Conquer Mains Challenge - Day 7

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GS Paper 1

The Freedom Struggle - its various stages and important contributors /contributions from different parts of the country.

100th year of Montford Reform:

Why in News?

This month marks the **100th year of the publication of the 'Report on Indian Constitutional Reforms', commonly known as the Montagu-Chelmsford Report (MCR)**.

What is Montagu- Chelmsford Report?

The Montagu-Chelmsford Report, prepared in 1918,**formed the basis of the Government of India Act 1919**.These are related to **constitutional reforms**.

These were reforms introduced by the British colonial government in India **to introduce self-governing institutions gradually to India**. The reforms take their name from **Edwin Samuel Montagu, the Secretary of State for India** during the latter parts of World War I and **Lord Chelmsford, Viceroy of India** between 1916 and 1921.

Why the reforms are called the Magna Carta of Modern India?

The 1919 Act went on to become **the basis for the Government of India Act, 1919**

and 1935, and, ultimately, the Constitution.

The **key principles of responsible government, self-governance and federal structure grew out of these reforms**.

The Act on Indian constitutional reforms along with the Montagu Declaration are, thus, worthy claimants of the title of **the Magna Carta of Modern India**.

What precedes?

This was the era of World War I and our country witnessed a rapid growth of revolutionaries. During the First World War, Gandhi Ji had requested the country to help the allies in war. Indian public was expecting that they would also get democratic reforms.

Samuel Montagu is known to have put a statement in the British Cabinet which asked for ***"gradual development of free institutions in India with a view to ultimate self-government" however, later the words "ultimate self government"*** were removed from his statement and He declared what is now known as Montagu Declaration.

The Montagu declaration reads as:

"Increasing association of Indians in every branch of the administration and the gradual development of self-governing institutions with a view to the progressive realization of responsible government in India as an integral part of the British Empire".

The key phrase ***"ultimate self-government" was removed but, still the another key phrase "responsible government"*** in this statement gave the inference for the first time that rulers are answerable to the public.

The declaration made the moderates happy and they said ***"It is Magna Carta of India"***. However extremists expressed that it fell short for legitimate expectations of India. After all, total independence was what they wanted.

The date was 20 August 1917 and it is also known as ***"August Declaration"***. The Government of India act 1919 was passed on the basis of recommendations of Lord Chelmsford and Samuel Montagu to introduce ***self-governing institutions gradually to India***. This act covered 10 years from 1919 to 1929.

Highlights of the Government of India Act 1919:

- ***Separation of subjects:***It relaxed the central control over the provinces by **demarcating and separating the central and provincial subjects**. The central and provincial legislatures were authorised to make laws on their respective list of subjects. However, the structure of government continued to be centralised and unitary.
- ***Introduction of Dyarchy:*****It further divided the provincial subjects into two parts—transferred and reserved**. The transferred subjects were to be administered by the governor with the aid of ministers responsible to the legislative Council. The reserved subjects, on the other hand, were to be administered by the governor and his executive council without being responsible to the legislative Council. This dual scheme of governance was known as 'dyarchy'—a term derived from the Greek word di-arche which means double rule. However, this experiment was largely unsuccessful.
- ***It introduced, for the first time, bicameralism***. Thus, the Indian Legislative Council was replaced by a bicameral legislature consisting of an Upper House (Council of State) and a Lower House (Legislative Assembly). The majority of members of both the Houses were chosen by direct election.
- ***Indians in Viceroy's executive council:***It required that the three of the six members of the Viceroy's executive Council (other than the commander-in-chief) were to be Indian.
- ***It extended the principle of communal representation*** by providing separate electorates for Sikhs, Indian Christians, Anglo-Indians and Europeans. It granted franchise to a limited number of people on the basis of property, tax or education.
- ***It created a new office of the High Commissioner for India in London*** and transferred to him some of the functions hitherto performed by the Secretary of State for India.
- ***It provided for the establishment of a public service commission***. Hence, a Central Public Service Commission was set up in 1926 for recruiting civil servants.
- ***Separation of Budgets:***It separated, for the first time, provincial budgets from the Central budget and authorised the provincial legislatures to enact their budgets.
- ***Review after 10 years:***It provided for the appointment of a statutory commission to inquire into and report on its working after ten years of its coming into force.

