14 July 2020: PIB Summary & Analysis

1. World Youth Skills Day

Context:

The World Youth Skills Day (WYSD) is observed on 15th July every year.

About WYSD:

- Designated by the United Nations General Assembly in 2014, the World Youth Skills Day is an opportunity for young people, technical and vocational education and training (TVET) institutions, and public and private sector stakeholders to acknowledge and celebrate the importance of equipping young people with skills for employment, decent work and entrepreneurship.
- The aim of WYSD is to recognize the strategic importance of equipping young people with skills for employment, decent work and entrepreneurship, and to highlight the crucial role of skilled youth in addressing current and future global challenges.
- The virtual event marking WYSD 2020 is organized by the Permanent Missions of Sri Lanka and Portugal to the UN, the Office of the Secretary-General's Envoy on Youth, UNESCO and ILO.
    - Several virtual events focused on the theme of "Skills for a Resilient Youth" will take place.
- In India, this day also marks the fifth anniversary of the launch of the Skill India Mission.
    - A Digital Conclave is being organized by the Ministry of Skill Development and Entrepreneurship to mark the occasion.

2. Wholesale Price Index (WPI)

Context:

Index Numbers of Wholesale Price in India for the month of June 2020 released.

To know what is Wholesale Price Index (WPI), click on the linked article.

3. PRAGYATA Guidelines on Digital Education

Context:

Union HRD Minister virtually releases PRAGYATA Guidelines on Digital Education.

Background:

- The COVID-19 pandemic has led to the closure of schools and has impacted over 240 million children of the country who are enrolled in schools. Extended school closures may cause loss of learning.
- To mitigate the impact of the pandemic, schools will not only have to remodel and reimagine the way teaching and learning have happened so far, but will also need to introduce a suitable method of delivering quality education through a healthy mix of schooling at home and schooling at school.

- The PRAGYATA guidelines have been developed from the perspective of learners, with a focus on online/blended/digital education for students who are presently at home due to lockdown.

About PRAGYATA Guidelines:

- The guidelines on Digital/Online Education provide a roadmap or pointers for carrying forward online education to enhance the quality of education.
- The PRAGYATA guidelines include eight steps of online/digital learning that is, Plan- Review- Arrange- Guide- Yak(talk)- Assign- Track- Appreciate.
- Based on the class of the students, the guidelines recommend the number of sessions per day and also the number of hours per session.
- These guidelines for school heads and teachers describe the need assessment, planning and steps to implement digital education while ensuring cyber safety and privacy measures.
- It also outlines the support to be provided to students with special needs.
- The main emphasis is on balanced online and offline activities keeping the screen time as an essential parameter in accordance with the level of students.
- Guidelines for physical health and mental wellness are stressed for all stakeholders so that children do not get overly stretched or stressed, or get affected negatively (postural defects, ophthalmic issues, and other physical problems) owing to prolonged use of digital devices.

4. Low-cost supercapacitor from industrial waste cotton & natural seawater electrolyte can help energy storage

Context:

Scientists at the International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI), an autonomous organization of the Department of Science and Technology, Govt. of India have developed a simple, low-cost, environmentally friendly, and sustainable supercapacitor electrode derived from industrial waste cotton which can be used as an energy harvester storage device.

What is supercapacitor?

- A supercapacitor is a high-capacity capacitor with a capacitance value much higher than other capacitors, but with lower voltage limits, that bridges the gap between electrolytic capacitors and rechargeable batteries.
    - A capacitor is a device that stores electrical energy in an electric field.
- It typically stores 10 to 100 times more energy per unit volume or mass than electrolytic capacitors, and can accept and deliver charge much faster than batteries.
- The supercapacitor is a next-generation **energy storage device** that has received extensive research attention owing to **advantages** such as high power density, long durability, and ultrafast charging characteristic as compared to conventional capacitors and lithium-ion batteries (LIB).
- Among the four main components of a supercapacitor - electrode, electrolyte, separator, and the current collector, the first two are the pivotal components, which directly determine the electrochemical behaviour of the supercapacitors.
- The fabrication cost of electrode materials, as well as electrolytes, should be reduced because these two components account for a major portion of the device manufacturing cost.

The Study:

- In search of a cost-effective material for making affordable supercapacitor devices, scientists at ARCI have converted industrial waste cotton into highly porous carbon fibres by activation process and then utilised the porous carbon fibres to make high-performance supercapacitor electrodes.
- The team also demonstrated the feasibility of using seawater as a natural electrolyte for the fabrication of aqueous-based supercapacitor devices, which shows great potential for practical implementation.
- This new find has great potential for the integrated solar cell with seawater-based supercapacitor as low cost, eco-friendly, efficient and self-powering device.

Highlight of the study:

- For the first time, natural seawater is explored as an environmentally friendly, cost-effective, scalable, and alternative aqueous electrolyte, which may replace the existing aqueous-based electrolytes for the economic fabrication of supercapacitor.