

21



LAST LAP IS HERE!!

RAPID REVISION SERIES (RRS)

**500 HIGH PROBABLE
TOPICS FOR UPSC
PRELIMS 2020**

TOPIC 321-340



YouTube Initiative



IASbaba's

Session 21

**Rapid Revision Series
of
500 HIGH PROBABLE TOPICS
for
PRELIMS 2020**



TOPICS TO REVISE

321. Snow Leopard
322. Bar-headed Geese
323. Black Necked Cranes
324. Whale Shark
325. Dugong
326. Red Kashmiri Stag
327. Sangai/Manipur Brow-antlered Deer
328. Cyclones of 2019 and 2020
329. Next Generation Sequencing (NGS) facility
330. Real time reverse transcription–polymerase chain reaction (real time RT–PCR)
331. First Indigenous Fuel Cell System was launched
332. Reverse Osmosis (RO)
333. Global Antimicrobial Resistance Research and Development Hub
334. 'UMMID' initiative and NIDAN kendras
335. TRUENAT and about TB
336. 'MERA India' initiative and about Malaria
337. Gandhi Citizenship Education Prize and Gandhi Solar Park
338. Five Eyes Countries and Emerging 7
339. 5G and D10 - 5G Club
340. Graded Response Action Plan (GRAP) 2019



Topic 321: Snow Leopard

Status:

- IUCN Vulnerable
- Listed in Schedule I under Wildlife (Protection) Act 1972
- Appendix I of CITES
- Appendix I CMS

Found in:

- Mountain ranges of Central and South Asia
- Inhabits alpine and subalpine zones at elevations from 3,000 to 4,500 m) - Hemis National Park
- Found in Kashmir, Ladakh, Himachal Pradesh, Uttarakhand, Sikkim and Arunachal Pradesh

Other important areas:

1. Global Snow Leopard Forum
2. SECURE Himalaya
3. Global Snow Leopard and Eco-system Protection Program (GSLEP)





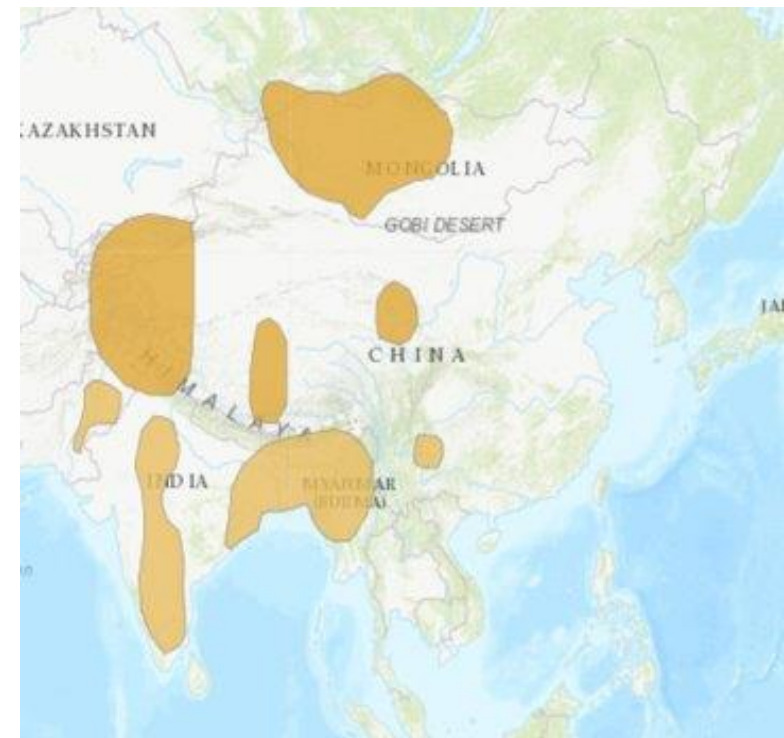
Topic 322: Bar-headed Geese

Basic info:

- IUCN: Least Concern
- Habitat: Wetlands (inland), Artificial/Aquatic & Marine, Artificial/Terrestrial, Rocky areas

Key points:

- They are one of the birds which can fly even at very high altitude. They come to India and return to their homes by crossing the Himalayan ranges.
- Their migration has been a fascination for birders as they cross the Himalayas, on one of the most high-altitude migrations in the world.
- Their ability to sustain the high oxygen demands of flight in air that is exceedingly oxygen-thin is exceptional.