How was it received by the Indians and how did the British respond?

The 1919 reforms did not satisfy political demands in India. So, they went against the government with strikes and mass movements. However, the British repressed opposition, and **restrictions on the press and on movement were re-enacted through the Rowlatt Acts** introduced in 1919. **The act allowed certain political cases to be tried without juries and permitted internment of suspects without trial**.

Besides, **Indian legislators rammed these measures through the Legislative Council with the unanimous opposition**. Several members of the council including Jinnah **resigned in protest**.

In conclusion, these measures were widely seen throughout India of the **betrayal of strong support given by the population for the British war effort**.

It led to extreme events- JallianWallabagh Massacre:

The situation worsened in Amritsar in April 1919, when **General Dyer ordered his troops to open fire on demonstrators hemmed into a tight square**, resulting in the deaths of 379 civilians. Montagu ordered an inquiry into the events at Amritsar by Lord Hunter.

The Hunter Inquiry recommended that General Dyer, who commanded the troops, be dismissed, leading to Dyer's sacking. Many British citizens supported Dyer, whom they considered had received unfair treatment from the Hunter Inquiry.

Final outcomes:

Though hailed as Magna Carta of Modern India, the reforms gave a new perspective to the National Movement. It **inflamed Indian nationalist sentiment** ending the initial response of reluctant co-operation.

At the grass roots level, **many young Indians wanted faster progress towards Indian independence** and were disappointed by lack of advancement as Britons returned to their former positions in the administration.

At the Indian National Congress annual session in September 1920, delegates supported **Gandhi's proposal of swaraj or self-rule** – preferably within the British Empire or out of it if necessary. The proposal was to be implemented through a policy of non-cooperation with British rule meaning that Congress did not field candidates in the first elections held under the Montagu-Chelmsford reforms in 1921.

Flow of Thoughts:

- The era that precedes Montagu-Chelmsford reforms.
- Highlights of Montagu-Chelmsford reforms and their significance.
- Key features of Montagu-Chelmsford Act.
- Important Outcomes.

GS Paper 2

Issues relating to development and management of Social Sector/Services relating to Health, Education, Human Resources.

Government policies and interventions for development in various sectors and issues arising out of their design and implementation.

Antimicrobial Resistance:

Why in News?

Drug resistance has been called one of the biggest threats to global health, food security, and development. If antimicrobials stop working, doctors won't have effective drugs to treat deadly infections.

What is antibiotic resistance?

Antibiotics are medicine used to treat infections caused by bacteria. **Antibiotic Resistance refers to resistance developed by bacteria against antibiotics or the ability of bacteria to mutate or change so as to resist the effects of antibiotics**. The more we use them, and the more we abuse them, the less effective they become.

What leads to resistance?

Antibiotics are unquestionably useful against bacterial infections. However, **indiscriminate use has resulted in development of resistance** in patients with bacterial infections thereby leading to long lasting illnesses.

Thanks to that annoying thing called evolution, **bacteria are constantly adapting to counter-attack antibiotics**. Antibiotic resistance is one of the most significant threats to patients' safety. It is driven by overusing antibiotics and prescribing them inappropriately.

Why is it a worrying trend?

- Antibiotic resistance causes people to be **sick for longer and increases the risk of death**.
- Resistance also **increases the cost of health care** with lengthier stays in hospital and more intensive care required.
- Antibiotic-resistant bacteria **increase the chance and severity of illness** and ultimately death.
- **Few new antibiotics are being developed**, which is exacerbating the situation as more antibiotic resistant bacteria adapts and arises.
- Antimicrobial resistance put the gains of the Millennium Development Goals at risk and endangers achievement of the Sustainable Development Goals.

Indian Scenario and why is the country vulnerable?

The country has among the **highest bacterial disease burden in the world**. Antibiotics, therefore, have a critical role in limiting morbidity and mortality in the country. The 2015 WHO multi-country survey revealed widespread public misunderstanding about antibiotic usage and resistance.

AMR has huge implications for India. There is **a need to have in place a good comprehensive AMR National Action Plan** in line with the Global AMR action plan.

