

MISSION VIJAYA 2.0 PREPARATORY EXAM- 6

Held on 4 AUGUST 2024

KAS- 2024

ANSWER KEY AND SYNOPSIS

NAMMAKpsc

Note: We have taken all effort to ensure correct answer keys. In case of any mistakes, please refer to the detailed synopsis. Please mail us at nammakpsc@gmail.com or call us for any assistance. Thank you

1. Ans : C

- The Sun constantly sheds solar material into space – both in a steady flow known as the “solar wind,” and in shorter, more energetic bursts from solar eruptions. When this solar material strikes Earth’s magnetic environment (its “magnetosphere”), it sometimes creates so-called geomagnetic storms.
- The impacts of these magnetic storms can range from mild to extreme, but in a world increasingly dependent on technology, their effects are growing ever more disruptive.
- To counter them NASA developed a computer model called DAGGER (formally, Deep Learning Geomagnetic Perturbation) that can quickly and accurately predict geomagnetic disturbances worldwide, 30 minutes before they occur.
- The model uses AI to analyze spacecraft measurements of the solar wind (an unrelenting stream of material from the Sun) and predict where an impending solar storm will strike, anywhere on Earth.

2. Ans : B

- GPAI is a multi-stakeholder initiative with 29 member-countries, which aims to bridge the gap between theory and practice on AI by supporting cutting-edge research and applied activities on AI-related priorities. India is the lead chair of GPAI in 2024.
- To achieve the goal of becoming a \$5 trillion economy, NITI Aayog suggests setting up an AI-based cloud computing infrastructure known as AIRAWAT (AI Research, Analytics and knowledge Assimilation). This platform will assist in the R&D of new technologies which will in turn help in solving business and governance use cases.
- The New Delhi Leaders’ Declaration stated the G20 countries recognised that safe and trusted deployment of digital public infrastructure (DPI) can “enable service delivery and innovation”. They added that even while

accounting for the potential downfalls of AI, they will “pursue a pro-innovation” approach.

3. Ans : B

- The Square Kilometer Array project will be a group of radio telescopes operating out of South Africa and Australia (headquarters) in two radio frequency ranges, and the Square Kilometer Array Observatory (SKAO) is a new intergovernmental organization dedicated to radio astronomy, headquartered in the UK with ten countries - Australia, Canada, China, India, Italy, New Zealand, South Africa, Sweden, and the Netherlands participating
- Survey data from the SKA observatory will provide deep insights into the early days of evolution of our galaxy, and the telescope will also search for signs of life outside Earth. Findings can enrich knowledge regarding galaxy evolution, stars, black holes and more while opening up new research directions.

4. Ans : D

WEB3

- Web3 provides a version of the web where users have a financial stake and more control over the web communities they belong to. Web 1 also called the Static Web, enabled easy access to information. Web 2 built on advancements in web technologies, enabled interactive platforms e.g., Facebook etc. It is centralized in nature and relies heavily on intermediaries.
- Web3 enables peer-to-peer transactions and interactions without intermediaries. Includes cryptocurrencies, Non-Fungible Tokens, Decentralized Autonomous Organizations (DAOs), etc.
- Provides more security of data in comparison to Web 1 and Web 2. Enables people to control their own data. Blockchain based social networks.
- Operated by users collectively rather than a corporation.

5. Ans : A

- Huntington's disease is a rare, inherited disease that causes the progressive breakdown (degeneration) of nerve cells in the brain.
- A genetic change (mutation) of the HTT gene causes Huntington's disease. The HTT gene makes a protein called huntingtin. This protein helps your nerve cells (neurons) function. The normal HTT gene contains a stretch of DNA that specifies the number of times the amino acid glutamine is repeated in the



HTT This number varies from 11 to 31. In the mutant versions of the HTT gene, this stretch is expanded to encode 35 or more repeats.

- Huntington's disease usually causes movement, cognitive and psychiatric disorders with a wide spectrum of signs and symptoms.
- Huntington's disease symptoms can develop at any time, but they often first appear when people are in their 30s or 40s. If the condition develops before age 20, it's called juvenile Huntington's disease. When Huntington's develops early, symptoms are somewhat different and the disease may progress faster.

6. Ans : C

- Neutron stars are formed when a massive star runs out of fuel and collapses. The very central region of the star – the core – collapses, crushing together every proton and electron into a neutron.
- If the core of the collapsing star is between about 1 and 3 solar masses, these newly-created neutrons can stop the collapse, leaving behind a neutron star.
- A neutron star is the densest object astronomers can observe directly, crushing half a million times Earth's mass into a sphere about 12 miles across.
- Many neutron stars are likely undetectable because they simply do not emit enough radiation.
- They are found scattered throughout the galaxy in the same places where we find stars. And like stars, they can be found by themselves or in binary systems with a companion.
- Most neutron stars are observed as pulsars. Pulsars are rotating neutron stars observed to have pulses of radiation at very regular intervals that typically range from milliseconds to seconds. Pulsars have very strong magnetic fields which funnel jets of particles out along the two magnetic poles.

7. Ans : A

KEY FEATURES OF WI-FI 7

Wi-Fi 7, also known as 802.11be, is the next-generation wireless networking standard. Here are its key features:

1. **Faster speeds:** Wi-Fi 7 offers maximum speeds of up to 30 Gbps, a significant increase from Wi-Fi 6's 9.6 Gbps.
2. **Increased capacity:** Wi-Fi 7 supports up to 256 devices in a single network, making it ideal for dense environments.
3. **Improved latency:** Wi-Fi 7 reduces latency to as low as 2 ms, enabling real-time applications like gaming and video conferencing.
4. **Enhanced security:** Wi-Fi 7 includes advanced security features like WPA3 encryption and Simultaneous Authentication of Equals (SAE).