Topic 323: Black Necked Cranes

Basic info:

1. IUCN: Vulnerable
2. Schedule I of Wildlife Protection Act, 1972
3. Habitat: Wetlands (inland), Artificial/Terrestrial
4. Black-necked cranes also known as 'Trung-Trung Karmo' migrate every winter from Tibet and China's Xinjiang province to Arunachal Pradesh in India.

Key points:

- Sangti Valley in West Kameng district and Zemithang of Arunachal Pradesh are the only wintering sites of the bird in India. The crane also breeds in Ladakh and Bhutan.
- The bird is revered by the 1 lakh-strong community of Monpas (major Buddhist ethnic group of Arunachal Pradesh) as an embodiment of the sixth Dalai Lama (Tsangyang Gyatso).





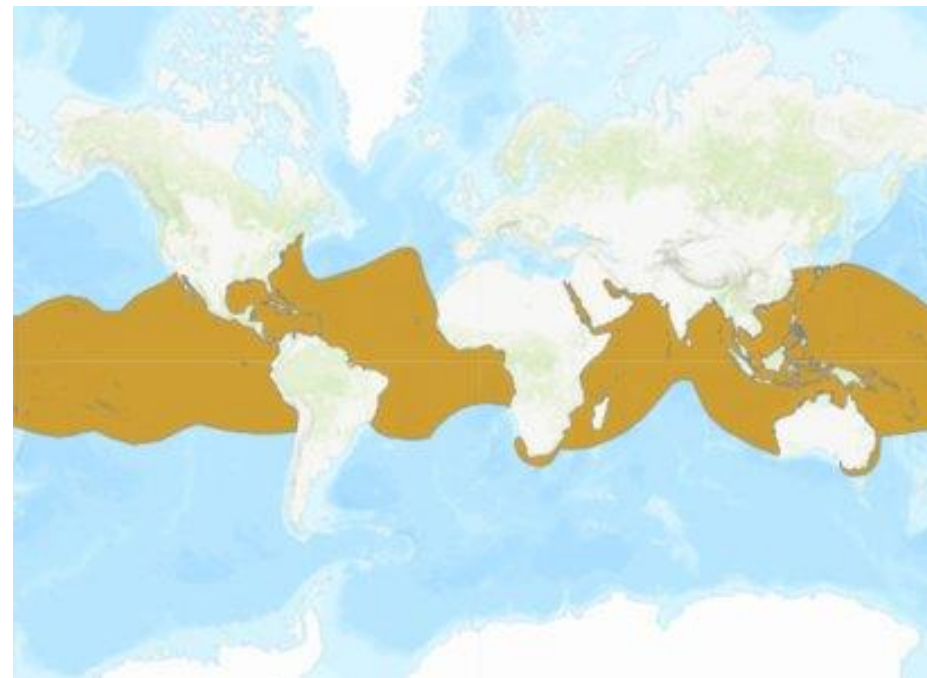
Topic 324: Whale Shark

Basic info:

1. IUCN: Endangered
2. Schedule I of Wildlife Protection Act, 1972
3. Appendix II CITES

Key points:

- Whale sharks are the largest shark and they feed on plankton and travel large distances to find enough food to sustain their huge size, and to reproduce.





Topic 325: Dugong

Basic info:

1. IUCN: Vulnerable
2. Gulf of Mannar has the largest population of dugongs in India.
3. They are also found near the Andaman and Nicobar Islands.
4. The dugong is the only strictly herbivorous marine mammal.

Key points:

- It is now on verge of extinction, because it has been hunted for meat and oil. In India also, its meat is considered to be aphrodisiac.





Topic 326: Red Kashmiri Stag

Status:

- IUCN Critically Endangered
- Schedule-I of the Wildlife (Protection) Act, 1972

Found in:

- It is found in dense riverine forests in the high valleys and mountains of Kashmir Valley and northern Chamba district of Himachal Pradesh.
- Dachigam National Park

Important points:

- State animal of Jammu and Kashmir
- It is the only sub-species of red deer in India.





