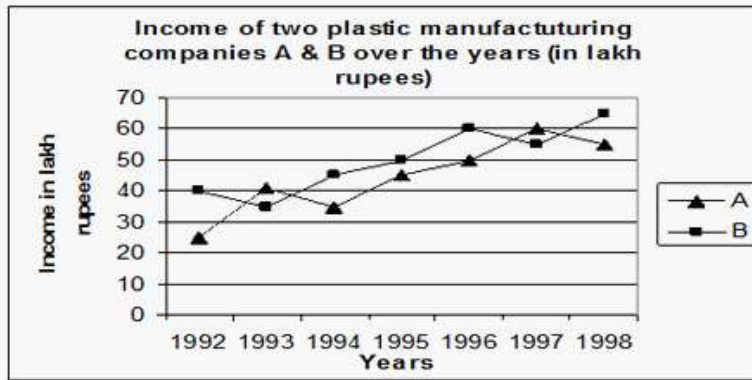
20. Discuss briefly some of the important types of diagrams which are used in representation of statistical data. Draw a suitable diagram to represent the following data on distribution of employment status of people by their broad categories. [20 Marks]

Employment status	Rural		Urban	
	Male(in1000)	Female(in1000)	Male(in1000)	Female(in1000)
Employed	961	708	977	826
Unemployed	11	9	7	8
Not in Labour force	28	283	16	166

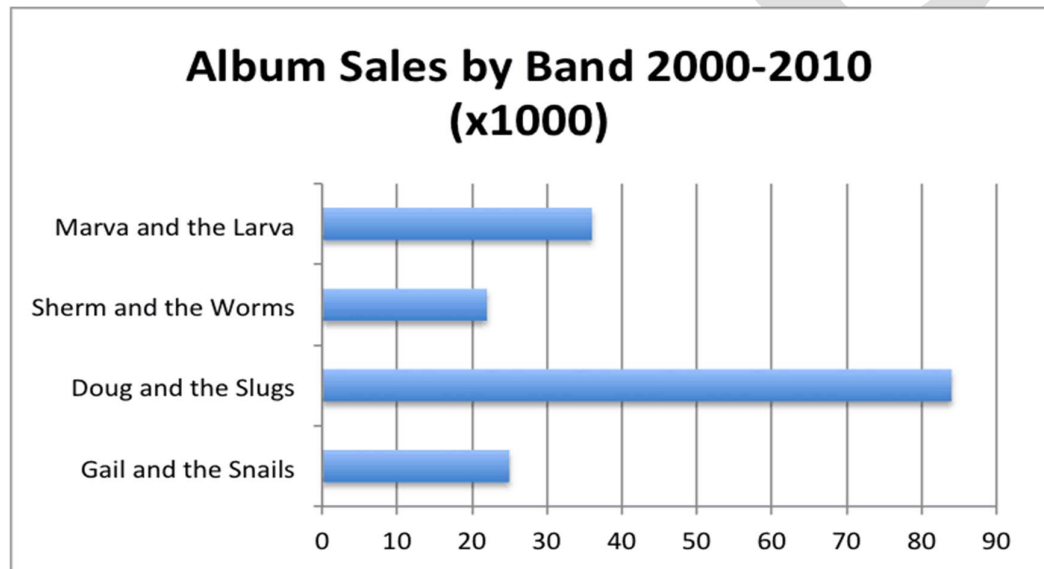
Solution:

A large variety of diagrammatic devices are used in practice to present statistical data . However, we shall discuss some of the most commonly used diagrams, which are broadly classified as follows:

- (1) One-dimensional diagram such as line diagrams and bar diagrams
 - (2) Two dimensional diagrams such as rectangles, squares, and circles or pie diagram.
 - (3) Three dimensional diagrams such as cubes, spheres, prisms, cylinders and blocks
 - (4) Pictograms
 - (5) Cartograms
- (1) **Line Diagrams**



Bar diagrams



(2) Rectangular diagram

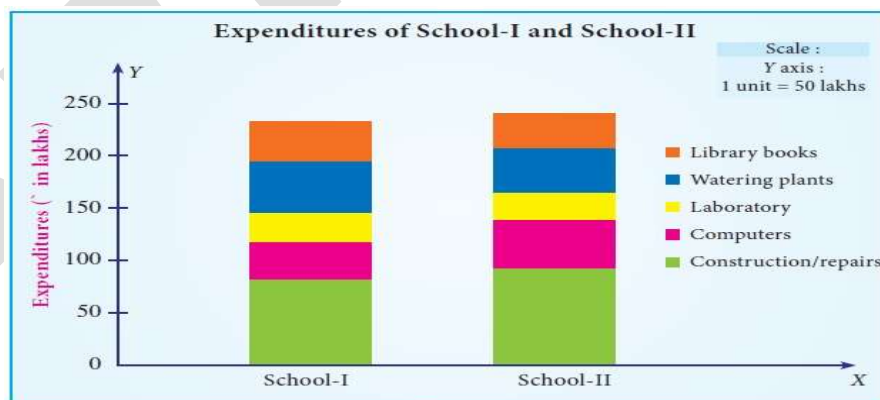
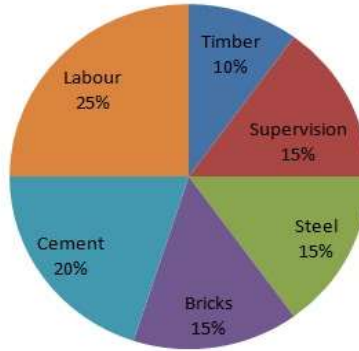


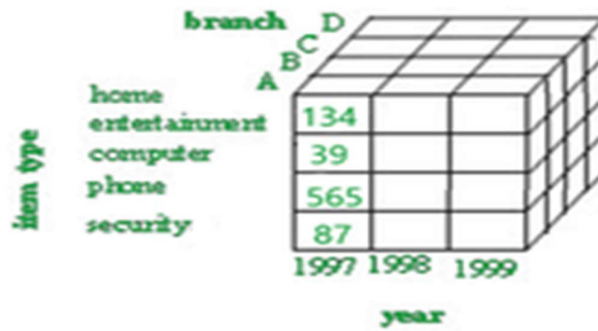
Fig 4.4 Component Bar diagram for expenditures of School I and School II

Pie diagram or charts

Cost of Construction of House



(3) Cubes diagrams



(4) Pictograms

Variety	Amount of Apples sold (in Kg)
Fuji	
Kiku	
Golden delicious	
Red delicious	
Ambrosia	
Key : Represents 4 Kg	

5. Cartograms



Second part