5. Better performance in crowded environments: Wi-Fi 7 uses advanced technologies like Multi-User Multiple Input Multiple Output (MU-MIMO) and Orthogonal Frequency-Division Multiple Access (OFDMA) to improve performance in crowded environments.
6. Increased frequency bands: Wi-Fi 7 operates on six frequency bands, including 2.4 GHz, 5 GHz, and 6 GHz, offering more flexibility and reduced interference.
7. Improved Quality of Service (QoS): Wi-Fi 7 enables prioritization of critical applications like video streaming and online gaming.
8. Backward compatibility: Wi-Fi 7 is compatible with previous Wi-Fi generations, ensuring seamless connectivity.

Wi-Fi 7 is designed to support emerging applications like:

- Augmented and virtual reality
- 8K video streaming
- Online gaming
- Smart homes and cities
- Industrial automation

Its improved performance, capacity, and security make Wi-Fi 7 an essential technology for future wireless networking needs.

8. Ans : B

GOLDILOCKS ZONE

- It is also referred as the habitable zone.
- It is the area around a star where it is not too hot and not too cold for liquid water to exist on the surface of surrounding planets.

9. Ans : A

ANTIMICROBIAL RESISTANCE (AMR)

- AMR occurs when bacteria, viruses, fungi and parasites evolve over time and no longer respond to medicine.
- Antimicrobials are medicine used to prevent and treat infections caused by microorganisms. Antimicrobials includes Antibiotics (for bacteria), Antiviral (for viruses), Antifungal and Antiparasitics.
- AMR makes infections harder to treat and increasing the risk of disease, spread severe illness and health.
- Microorganisms that develop antimicrobial resistance are sometimes referred to as superbugs.
- Drivers of AMR Misuse and overuse of antimicrobials + Lack of awareness and knowledge + Poor access to quality, affordable medicine and diagnostic + Taking incorrect doses of antibiotics to cure diseases + Lack of access to clean

water, sanitation and hygiene + Using antibiotics in livestock farming + Triple planetary crises- Climate change, pollution and biodiversity loss

10. Ans : D

- Neutrinos are tiny subatomic particles, often called 'ghost particles' because they barely interact with anything else.
- The Sun, and all other stars, produce neutrinos copiously due to nuclear fusion and decay processes within their core.
- Neutrinos don't interact at all with the strong nuclear force that binds atomic nuclei together, but they do interact with the weak force that controls radioactive decay. Hence this is how neutrinos are produced.
- Their tendency not to interact very often with other particles makes detecting neutrinos very difficult, but it does not mean that they never interact.
- Neutrinos are tiny, neutral, elementary particles which interact with matter via the weak force. The weakness of this force gives neutrinos the property that matter is almost transparent to them.

11. Ans : C

- HIV, or Human Immunodeficiency Virus, is primarily transmitted through specific body fluids from an infected person to an uninfected person.
- The sharing of needles or syringes contaminated with the blood of an HIV-infected person can lead to transmission. This mode is particularly relevant for individuals who inject drugs.
- HIV is not transmitted through Saliva. It is not transmitted through casual contact such as hugging, kissing, shaking hands, or sharing utensils. Additionally, the virus cannot survive for long outside the human body, making environmental transmission unlikely.
- HIV can be transmitted from an infected mother to her baby during childbirth or pregnancy. With proper medical care, such as antiretroviral therapy during pregnancy and delivery, the risk of transmission can be significantly reduced.
- There is chances of transmission of virus during Blood Transfusions and Organ Transplants bringing the need for blood screening measures.

12. Ans : D

- Performance enhancers, also known as doping substances, are substances or methods used by athletes to improve their performance beyond what is naturally achievable. It's important to note that the use of many performance enhancers is prohibited in competitive sports.

- Beta-2 agonists, such as albuterol and salbutamol, are bronchodilators that help widen the airways. They are used to treat respiratory conditions but can also enhance endurance by improving oxygen intake.
- Stimulants, such as amphetamines and caffeine, can increase alertness, reduce fatigue, and improve concentration. They are used to enhance physical and mental performance.

13. Ans : A

- Eucalyptus snout beetle (*Gonipterus platensis*) is a leaf-feeding beetle that is a major defoliator of eucalypts, according to the Food and Agriculture Organization of the United Nations. The pest is indigenous to Australia but occurs in many countries throughout the world where eucalypts are grown.
- The beetle feeds on leaves, buds and shoots, resulting in stunted growth and defoliation and causing heavy losses. It can cause damage over vast areas as it had a great flight capability and gets transferred with transport of forest products
- The pest is mainly controlled with the help of micro wasps *Anaphes* spp — an expensive solution. This led a team of scientists to look for naturally occurring pathogenic fungi to tackle the problem. The researchers have managed to collect a naturally occurring pathogenic fungi and characterised it to turn it into a bio-pesticide for controlling beetle populations.

14. Ans : B

- Invasive alien species (IAS) are non-native organisms, including plants, animals, pathogens, and others, introduced outside their natural habitat, posing economic, environmental, and health risks.
- According to the Convention on Biological Diversity (CBD), IAS are characterised by their ability to "arrive, survive, and thrive," outcompeting native species for resources.
- In India, IAS are defined under the Wildlife Protection Act, 1972 (amended in 2022), as non-native species posing a threat to wildlife or habitats.
- Species such as African catfish, Nile tilapia, red-bellied piranha, and alligator gar dominate the list of invasive wildlife in India.
- Red-eared Slider, a North American turtle, popular as a pet, has been introduced into Indian water bodies, outcompeting native species for food and habitat.