Topic 327: Sangai/Manipur Brow-antlered Deer



Status:

1. IUCN Endangered
2. Unique animal found only in Manipur in the whole world
3. Only deer which has adapted itself to the swampy habitat (Manipur's Loktak lake)
4. Keibul Lamjao NP

Topic 328: Cyclones of 2019

1. Cyclonic Storm 'PABUK' :: Andaman
2. Cyclone 'FANI' :: BoB
3. Cyclonic Storm 'VAYU' :: NE and Arabian Sea
4. Cyclonic Storm 'HIKAA' :: NE and Arabian Sea
5. Cyclonic Storm 'BULBUL' :: over Bay of Bengal

Cyclones of 2020

1. Amphan :: Sri Lanka, India, Bangladesh, Bhutan
2. Nisarga :: West India



Topic 329: Next Generation Sequencing (NGS)

Key points:

1. About NGS Facility --> @Centre for Cellular and Molecular Biology in Hyderabad
2. About NGS Machines --> 'high genome sequencing' and 'diagnostic sequencing of clinical samples'
3. NGS can sequence 18,000 samples in 8 minutes
4. NGS would help prenatal genetic screening and counselling; find drugs for rare genetic diseases
5. NGS --> are mentioned as DNA microarrays, real-time PCR and DNA chips and reagents
6. Modern sequencing technologies --> Illumina (Solexa) sequencing, Roche 454 sequencing, Ion torrent: Proton / PGM sequencing, solid sequencing



Topic 330: Real-Time Reverse Transcription Polymerase Chain Reaction (RT-PCR)

Key points:

1. Invented by Kary Mullis (Nobel Prize for Chemistry in 1993)
2. Copies of a segment of DNA are created using an enzyme called Polymerase
3. Since, coronavirus is made of RNA (ribonucleic acid) --> RNA is converted into DNA
4. A 'reverse transcriptase' enzyme converts the RNA into DNA
5. Difference between NGS and RT-PCR test
 - 1) RTPCR --> identifies virus by exploring only specific sections; NGS --> Reads bigger chunk of virus)
 - 2) NGS test can also trace the evolutionary history of the virus and track mutations more reliably
 - 3) RT-PCR --> needs primers and probes; NGS --> only needs custom reagents



Topic 331: Indigenous High Temperature Fuel Cell System

Key points:

1. 1st Indigenous High Temperature Fuel Cell System --> was developed by CSIR
2. Part of “New Millennium Indian Technology Leadership Initiative (NMITLI)”
3. Fuel cell system --> generates power in a green manner using methanol/bio-methane, with heat and water as bi-products
4. Fuel Cells developed are based on High Temperature Proton Exchange Membrane (HTPEM) Technology
5. Replaces Diesel Generating (DG) sets and reduces dependence on crude oil
6. About Hydrogen Fuel Cell Technology



Topic 332: Reverse Osmosis (RO)

Key Points:

1. NGT directions --> RO is permitted if condition of recovery of water to the extent of more than 60% is required
2. RO --> uses a partially permeable membrane to remove ions, unwanted molecules and larger particles
3. Difference between normal osmosis process and reverse osmosis
4. RO --> Solute is retained on the pressurized side of the membrane; pure solvent is allowed to pass to the other side
5. How RO differs from filtration
6. Applications



Topic 333: Global Antimicrobial Resistance Research and Development Hub

Key points:

1. India joined AMR-R&D Hub as a new member in Sept 2019
2. As of now 16 countries, European Commission, two philanthropic foundations and four international organizations (as observers)
3. It was launched in May 2018 --> 71st session of the World Health Assembly
4. Secretariat, established in Berlin
5. Funding - grants from the German Federal Ministry of Education and Research (BMBF) and the Federal Ministry of Health (BMG).



