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ANALYSIS**



LAKSHYA ACADEMY®

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1 – About Digital world of cookies:

GS III

Science and Technology

- **Context:**

- Cookies are used by websites like Facebook and Google to monitor user behaviour online and make sure the advertisements they see match their choices.

- **How do cookies work?**

- Cookies are text files containing little bits of information, such as a login and password, that are used to identify your computer when you use a network. They are also frequently referred to as internet cookies.
- To identify particular users and enhance their online browsing experience, unique cookies are utilised.
- The server creates the data in a cookie at the time of your connection.
- This data has an ID that is exclusive to your computer written on it.
- Your computer and the network server exchange cookies, and the server reads the ID to determine what details to provide you specifically.

- **How do they function?**

- Cookies are used by websites such as Amazon to recall past interactions between customers and the products they have explored and transactions they have made.
- Equipped with this understanding, Amazon provides unique product suggestions and content, transforming online shopping into a customised boutique experience.
- Cookies are used by websites like Facebook and Google to monitor user behaviour online and make sure the advertisements you see match your interests.

- **Which kinds of cookies are there?**

- **Temporary cookies:**

- Similar to post-it notes for websites, session cookies are transient cookies.
- They are only kept in the computer's memory while you are browsing.
- They disappear as you close the browser.

- Website activities, such as items in a shopping cart, are remembered by websites thanks to session cookies.
- **Long-lasting cookies:**
 - Digital bookmarks are analogous to persistent cookies.
 - Even after your browser session is over, they remain on the device.
 - Persistent cookies store your language settings, login credentials, and even the adverts you have clicked on.
 - For a more customised online experience, they come in handy.
- **Safe cookies:**
 - Because they are only transmitted through encrypted networks, secure cookies are shielded from prying eyes.
 - Sensitive information, such as login passwords, is frequently stored in secure cookies.
- **Cookie third parties:**
 - Tracking and advertising are common uses for third-party cookies, which can be helpful but occasionally obtrusive.
- **Cookies' purposes:**
 - They serve as digital ID cards first and foremost, facilitating user authentication by enabling websites to identify you and maintain your log-in during the visit.
 - Second, they help you feel more personalised by remembering things like your preferred language or website theme.
 - Thirdly, they serve as the virtual counterpart of an online persistent shopping cart, making sure that the things you add online stay there when you come back.
 - Lastly, cookies are essential to targeted advertising because they allow advertisers to provide ads that are relevant to a user's interests and past browsing behaviour, which increases the allure of online buying.
- **Problems:**
- **Privacy issues:**
 - Cookies have the potential to trace your online activity, which can occasionally infringe upon your digital privacy even though it is usually innocuous. This raises privacy issues.

- **Risks to security:**
- When cookies are not properly secured, there is a security risk since it allows hackers to steal personal data.
- **User approval:**
- The day of user consent is here upon us.
- According to India's recently passed Digital Personal Data Protection Act 2023, websites must now obtain users' express agreement before collecting or using cookies to process their personal data.
- **Cookie third parties:**
- Debates about third-party cookies have led many web browsers to limit their use in order to protect user privacy.
- **Slow-loading website:**
- The abundance of cookies can create a data flood that clogs the browser and makes browsing the web slow.
- *Source → The Hindu*

2 – Details of Monoclonal antibodies:

GS II

Biotechnology related issues

- **Context:**
- India has contacted Australia to request dosages of monoclonal antibodies to fight the Nipah virus outbreak in Kerala.
- **A monoclonal antibody: what is it?**
- Proteins created in laboratories called monoclonal antibodies imitate the actions of natural antibodies that the immune system produces to fend off infections and foreign objects.

- An antigen and an antibody bind together.
- Antigens are foreign substances that typically cause disease and aid the immune system in getting rid of them from the body.
- Targeting particular antigens is the special purpose of monoclonal antibodies.
- In 1984, the Nobel Prize in medicine was given to Niels K. Jerne, Georges J.F. Köhler, and César Milstein for their work on the principle for producing monoclonal antibodies.