15. Ans : C

- Transgenic animals are animals that have had a foreign gene deliberately inserted into their genome. Transgenesis can be used to alter many phenotypic properties of animals.
- Such animals are most commonly created by the microinjection of DNA into the pronuclei of a fertilised egg which is subsequently implanted into the oviduct of a pseudopregnant surrogate mother. This results in the recipient animal giving birth to genetically modified offspring.
- The development of transgenic animals has recently been transformed by the emergence of the new gene editing tool CRISPR which greatly reduced the number of steps involved in the creation of transgenic animals, making the whole process much faster and less costly.

16. Ans : B

- Remoras attach themselves to sharks using a specialized dorsal fin, benefiting from transportation and access to food scraps left behind by the shark's meals. The sharks are not harmed by the presence of remoras.
- Barnacles attach themselves to the skin of whales, hitching a ride as the whales move through the water. The barnacles benefit from transportation to new feeding grounds and access to nutrient-rich waters, while the whales are generally unaffected by their presence. So it's commensalism
- Bees collect nectar and pollen from flowers for food, while inadvertently transferring pollen between flowers, facilitating their reproduction. The bees benefit from the food source, while the flowers benefit from pollination, leading to seed production and the continuation of the plant species. So mutualism.

17. Ans : A

- World Health Organisation (WHO) launched Preparedness and Resilience For Emerging Threats (PRET) Initiative.
- About PRET Initiative - An innovative approach to improve disease pandemic preparedness. o Recognizes that the same systems, capacities, knowledge, and tools can be leveraged and applied for groups of pathogens based on their mode of transmission (respiratory, vector-borne, foodborne etc.). o Provides a platform for national, regional and global stakeholders to collaborate to strengthen preparedness.

18. Ans : C

Examples of aquatic food chain:

Algae → Zooplankton → Small Fish → Large Fish → Shark



Seagrass → Shrimp → Fish → Seal → Shark
Phytoplankton → Krill → Squid → Penguin → Leopard Seal
Marsh Grass → Insects → Small Fish → Heron → Alligator
Seaweed → Sea Urchin → Sea Otter → Orca
Mangrove Leaves → Detritus → Crabs → Egrets → Crocodile
Coral → Plankton → Clownfish → Moray Eel → Reef Shark
Kelp → Sea Slug → Sea Turtle → Tiger Shark
Diatoms → Copepods → Anchovies → Tuna → Killer Whale
Eelgrass → Amphipods → Small Fish → Salmon → Bear

19. Ans : B

- The National Mission for Clean Ganga (NMCG) unveiled the Global River Cities Alliance (GRCA) during the COP28 conference in Dubai, United Arab Emirates.
- Simultaneously, at the event, the NMCG entered into a Memorandum of Common Purpose (MoCP) with the Mississippi River Cities and Towns Initiative (MRCTI), which encompasses 124 municipalities situated along the banks of the Mississippi River in the United States. The NMCG, acting on behalf of the River Cities Alliance (RCA), was the signatory to the MoCP."
- The alliance includes a wide range of nations and cities situated along rivers, facilitating collaborations among prominent countries such as India, Egypt, Netherlands, Denmark, Ghana, Australia, Bhutan, Cambodia, Japan, and various others.
- The GRCA, as an international coalition, brings together cities and countries with a shared commitment to safeguarding the health, sustainability, and resilience of river ecosystems across the globe. It serves as a platform for collaboration, knowledge exchange, and collective action to address the complex challenges facing river systems and promote their long-term conservation and sustainable management.

20. Ans : D**Cell Wall**

- Cell wall is absent in animals.
- Plant cells, in addition to the plasma membrane, have another rigid outer covering called the cell wall. The cell wall lies outside the plasma membrane.
- The plant cell wall is mainly composed of cellulose. Cellulose is a complex substance and provides structural strength to plants.

**21. Ans : C**

- The IUCN Red List serves as a valuable tool for shaping future conservation strategies and funding allocation.
- Species classified as critically endangered are listed on the pink pages, while those that were previously endangered but have since recovered are featured on the green pages.
- The Kashmiri stag, also known as Hangul, is classified as "Critically Endangered" on the IUCN Red List
- The Namdapha flying squirrel (*Biswamoyopterus biswasi*) is classified as "Critically endangered on the IUCN Red List.
- Western Hoolock Gibbon (*Hoolock hoolock*) is classified as "Endangered" on the IUCN Red List. The Eastern Hoolock Gibbon (*Hoolock leuconedys*) is also classified as "Endangered."
- Attenborough's echidna (*Zaglossus attenboroughi*) is classified as "Critically Endangered" on the IUCN Red List