Topic 334: 'UMMID' initiative and NIDAN kendras

Key Points:

1. Government launched 'UMMID' initiative and NIDAN kendras
2. UMMID (Unique Methods of Management and treatment of Inherited Disorders)
3. NIDAN (National Inherited Diseases Administration)
4. Aim --> to tackle inherited genetic diseases of new born babies
5. UMMID and NIDAN --> supported by Department of Biotechnology (DBT), M/o Science and Technology



Topic 335: TRUENAT

Key Points:

1. WHO has endorsed TrueNat --> an indigenous molecular diagnostic tool for TB
2. Widely followed diagnosis methods include --> Sputum smear microscopy (deals with phenotype)
3. Difference between molecular diagnostic tool and phenotype
4. Genexpert and TrueNat
5. About TrueNat --> polymerase chain reaction (PCR)-based test
6. About tuberculosis (TB) --> Mycobacterium tuberculosis

COMPARISON BETWEEN Genexpert AND TrueNat

PARAMETERS	GENEXPERT	TRUENAT
Sensitivity and Specificity	Same	Same
Time required	More time	Less Time
Airconditioning	Required	Not Required
Power	Continuous Electricity Supply	Battery operated
Cost advantage	Expensive as test for MDR TB and TB diagnostic is done simultaneously	Cheaper since second test for MDR TB is carried on only after positive TB test



Topic 336: 'MERA India' initiative

Key Points:

1. ICMR launched 'MERA India' initiative --> 'Malaria Elimination Research Alliance (MERA) India'
2. Aim --> to plan and scale up research to eliminate Malaria from India by 2030
3. National Vector Borne Diseases Control Program (NVBDCP)
4. NVBDCP's National Strategic Plan recognises the critical role of research
5. About Malaria --> Plasmodium Parasites
6. E-2020 INITIATIVE



Topic 337: Gandhi Citizenship Education Prize and Gandhi Solar Park

Key Points:

1. Portuguese announced the setting up of a Gandhi Citizenship Education Prize
2. Gandhi had said “the greatness of a nation can be judged by the way its animals are treated.”

Key Points:

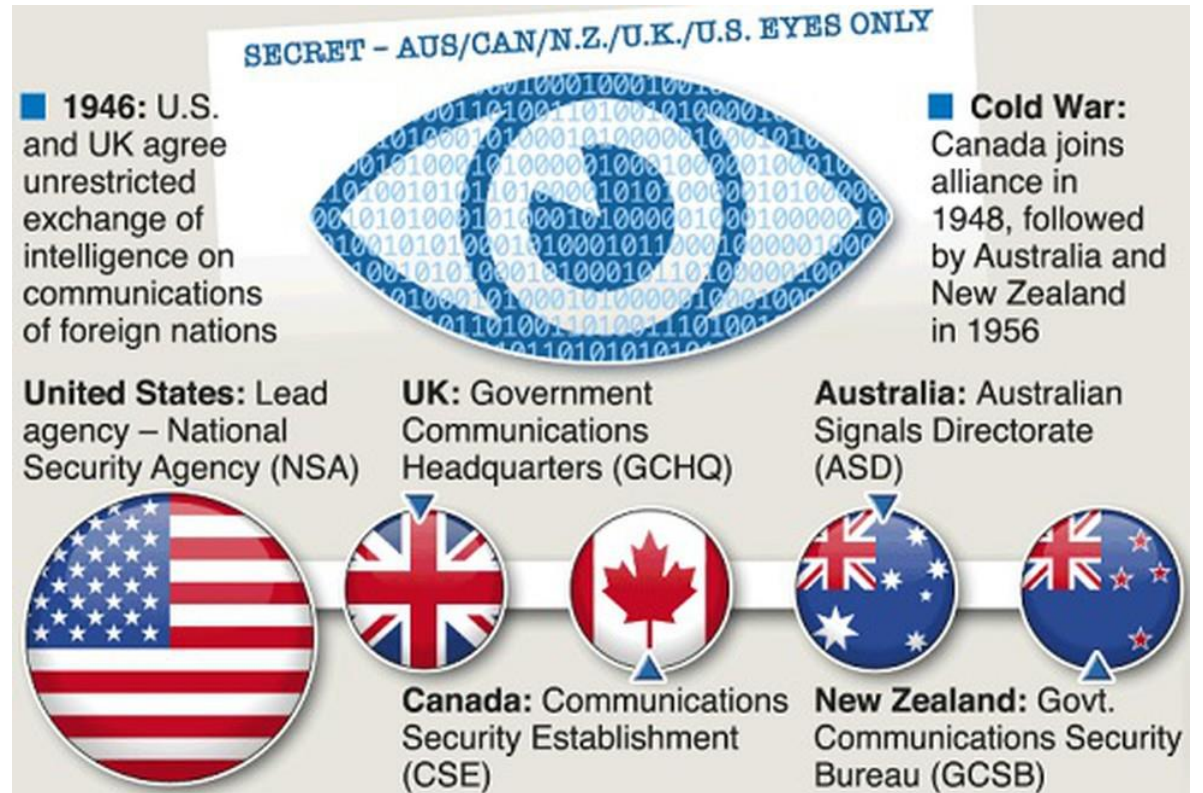
1. Gandhi Solar Park --> was inaugurated at the UN headquarters
2. 50 kWh roof-top solar park having 195 solar panels—each representing a member of the multilateral body – was built by India at a cost of US \$1 million
3. UN postage stamp of Mahatma Gandhi was launched at 'Relevance of Mahatma Gandhi in the Contemporary World' programme
4. India is the third largest emitter of greenhouse gases, after China and the US
5. India has pledged for a 33-35% reduction in emission intensity