How to regulate?

Reduce misuse:For resistance, this means **cutting the misuse of antibiotics in humans and farm animals**, fighting environmental pollution, improving infection control in hospitals, and boosting surveillance.

Individual role:While most of these goals need government intervention, **individuals have a critical part to play too**. This is especially true for India, which faces a unique predicament when it comes to restricting the sale of antibiotics — some Indians use too few antibiotics, while others use too many.

Reduce the irrational use:Many of the 410,000 Indian children who die of pneumonia each year do not get the antibiotics they need, while others misuse drugs, buying them without prescription and taking them for viral illnesses like influenza. **Sometimes this irrational use is driven by quacks**. But just as often, qualified doctors add to the problem by yielding to pressure from patients or drug-makers.

What can individuals do?

It is important to understand that, although they are very useful drugs, antibiotics designed for bacterial infections are not useful for viral infections such as a cold, cough, or the flu. Individuals need to follow these guidelines:

- Before taking any antibiotic ask the physician if it is required and beneficial.
- Always take antibiotics as prescribed by the physician.
- Take antibiotics to treat only bacterial infections.
- Do not take antibiotics in viral infections such as cold, cough, or flu
- Do not repeat the same antibiotic for the next time you get sick.
- Do not stop antibiotic before complete prescribed course of treatment.
- Do not skip doses.
- Do not copy the antibiotic with the same diseases which is prescribed for someone else.

What are the steps taken by India to counter anti-microbial resistance? What are the challenges in it?

India awoke to risks of antibiotic overuse late and is struggling to control the menace of antibiotic resistance since then. It took the issue seriously after a resistant bug was named as The New Delhi Metallo-beta-lactamase-1 (NDM 1). In 2011, ***a National Policy for Containment of Antimicrobial Resistance*** in India was released.

What is India's Red Line campaign?

India's Medicines with ***the Red Line campaign*** was launched in February 2016 by the Union Ministry of Health and Family Welfare to tackle the problem of growing misuse of antibiotics across the country. Its aim is to curb irrational use of antibiotics and create awareness on the side effects of taking antibiotics without prescription. Under it, all prescription only antibiotics will be marked with a vertical red line on the packets. The red line antibiotics packets should be consumed on doctor's advice and the patients need to complete the full course prescribed by the doctor.

Global action plan

WHO has unveiled a global action plan to combat antimicrobial resistance. It has defined five strategic objectives to be followed in the next 5 to 10 years. They are:

- ***Objective 1:*** Improve awareness and understanding of antimicrobial resistance through effective communication, education and training.
- ***Objective 2:*** Strengthen the knowledge and evidence base through surveillance and research.
- ***Objective 3:*** Reduce the incidence of infection through effective sanitation, hygiene and infection prevention measures.
- ***Objective 4:*** Optimize the use of antimicrobial medicines in human and animal health.
- ***Objective 5:*** Develop the economic case for sustainable investment that takes account of the needs of all countries, and increase investment in new medicines, diagnostic tools, vaccines and other interventions.

Modern technology as an answer:

Scientists have developed ***light-activated nanoparticles*** — each roughly 20,000 times smaller than the thickness of a single human hair and have shown in lab tests that these ***"quantum dots"*** are more than 90% effective at wiping out antibiotic-resistant germs like Salmonella, E. coli and Staphylococcus.

How Quantum dots fight Superbugs?

When placed among bacteria in a solution, something interesting happens. Bacteria rely on **"redox" reactions**, those involving the addition or removal of oxygen (reduction and oxidation, respectively). And when several Quantum dots are "excited" nearby, they produce chemicals that are able to be reduced or oxidized by reactive compounds within the bacteria. This effectively interferes with their intercellular

processes, disrupts their cell growth, and kills them. In a lab-grown culture, this method has been shown to kill 92% of a variety of drug-resistant bacterial cells, while leaving other cells alone.

Way ahead:

WHO Report states that ***"the world is headed for a post- antibiotic era in which common infections and minor injuries, which have been treatable for decades, can once again kill"***.

Resistance has negative externalities for the whole society. Due to reckless use, they are not only losing their effectiveness but becoming resistant. It was only about 70 years ago that penicillin was discovered.