22. Ans : A

- Bura Chapori Wildlife Sanctuary:
 - After a four-decade absence, rhinoceroses have made a comeback to this sanctuary.
 - Situated on the south bank of the Brahmaputra River in Sonitpur district, Assam.
 - Forms part of the larger Laokhowa Wildlife Sanctuary, a centrally located protected area in Assam.
 - Designated as a buffer zone for the Kaziranga Tiger Reserve.
 - Recognized as an Important Bird Area (IBA) by Birdlife International.
- Palamau Tiger Reserve (PTR):
 - Four soft-release centers are currently being constructed for Cheetals within PTR.
 - Situated in the western region of the Chotanagpur plateau, forming part of the Betla National Park and Palamau Wildlife Sanctuary in Chhattisgarh
 - Recognized as an Important Bird Area (IBA) by Birdlife International.
 - Rivers flowing through the reserve include the North Koyal, Auranga, and Burha.
- Dampa Tiger Reserve:
 - The discovery of a new species of toad (Frog), *Bufoides bhupathyi*, was reported within the Dampa Tiger Reserve, named in honor of esteemed Indian herpetologist Subramanian Bhupathy.
 - Key geographical details and features include:



- Positioned on the western flank (Lushai Hills) of Mizoram, with boundaries extending to the Chittagong hill tracts (Sazek hill range) of Bangladesh.
- Recognized as an Important Bird Area (IBA) by Birdlife International.

23. Ans : D

Ramsar Sites of Karnataka

1. Aghanashini Estuary
2. Ankasamudra Bird Reserve
3. Magadi Kere Conservation Reserve
4. Ranganathitu Bird sanctuary

24. Ans : C

- The Basel Convention, established on March 22, 1989, in Basel, Switzerland, emerged in response to global concerns regarding the illicit dumping of hazardous wastes, notably in Africa and other developing regions during the 1980s. Its primary goal is safeguarding human health and the environment from the adverse impacts of hazardous wastes.
- Key objectives of the Basel Convention include:
 - Curtailing the generation of hazardous wastes and promoting their environmentally responsible management irrespective of their disposal location.
 - Regulating transboundary movements of hazardous wastes, except in cases aligned with environmentally sound management principles.
 - Establishing a regulatory framework governing permissible transboundary waste movements.
 - The convention defines wastes as substances or objects slated for disposal according to national regulations. Annex I delineates hazardous wastes subject to stringent control measures, while Annex II identifies "other wastes" necessitating special consideration, predominantly household waste.
 - Examples of wastes regulated under the Basel Convention encompass a diverse array, such as biomedical and healthcare wastes, used oils, lead-acid batteries, Persistent Organic Pollutant (POP) wastes, Polychlorinated Biphenyls (PCBs), and numerous chemical wastes generated by various industries and consumers

25. Ans : C

- Habitat is the physical environment in which an organism lives (address of an organism). Many habitats together make up the environment.
- A single habitat may be common for multiple organisms which have similar requirements. For example, a single aquatic habitat may support a fish, frog, crab, phytoplankton, and many others. The various species sharing a habitat thus have the same 'address'. E.g., forest, lake, etc.
- Habitat vs Environment
 - A habitat always has life in it, whereas the environment does not necessarily have life in it. All habitats are environments, but all environments are not habitats.
 - A habitat is always a preference of one species. An environment could be a preference of many species that could eventually become many habitats.
 - Usually, the environment governs the properties of a habitat, but not vice versa.

26. Ans : B

- In January 2024, five new sites were added to the list of Ramsar Sites in India.
 - Ankasamudra Bird Conservation Reserve – Karnataka
 - Aghanashini Estuary – Karnataka
 - Magadi Kere Conservation Reserve – Karnataka
 - Karaivetti Bird Sanctuary – Tamil Nadu
 - Longwood Shola Reserve Forest – Tamil Nadu
- In July 2022, five new sites from India were added to the List of Ramsar Sites.
 - Karikili Bird Sanctuary – Tamil Nadu
 - Pallikaranai Marsh Reserve Forest – Tamil Nadu
 - Pichavaram Mangrove – Tamil Nadu
 - Sakhya Sagar – Madhya Pradesh
 - Pala Wetlands – Mizoram

27. Ans : D**ECOCLINE**

- Ecocline is a zone of gradual but continuous change from one ecosystem to another when there is no sharp boundary between the two in terms of species composition. It occurs across the environmental gradient (gradual change in abiotic factors such as altitude, temperature (thermocline), salinity (halocline), depth, etc.).

- It refers to the gradual or continuous transformation of an ecosystem or community. A wetland is an example of an ecocline because it is a gradual transition from a terrestrial to an aquatic ecosystem.

28. Ans : B

- With only about 2% of the world's total land area, India is known to be home to over 7.5% of the world's animal species.
- The rare Hangul deer or Kashmir stag is found only in Kashmir. It is endangered mainly due to human encroachment and livestock grazing, in their only habitat in Kashmir. The IUCN's Red List has classified it as Critically Endangered.
- The antelope is one of numerous old-world grazing and browsing hoofed mammals belonging to the Bovidae family. There are six species of antelopes found in India. Chinkara, Blackbuck (*Antelope cervicapra*) and the four-horned antelope (*Tetracerus quadricornis*) are among them. Blackbuck is listed as 'Least Concern' on the IUCN Red List of Threatened Species.
- Chausingha is an four-horned antelope, which is the only animal in the world of that kind. Chausingha is listed as Vulnerable on the IUCN Red List of Threatened Species.

29. Ans : C

Lake Retba, Senegal

- Context: On verge of disappearance
- Also known as Lac Rose or Pink Lake
- Pink in colour due to algae *Dunaliella salina*.
- Devoid of life, except few algae and bacteria

**30. Ans : D**

The buffer capacity of the earth refers to its ability to resist changes in its chemical composition, particularly in the context of maintaining a stable pH level.