Topic 338: Five Eyes Countries and Emerging 7

Key Points:

1. Five Eyes (FVEY) is an intelligence alliance
2. Australia, Canada, New Zealand, the United Kingdom and the United States
3. Multilateral UK-USA Agreement
4. Origins of the FVEY can be traced back to the post–World War II period



Emerging 7 --> China, India, Brazil, Mexico, Russia, Indonesia and Turkey



Topic 339: 5G and D10 - 5G Club

Key Points:

1. 5G wireless technology -->
 - meant to deliver higher multi-Gbps peak data speeds
 - ultra low latency
 - more reliability
 - massive network capacity
2. 5G is based on OFDM (Orthogonal frequency-division multiplexing)
3. 5G also uses wider bandwidth technologies such as sub-6 GHz and mmWave
4. Britain is pushing the U.S. to form a club of 10 nations
5. "D10" club of democratic partners, including G7 countries – UK, US, Italy, Germany, France, Japan and Canada – plus Australia, South Korea and India












Topic 340: Graded Response Action Plan (GRAP) 2019

Key Points:

1. Stricter measures to fight air pollution
2. GRAP was formulated in 2016 and approved by the Supreme Court in same year.
3. It was notified in 2017 by the Centre.
4. It was planned after several meetings of EPCA.
5. It works only as an emergency measure.

HOW THE GOVT WILL WORK TO CURB BAD AIR

Graded Response Action Plan (GRAP) will be put in place from today and will be in force until February-end, 2018. People would be made aware about this through mass media

CATEGORY	ACTION PLAN
 Moderate to Poor PM2.5—61-120 µg/m3 PM10—101-350 µg/m3	<ul style="list-style-type: none">▶ Stop garbage burning, impose heavy fines▶ Enforce pollution regulations in all industries▶ Do periodic mechanised road sweeping▶ Stop plying of visibly polluting vehicles▶ Enforce SC order on diversion, ban on crackers▶ Ensure fly ash ponds are watered every alternate day from Mar – May▶ Use apps to inform people and register complaints 
 Very Poor PM2.5—121-250µg/m3 PM10—351-430 µg/m3	<ul style="list-style-type: none">▶ Stop use of diesel gensets▶ Enhance parking fee by 3-4 times▶ Increase bus and Metro services  ▶ Stop use of coal/firewood in hotels and restaurants▶ RWAs to provide electric heaters to security staff to stop bonfires▶ Issue media alerts and advisories
 Severe PM2.5—250 µg/m3 PM10—430µg/m3	<ul style="list-style-type: none">▶ Close hot mix plants, stone crushers▶ Shut down Badarpur power plant and maximise generation from natural gas-based plants▶ Intensify public transport ▶ Mechanised cleaning of road and sprinkling of water
 Emergency PM2.5—300µg/m3 PM10—500 µg/m3 (persist for 48 hours or more)	<ul style="list-style-type: none">▶ Stop entry of trucks except those carrying essential commodities ▶ Stop construction▶ Introduce odd-even scheme without exemptions▶ Task Force to decide on additional steps 