Today the resistance in microbes is developing at a much faster rate than the rate at which new drugs are developed. ***Much needs to be done, not only by governments but also by the private sector, which manages a big proportion of health care, as well as the veterinary sector***.

Flow of Thoughts:

- What Antibiotic Resistance?
- Why it has become a global concern?
- How is India vulnerable?
- What needs to be done to reverse this trend?
- Efforts by government and individuals.

GS Paper 3

infrastructure energy.

Fast forwarding to thorium

Why in News?

The critical shortage of fissile material has prevented the large-scale deployment of thorium-fuelled reactors in India. Due to this, the construction of the advanced heavy-water reactor (AHWR) has also been put off several times since it was first announced in 2004.

Background:

India has very modest deposits of uranium and some of the world's largest sources of thorium. Keeping this in mind, in 1954 HomiBhabha envisioned India's nuclear power programme in three stages to suit the country's resource profile.

India's three stage nuclear power programme:

The Indian nuclear power programme, launched in 1954, envisaged a three-stage development of nuclear power generation from the country's uranium and thorium resources.

1. **In the first stage**, heavy water reactors fuelled by natural uranium would produce plutonium.
2. **The second stage** would initially be fuelled by a mix of the plutonium from the first stage and natural uranium. This uranium would transmute into more plutonium and once sufficient stocks have been built up, thorium would be introduced into the fuel cycle to convert it into uranium 233 for the third stage.
3. **In the final stage**, a mix of thorium and uranium fuels the reactors. The thorium transmutes to U-233 as in the second stage, which powers the reactor. Fresh thorium can replace the depleted thorium in the reactor core, making it essentially a thorium-fuelled reactor even though it is the U-233 that is undergoing fission to produce electricity.

What next?

With 500 MW Prototype Fast Breeder Reactor (PFBR) at Kalpakkam, India is finally ready to start the second stage. However, experts estimate that it would take India many more Fast Breeder Reactors and at least another four decades before it has built up a sufficient fissile material inventory to launch the third stage.

How to overcome the shortage of fissile material (plutonium)?

India can overcome the shortage of fissile material by procuring it from the international market.

Are there any hurdles in procuring plutonium?

- There is also no law that expressly forbids the procurement of this fissile material. Most nuclear treaties such as the Convention on the Physical Protection of Nuclear Material address only U-235 and U-233, presumably because plutonium has so far not been considered a material suited for peaceful purposes.
- Even the Non-Proliferation Treaty (NPT) merely mandates that special fissionable material — which includes plutonium — if transferred, be done so under safeguards.
- Thus, the legal rubric for safeguarded sale of plutonium already exists. The physical and safety procedures for moving radioactive spent fuel and plutonium also already exists.

How this procurement would help other countries?

If India were to start purchasing plutonium and/or spent fuel, it would immediately alleviate the pressure on countries like Japan and the U.K. who are looking to reduce their stockpile of plutonium.

Why there is an emphasis on thorium technology:

- Thorium reactors produce far less waste than present-day reactors.
- They have the ability to burn up most of the highly radioactive and long-lasting minor actinides that makes nuclear waste from Light Water Reactors a nuisance to deal with.
- The minuscule waste that is generated from these reactors is toxic for only three or four hundred years rather than thousands of years.

- Thorium reactors are cheaper because they have higher burnup.
- Thorium reactors are significantly more proliferation-resistant than present reactors. This is because the U-233 produced by transmuting thorium also contains U-232, a strong source of gamma radiation that makes it difficult to work with. Its daughter product, thallium-208, is equally difficult to handle and easy to detect.

Way ahead:

Nuclear power is ***the fourth-largest source of electricity in India*** after thermal, hydroelectric and renewable sources of electricity.However,incidents like Fukushima incident have raised concerns over the safety of nuclear reactors. Concerns are also being raised over the nuclear waste which the plant generates. Hence, before the government proceeds further, it is necessary to address all these concerns.

Flow of Thoughts:

- What is India’s three stage nuclear programme?
- India’s nuclear potential and availability of thorium.
- Measures needed to augment the technology and fuel.