The earth's buffer capacity is primarily due to the presence of:

1. Carbonates (e.g., limestone, dolomite)
2. Silicates (e.g., clay minerals, feldspar)
3. Phosphates (e.g., apatite)
4. Oxides (e.g., iron, aluminum)

These minerals react with excess hydrogen ions (H⁺) or hydroxide ions (OH⁻) to maintain a stable pH range, typically between 6.5 and 8.5.

The earth's buffer capacity is crucial for:

1. Maintaining soil fertility and agricultural productivity
2. Regulating water quality and aquatic life
3. Mitigating the effects of acid rain and climate change
4. Supporting ecosystem balance and biodiversity

31. Ans : B

32. Ans : C

33. Ans : C

34. Ans : D

35. Ans : C

36. Ans : C

37. Ans : D

38. Ans : C

39. Ans : C

40. Ans : C

41. Ans : D

42. Ans : C

43. Ans : C

44. Ans : D

45. Ans : C

46. Ans : C

47. Ans : B



48. Ans : C

49. Ans : C

50. Ans : C

51. Ans : C

52. Ans : A

53. Ans : A

54. Ans : A

55. Ans : C

56. Ans : C

57. Ans : D

58. Ans : B

59. Ans : B

60. Ans : B

61. Ans : C

- Karnataka Cabinet approved setting up “Unity Mall” to promote traditional handicraft, handloom, and Geographical Indications (GI) products at Mysuru
- Karnataka Cabinet approved the establishment of a Regional Driving Training Centre for women in Bidadi of Ramanagara district

62. Ans : A

- Karnataka High Court: First high court to hear arguments from a speech and hearing-impaired advocate through sign language. Advocate Sarah Sunny argued using a certified sign language interpreter

63. Ans : B

BWSSB gets Climate Smart Utilities Award 2023

- BY - International Water Association
- 2023 Second edition + Supported by African Water Association (AfWASA)
- Aims - Raise awareness of the steps being taken by water and sanitation utilities operating in challenging conditions to respond to climate change
- Recognise ambitious and innovative utilities in low and middle-income countries that are leading the way towards a low carbon water and sanitation sector, embracing the shift needed to adapt to and mitigate climate change

64. Ans : A

AI-ENABLED POLICING IN KARNATAKA

New Software:

- Police IT-V2: Manages all functions from FIR registration to case disposal + Utilizes Artificial Intelligence and Machine Learning for a holistic investigation.
- ITPA Saral Mobile App: Provides guidance on documents, procedures, laws, and shelter homes for human trafficking victims.
- Chatbot: 'Police Mitra' with ChatGPT to answer queries on cybercrime, traffic, and issues affecting women, children, and seniors.
- KSPA: Automates case analysis and identifies applicable laws using Artificial Intelligence and Machine Learning.
- Economic Offences Investigation Software: Uses Artificial Intelligence and Machine Learning to analyze bank statements for patterns, anomalies, and potential fraud

65. Ans : D

AI-BASED ADVANCED GROUNDWATER MONITORING SYSTEM

- BWSSB partners with IISc, CGWA, and KGWA for AI-based groundwater monitoring
- Monitors groundwater levels in Bangalore using advanced technology
- Addresses data deficiency and borewell failures
- IISc developing an AI and IoT system for continuous monitoring
- Enables targeted monitoring of specific areas
- BWSSB establishing a groundwater task force with IISc scientists and officials
- Task force to use AI-generated reports for monitoring and recommending improvements

66. Ans : B

Karsiri: Karnataka State Mango Development and Marketing Corporation Limited relaunches portal for direct farmer-to-consumer mango sales

67. Ans : C

Bhavani Thekkada Nanjunda won gold by topping the 10-km Nordic ski competition, 1.6-km sprint and 5-km sprint in Khelo India Winter Games 2023

68. Ans : A

Rani Chennamma

- Born: October 23, 1778, Kagati, Karnataka
- Married: Raja Mallasarja of Kittur at 15
- Rebellion: Fought against British East India Company in 1824

Kittur Rebellion

- Background: Succession dispute after Raja Shivalingarudra Sarja's death in 1816
- Conflict: British refused to recognize adopted heir Shivalingappa
- Battle: Rani Chennamma led Kittur army against British in October 1824
- Outcome: Initially victorious but captured by British in December 1824
- Imprisonment: Died in captivity on February 21, 1829, at Bailhongal Fort

Naanoo Chennamma Campaign

- Organized by: several social groups across the country, including Act Now for Harmony and Democracy (ANHAD) and the National Federation of Indian Women (NFIW)
- Purpose: Commemorate Rani Chennamma's legacy and fighting spirit
- Initiatives: Release of 'Kittur Declaration' advocating for women's rights and democracy

Inspiration: Encourage women to uphold dignity and justice in current times of constitutional challenges

69. Ans : C

KARAGA FESTIVAL

- Annual festival in Bengaluru
- Historical Roots: Dates back 300 years from the Mahabharata + Draupadi's role in creating Veera Kumaras to defeat Timirasura + Celebrated as Draupadi's annual return during Chaitra's full moon.
- Procession and Rituals: Begins at Shri Dharma Raya Swamy temple in Nagarathpete, Bengaluru + Involves a flower-decked pyramid carried by a Thilaga community priest.
- Symbol of Unity: Celebrates unity between communities, including a visit to Astana e-Hazrath Tawakkal Mastan Shah Saharwardi Dargah

70. Ans : B

KARNATAKA AVGC-XR POLICY

- Karnataka launches final AVGC-XR policy.
- AVGC-XR: Animation, Visual Effects, Gaming, Comics, and Extended Reality.