- **About m102.4:**

- Strong, completely human monoclonal antibody m102.4 neutralises the Hendra and Nipah viruses both externally and internally to living things.
- The viruses that cause diseases such as measles, influenza, and others are members of the Paramyxoviridae family, which includes the Hendra and Nipah viruses. These viruses reproduce within infected cells and are carried by bats.
- Both the Nipah virus and the Hendra virus are listed by the World Health Organisation as priority diseases in need of immediate attention for treatment research and development.
- Currently, the medication is administered under the strict guidelines of "compassionate use," a therapeutic option that permits the use of an illegal drug in cases where no other acceptable or suitable legal treatment is known to be available and where patients are unable to participate in clinical trials for a variety of reasons.

- **How function do monoclonal antibodies?**

- The purpose of monoclonal antibodies is to specifically target an illness.
- Their purpose is to bind themselves to the particular antigen that causes the sickness.
- Proteins are most likely to be antigens.
- For example, the majority of effective monoclonal antibodies produced during the pandemic were designed to attach to the SARS-CoV-2 virus's spike protein.
- The protein was unable to carry out its usual tasks, such as infecting more cells, due to the binding.
- One of the main parts of viruses that infect people and cause diseases is glycoproteins.
- The immunodominant receptor-binding glycoprotein of the Nipah virus is bound by the m102.4 monoclonal antibody, which may neutralise the virus.

- *Source → The Hindu*

3 – About SASTRA Ramanujan Prize:

Government Policies and Interventions

- **Context:**

- The University of California, Berkeley's Ruixiang Zhang will receive the 2023 SASTRA Ramanujan Prize.

- **About the award:**

- The Shanmugha Arts, Science, Technology & Research Academy (SASTRA) established the SASTRA Ramanujan Prize.
- The award was established in 2005.
- It is given annually to a young mathematician who is thought to have made exceptional contributions to one of Ramanujan's areas of expertise.
- The reward has a 32-year-old age restriction (the age at which Ramanujan passed away), and the current payout is \$10,000.

- The International Conference in Number Theory will present the prize.
- His foundational work includes geometry, combinatorics, Euclidean harmonic analysis, and analytic number theory.
- He and Shaoming Guo expanded on his PhD thesis to prove an extension of Vinogradov's mean value theorem's central conjecture, which deals with sums of numbers raised to a given power.

- *Source* → *The Hindu*

4 – Details of Mahatma Gandhi's portrait on Indian banknotes:

GS I

Modern Indian History

- **Context:**

- The picture of Gandhi that appears on official Indian banknotes, however, is the one that is most commonly distributed.

- **Important information:**

- Given his status as the Father of the Nation, it would seem fitting that he should have been included on the national coinage following India's independence in 1947.
- However, it wasn't until 1996 that he was featured consistently on official Reserve Bank of India (RBI) banknotes in all denominations.

- **The history of the Gandhi image on Indian banknotes:**

- The photograph used to create Gandhi's portrait is a cut-out of Gandhi standing with British politician Lord Frederick William Pethick-Lawrence in 1946.
- The rupee notes are designed by the RBI's Department of Currency Management.
- The Union government and the central bank must give its approval for the designs.

- **When did Gandhi initially show up on Indian notes?**

- Gandhi appeared on Indian banknotes for the first time in 1969, when a special series was released to mark the centenary of his birth.
- It had Gandhi and the Sevagram Ashram in the background, and it bore the signature of RBI governor LK Jha.
- Then, a series of Rs 500 banknotes portraying Gandhi was introduced in October 1987.



- **The currency of an independent India:**

- Following India's declaration of independence on August 15, 1947, the RBI issued notes picturing King George VI from the colonial era for a few months.
- In 1949, the Indian government unveiled a new design for the one rupee note, replacing King George with a representation of Ashoka Pillar in Sarnath, the Lion Capital.
- Symbols of scientific and technological progress as well as Indian art forms were highlighted in the 1980s; these included the Konark Wheel (Rs. 20), farm mechanisation (Rs. 5), and the Aryabhatta satellite (Rs. 2).