- Policy Duration: 2024 to 2029.
- Goals: Foster AVGC-XR sector growth + Leverage Karnataka's IT and BPM strengths + Establish Karnataka as a global AVGC-XR leader.
- Envisions: Create a robust talent pool + Generate 30,000 high-quality jobs by 2028 + Achieve 80% sector revenue from exports + Promote sustainability and inclusivity.

Strategic Pillars

1. Skill development for a future-ready workforce.
2. Creation of sustainable infrastructure.
3. Empowerment of startups and MSMEs.
4. Provision for global market access and business development.
5. Incentives, concessions, and financial support.

Focus on 'Mobile First' AVGC products.

71. Ans : A

- Karnataka Souharda Cooperative (Amendment) Bill-2024 - To introduce reservation matrix to members from Scheduled Castes, Scheduled Tribes, and Other Backward Classes
- Karnataka Cooperative Societies (Amendment) Bill, 2024 - seeks to provide equal voting rights to all members of the societies and seeks to abolish Karnataka Cooperative Election Authority. It seeks to create Election Department under Director of Cooperative department

72. Ans : C

SHUCHI SCHEME

- Karnataka health department relaunched the Shuchi scheme
- Target Group: School and college girls aged 10-18 years
- Purpose: Raise awareness about menstrual hygiene
- Launch: Originally launched in 2013-14
- Implementation: Free menstrual kits sent directly to schools and colleges
- Kit Details: Each kit includes 10 pads packets, with enough for a year
- Pilot: Maithri scheme piloted in Dakshina Kannada and Chamarajanagar districts last year

73. Ans : A

- The Nanna Guruthu scheme aims to securely store government documents of rural people belonging to Scheduled Castes and Scheduled Tribes in the Digilocker App.
- The scheme is not being implemented in all Gram panchayats across Karnataka. It is stated to be implemented in 1,000 Gram panchayats of the Kalyana Karnataka region specifically..

74. Ans : B

- Karnataka's first Waste-to-Energy (WTE) plant coming is expected to start trial runs by mid-July
- Location: Bidadi, Karnataka
- Area: 15 acres
- Capacity: 11.5 MW
- Cost: Rs 260 crore
- Stakeholders: Joint venture by Bruhat Bengaluru Mahanagara Palike (BBMP) and Karnataka Power Corporation Limited (KPCL)
- Initial Completion Date: October 2023
- Waste Processing: Capable of processing 600 metric tonnes of dry waste daily
- Electricity Generation: Heat from burning dry waste at high temperatures used to generate electricity
- Cost: Production cost approximately Rs 8 per unit
- BENEFITS - Waste Disposal: Scientific disposal of dry waste + Sustainability: Addresses the city's dry waste problem, offering a sustainable waste management solution

75. Ans : D**KARNATAKA STATE NATURAL DISASTER MONITORING CENTRE (KSNDMC)**

- Established in 1988, evolved into KSNDMC in 2007
- Monitors and assesses impacts of natural hazards like droughts, floods, and hailstorms
- Strengthens IT for disaster management
- Conducts hazard mapping and vulnerability studies
- Develops human resources through training programs
- Implements a Natural Disaster Early Warning System
- Uses ICT tools and a network of GPRS-enabled and solar-powered stations for real-time data analysis and alert generation
- Supports agriculture with weather data for Crop Insurance Schemes and accurate information for farmers
- Provides location-specific advisories via apps like "SIDILU" and operates the "Varuna Mitra" help desk for farmer
- KSNDMC records for Karnataka 2024 has indicated Karnataka has experienced deficient rainfall in the initial quarter

76. Ans: B

DR. PUNEETH RAJKUMAR HEART HEALTH SCHEME (HRUDAYA JYOTI)

Hrudaya Jyoti scheme for cardiac healthcare launched in State

Highlights:

- Aim: Save lives during heart attacks, ensure treatment within the golden hour.
- Program announced in Karnataka budget; focus on rising heart attacks among young adults (35% in their 40s).

Proposals:

Install emergency devices in public places.

- Establish hub-and-spoke centres across Karnataka.
- Spoke centres at 85 district and taluk hospitals; 16 super specialty hospitals as hubs.
- Implement AI for quick severity detection; deploy 50 defibrillators in public areas.

Implementation:

- Chest pain patients visit spoke centres for ECG and Tenecteplase injections.
- AI tool detects critical conditions within 4-5 minutes.
- Free Tenecteplase for critical patients; referral to hubs for advanced treatments like angioplasty.
- Free treatment for BPL cardholders; APL cardholders under Arogya Karnataka Ayushman Bharat Health Card.

77. Ans : A

- Bengaluru Climate Action Cell, led by the Bruhat Bengaluru Mahanagara Palike (BBMP), has begun creating an ecosystem and fostering a community to execute the strategies outlined in the Bengaluru Climate Action Plan (BCAP)
- BENGALURU CLIMATE ACTION PLAN
- Aim: Achieve carbon neutrality by 2050.
- Implementing Body: Bruhat Bengaluru Mahanagara Palike (BBMP) is responsible for 143 out of 269 actions.
- Recognition and Awards
- BluGreenUru Awards: To acknowledge and celebrate efforts aligning with BCAP's climate action goals

78. Ans : D

- Karnataka launched Leopard Safari at Bannerghatta
- First-of-its-kind initiative in South India.
- Bannerghatta is home to 26 elephants, with two to three births each year.

79. Ans : B

Mysuru filmmaker Chidananda S. Naik won the top prize at the 77th Cannes Film Festival's La Cinef competition for his 15-minute short film "Sunflowers Were the First Ones to Know," inspired by a Kannada folktale

80. Ans : D

- The Karnataka State Rural Livelihood Mission (KSRLM) was officially launched on December 2, 2011, to implement the Deendayal Antyodaya Yojana - National Rural Livelihoods Mission (DAY-NRLM), a flagship program of the Ministry of Rural Development, in Karnataka.
- The Karnataka State Rural Livelihood Promotion Society (KSRLPS) has been established and registered under the Karnataka Societies Registration Act, 1960.
- KSRLPS is an autonomous agency responsible for implementing NRLM at the state level.
- Currently, the organization operates under the Skill Development, Entrepreneurship, and Livelihoods Department of the Government of Karnataka.
- In 2020, the state government integrated the urban and rural livelihood initiatives under this mission. To date, Sanjeevini – KSRLPS has extended its coverage to all 233 blocks across the 31 districts in Karnataka.
- Over the past decade, Sanjeevini – KSRLPS has achieved significant milestones by creating community-based institutions such as Self Help Groups, Grama Panchayat and Taluka level federations, various producer groups, and entrepreneur clusters aimed at supporting the rural poor and vulnerable women.

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Est: 2014

81. Ans : A

- The State has increased the GSDP from Rs.22.70 lakh crore in 2022-23 to Rs. 25.01 lakh crore in 2023-24 with a growth rate of 10.2% at current prices and Rs. 13.35 lakh crore to Rs. 14.23 lakh crore with a growth rate of 6.6% at constant prices during the same period.
- GDP grew by 6.6% during 2023-24 as compared to 7.3% of India at constant prices.
- During 2023-24, the share of Karnataka GSDP in All India GDP is at 8.4% as compared to 8.3 % in 2022-23.
- Karnataka's Percapita Income of Rs.3,32,926 is higher by 79% to All India Percapita Income of Rs.1,85,854 during 2023-24



- The percapita income has increased from Rs.3,04,474 in 2022-23 to Rs.3,32,926 in 2023-24 with a growth rate of 9.3% at current prices and Rs. 1,75,895 to Rs.1,86,038 with a growth rate of 5.8% at constant prices during the same period.

82. Ans : A

- The total expenditure has increased from Rs.289653.02 crores in 2022-23(RE) to 327746.62 crore in 2023-24(BE), with an increase of about 13.15%.
- Developmental expenditure has increased from Rs.192601.36 crores in 2022-23(RE) to Rs.214810.12 crores in 2023-24(BE), with an increase of 11.53%.
- The per-capita developmental expenditure has increased from Rs.26787 in 2022-23 (RE) to Rs.29306 in 2023-24 (BE), with an increase of about 9.48%
- Capital expenditure has increased from Rs.71296.95 crore in 2022-23(RE) to Rs.76814.12 crore in 2023-24(BE), with an increase of 7.74%.

83. Ans : D

AMRUT 2.0'S MAIN FOCUS AREAS ARE:

- Water security: Providing universal coverage of water supply to all households in urban areas.
- Sewerage and septage management: Improving sewerage networks, treatment facilities, and septage management.
- Rejuvenation of water bodies: Restoring and conserving urban water bodies.
- Urban aquifer management: Sustainable management of groundwater resources in urban areas.
- Non-revenue water reduction: Minimizing water losses in the distribution system.
- Recycling and reuse of treated wastewater: Promoting circular economy of water.
- The scheme aims to make cities 'water secure' and provide functional water tap connections to all households.
- Developing smart city infrastructure in all urban areas - This is NOT a primary objective of AMRUT 2.0, making it the correct answer to our question. While AMRUT 2.0 does focus on urban development, it is not specifically aimed at developing "smart city" infrastructure. The Smart Cities Mission is a separate initiative of the Indian government.

84. Ans : C

- Goniozus parasites are small parasitoid wasps belonging to the family Bethyridae. They are known for their effectiveness in controlling various lepidopteran (moth and butterfly) pests, particularly in fruit crops.
- Parasitoid nature: Unlike true parasites, parasitoids ultimately kill their hosts. Goniozus females lay eggs on or near host larvae, and the developing wasp larvae feed on the host, eventually killing it.
- Target pests: They primarily attack the larvae of moths, including several species that are significant pests in agriculture.
- Crop protection: Goniozus species are particularly valuable in protecting fruit crops. For example, Goniozus nephantidis is used to control the coconut black-headed caterpillar (*Opisina arenosella*).
- Biological control: Due to their effectiveness and specificity, Goniozus parasites are often used in integrated pest management (IPM) programs as a form of biological control.
- Host paralysis: Female Goniozus wasps can sting and paralyze their host larvae before laying eggs, ensuring a food source for their offspring.

85. Ans : B

Goat milk project is being established for the first time in the state at Madalapur (Kudige subcentre) in Kodagu district.

86. Ans : B

- Sandalwood is a slow-growing tree species. It typically takes 20-30 years to reach maturity and develop its prized heartwood. This long growth period is one of the reasons sandal wood is so valuable and has been subject to strict regulations in the past.
- As per the 2022 Sandalwood Promotion Policy approved by the Government of Karnataka allows for the extraction of sandal trees as per need and permits their trading in the open market.
- This represents a significant change in policy, likely aimed at encouraging sandalwood cultivation and potentially boosting the economy around this valuable resource.

87. Ans : B

- The "Green Karnataka" program actually focuses on growing trees with the active involvement of school & college students and environmental organizations, not primarily through government agencies.