- **When did Gandhi's picture start appearing on banknotes permanently?**

- It was supposedly thought that compared to a human face, inanimate objects would be easier to counterfeit.
- Gandhi was chosen because to his popularity across the country, and the RBI introduced the new "Mahatma Gandhi Series" in 1996 to replace the Ashoka Pillar bank notes.
- Additionally, a number of security elements were added, such as intaglio features for the blind, a latent image, and a windowed security thread.
- The RBI unveiled the "Mahatma Gandhi New Series" of banknotes in 2016.

- Along with extra security elements, the back of the notes now have the Swachh Bharat Abhiyan logo in addition to the Gandhi photo.
- **The request to add more people to banknotes:**
- In addition to Gandhi, there have been additional ideas in recent years for people who should appear on bank notes, including those of:
 - Money notes with the goddess Lakshmi and Lord Ganesha.
- *Source → The Hindu*

5 – About Agamas:

GS I

Indian Culture

- **Context:**
- The Supreme Court upheld the status quo regarding the selection of archakas, or priests, in Tamil Nadu's Agamic temples.
- **Important information:**
- An association of archakas known as Srirangam Koil Miras Kainkaryaparagal Matrum Athanai Sarntha Koilgalin Miraskain-karyaparargalin Nalasangam had objected to changes made by the Tamil Nadu government that were thought to be an attempt to alter the custom of choosing archakas in Agama temples through hereditary means.
- The petitioners sought the annulment of the state government's directives and letters that opened the door for anyone with Agama Sastra training, regardless of gender or caste, to become a priest.
- The petitioners claimed that the state government was violating constitutionally protected religion rights by trying to install non-believers as archakas.
- They argued that years of intense instruction under knowledgeable Gurus were necessary to gain knowledge of the Agamas, which are important religious practises, rather than earning a diploma from the government's one-year programme.
- Tamil Nadu's temple priest appointment controversy is a result of several legislative and administrative measures.
- The Tamil Nadu Hindu Religious & Charitable Endowment (HR & CE) Act was changed in 1971 by the DMK government led by Chief Minister M Karunanidhi to do away with the requirement that priests be appointed by family and to let priests to be members of any caste.

- The government announced in 2006 that anyone who met the requirements might become a priest.
- In 2015, the Supreme Court overturned this.
- It ensured that constitutional rights were not infringed upon while emphasising the commitment to Agama Sastras.
- A woman priest from Usilampatti, Madurai, who came up against resistance from male priests over her inherited right to perform puja at the Arulmigu Durgai Amman temple, won her case in 2009 in the Madras High Court.
- The court rejected the unjustified application of Agama Sastras and Manusmriti standards in this context, underscored the irony of objecting to puja performed by a woman at a temple dedicated to a female deity, and highlighted historical precedents of women performing rites.
- In order to fulfil the constitutional mandates under Articles 15 ("prohibition of discrimination on grounds of religion, race, caste, sex, or place of birth") and 51A(e) (fundamental duty "to...renounce practises derogatory to the dignity of women"), it was emphasised that gender bias had to be removed from temples.
- The Supreme Court affirmed the appointment of non-believers to the temple trust board in the 2004 Guruvayoor Devaswom case.
- The Supreme Court held in the N Adithayan (2002) case that no tradition that predated the Constitution may prevent non-Brahmins from participating in puja in temples if they were otherwise prepared and skilled.
- These rulings demonstrated the judiciary's dedication to guaranteeing equality and non-discrimination in the selection of priests, stating that eligibility for conducting temple rites and the selection of pujaris (archakas) should not be determined by caste or familial lineage.

- **Regarding Agamas**

- The Agamas are a compilation of several Hindu schools' Tantric writings and teachings.
- Tradition is what the phrase literally implies.
- The Agama literature include descriptions of four types of yoga, mantras, deity worship, cosmology, epistemology, philosophical ideas, commandments on meditation and practises, and methods to achieve sixfold wants.
- Tamil and Sanskrit comprise these canonical texts.
- Shaiva, Vaishnava, and Shakta are the three primary branches of Agama literature.
- Agamas's history and place of origin are uncertain.
- There are non-Vedic and Vedic ones.

- **Source** → *The Hindu*