- The State Sector Tree Park Scheme indeed aims to provide natural environments to urban dwellers and play areas for children, offering recreation, aesthetics, good air, and community wellbeing.
- The State Sector Devarakadu Scheme is focused on conserving the existing valuable eco-system through maintaining existing sacred groves and temple forests, not on creating new ones.
- The RKVY-Agroforestry program does ensure the production and supply of quality planting material to farmers and includes community land development works.

88. Ans : A

- The CAMPA Act allows the use of funds for both relocating villages from protected areas AND for compensating affected communities. The Act provides for the use of these funds for various purposes related to forest and wildlife conservation, including the welfare of people living in and around forest areas.
- Normally, Compensatory afforestation is to be raised on suitable non-forest land, equivalent to the area proposed for diversion, at the cost to be paid by User Agency.
- As far as possible, the non-forest land for Compensatory afforestation is to be identified contiguous to or in the proximity of a Reserve/Protected Forest to enable the Forest Department to effectively manage the newly planted area.
- Where non-forest land is available but lesser in extent to the forest area being diverted, Compensatory afforestation could be carried out over degraded forest twice in extent of the area being diverted or the difference between the forest land being diverted and the available non-forest land, as the case may be.

89. Ans : B

- Karnataka State's exports in Agriculture Commodity amounted to \$2376.87 million in 2020-21 and \$2789.36 million in 2022-23 with a significant increase of 17 %.
- Exports is about 40% of the GSDP with electronic, computer software and biotechnology contributing a major portion of the exports.
- Karnataka accounts for more than one third of electronics and computers software exports from the country

90. Ans : D

- As per the India's skills report 2023, Karnataka stands 6th position in achieving the highest employability in the country and leading states are UP, Maharashtra.



- The report was published by Wheebox in association with various agencies including the All India Council for Technical Education (AICTE), Confederation of Indian Industry, and Association of Indian Universities.
- The findings in the report are based on the evaluation of 3.88 Lakhs candidates who took the Wheebox National Employability Test (WNET) across academic institutions in India.
- The report's theme is indeed "Impact of AI on the Future of Work, Skilling & Mobility." The report highlights India's skill landscape and specifically focuses on the impact of Artificial Intelligence on the workforce.

91. Ans : D

- As per livestock census 2019, Karnataka has 3.03 crores of livestock and 5.95 crores of poultry population and its share in all India was 5.41% and 6.98% respectively.

92. Ans : D

- Bhagyalakshmi scheme: The scheme deposits Rs. 3,000 per annum in the name of two girl children of BPL families in a Sukanya Samruddhi Account, up to 15 years, totaling Rs. 45,000.
- Santhwana scheme: The scheme provides legal assistance and counselling services for issues like dowry, sexual harassment, family violence, and rape, with an expenditure of Rs. 350 lakh.
- Vishesh Palana Yojane: The scheme provides financial assistance of Rs. 1,000 per month to HIV infected or affected children.

93. Ans : B

- The contributions of Agriculture and Industry sectors to the overall GSDP saw a marginal decrease from 13.66% to 13.04% and 20.92% to 20.24% in 2023-24 against 2022-23 respectively.
- The services sector, largest component of GSDP saw a marginal increase from 65.41% in 2022-23 to 66.72% in 2023-24.

94. Ans : A

Labour Force Participation Rate (LFPR): In Karnataka as per Gol PLFS-2022-23 LFPR for persons aged 15-59 years according to UPSS status approach is 62.9% and it was 60.1% in PLFS-2021-22 whereas all India average is 61.6% and comparative details is given in Table



State	Rural			Urban			Urban & Rural		
	Male	Female	Person	Male	Female	Person	Male	Female	Person
Andhra Pradesh	85.1	58.5	71.6	80.3	36.1	57.5	83.6	51.5	67.3
Karnataka	83.4	48.6	66.2	79.1	34.2	57.3	81.8	43.2	62.9
Kerala	82.5	45.8	62.8	78.2	39.3	57.4	80.5	42.8	60.3
Maharashtra	82.6	55.6	69.3	82.3	30.9	57.5	82.4	44.9	64.2
Tamil Nadu	80.7	52.4	66.3	81.8	32.4	57.1	81.2	43.9	62.3
Telangana	83.4	62.4	73.1	79.2	30.8	55.6	81.8	50.4	66.5
All India	84.2	44.3	64.2	80.8	28.3	55.1	83.2	39.8	61.6

Source: Annual Report, PLFS 2022-23 Table-6, Page no.A-20, NSSO, MOSPI, GOI.

95. Ans : B

KARNATAKA DATA CENTRE POLICY 2022-27

- The Government has brought out a dedicated Data Center Policy-2022-27 with a vision to become a 'Destination of Choice' for futuristic data centres and an integral part of the global data centre ecosystem, also to create a robust digital infrastructure in Karnataka in line with overarching mission to lead the world in the 'Digital Industrial Revolution' and use of big data, high computing capacity, etc.
- The policy has adopted a three-fold strategy to achieve a low carbon footprint renewable energy source-based powering of data centres: a) promote emerging tech clusters, b) ease of doing business for establishment of data centres and c) provide an enabling environment for data management, security, transaction, and storage services to the emerging technology industries. The Policy offers support through various incentives and offerings to Data Centre industry located within the State. The policy targets to develop more than 200 MW capacity Data Centre Industry in Karnataka and attract approximately INR 10,000 Crores investments during the policy period.

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Est: 2014

96. Ans : A

97. Ans : D

98. Ans : A

99. Ans : C

100. Ans : B



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