



SATHYA IAS ACADEMY

Redefining The Philosophy of Success

BEST IAS ACADEMY IN SOUTH INDIA

Group II Main Exam Test - 5

This Test Portions

Environment, ecology, health and hygiene, Bio - diversity and its conservation - Human diseases, prevention and remedies - Communicable diseases and non - communicable diseases - Alcoholism and Drug abuse - Computer Science and advancement.

Time : 2 ½ Hrs
Marks : 300

SECTION - A

Answer any 30 Questions of the following in not exceeding 30 words. 30X3 = 90 Marks

1. Write Note on "ENN SCORE"
"ENN SCORE" குறிப்பு வரைக.
2. Difference between Ecology, Environment and Eco system.
சூழியல், சுற்றுச்சூழல், சூழல் அமைப்பு ஆகியவற்றை வேறுபடுத்துக.
3. Write note on 'TAEI' Scheme
'தாய்' திட்டம் குறிப்பு வரைக.
4. Write Note on ISO 14001.
ஐ.எஸ்.ஓ 14001 பற்றி குறிப்பு வரைக.
5. Explain E-waste management.
இ-கழிவு மேலாண்மை குறித்து எழுதுக.
6. Explain on
a) BSI
b) ZSI
c) FSI
கீழ்க்கண்டவற்றை விவரி.
a) BSI
b) ZSI
c) FSI
7. Explain on ITTO?
விவரி - ITTO
8. What is Ramsar Convention?
ராம்சார் மாநாடு என்பது என்ன?
9. Write note on 'Vazhvoli Thittam'
'வாழ்வொளித் திட்டம்' குறிப்பு வரைக.
10. Types of Aquatic Ecosystem. Explain with examples.
நீர் சூழல் அமைப்பின் வகைகளை உதாரணத்துடன் தருக.
11. Write note on 'Nalamana Tamizhagam'
'நலமான தமிழகம்' குறித்து எழுதுக.
12. Explain what is Autotrophy and Heterotrophy?
தற்சார்பு உணவு உயிரி மற்றும் வெளிச்சார்பு உணவு உயிரி குறித்து எழுதுக.
13. What is IUCN? What is Red data book?
IUCN என்றால் என்ன? சிவப்பு தரவு புத்தகம் என்றால் என்ன?
14. Examples of In-situ Conservation?
உள்ளிட பாதுகாப்புக்கு உதாரணம் தருக.
15. Write note on 'Autism'.
'ஆட்டிசம்' குறித்து எழுதுக.
16. Difference between Lentic and Lotic water with examples.
நிலைநீர் மற்றும் ஓடுநீர் வேறுபாடுகளை எழுதுக.
17. What is biodiversity hotspot? Mention examples in India.
உயிரியல் பல்வகைமை முக்கியப்பகுதி என்றால் என்ன? இந்தியாவில் உதாரணங்களை கூறுக.
18. Write about GEF?
GEF குறித்து எழுதுக.
19. Discuss Vienna Convention.
வியன்னா மாநாடு குறித்து விவாதி.
20. 'CARD' De-Addiction Center.
'CARD' மீள் மறுவாழ்வு மையம் குறித்து எழுதுக.
21. What is '99 DOTS Sleeves' App.
'99 DOTS Sleeves' என்ற செயலி குறித்து எழுதுக.
22. Biotic components of ecosystem with examples.
சூழியல் அமைப்பின் உயிரியல் கூறுகளை உதாரணங்களுடன் எழுதுக.
23. Explain National Adaptation Fund.
தேசிய தழுவல் நிதி பற்றி எழுதுக.
24. Explain Evergreen forest, Deciduous forest, Coniferous forest.
பசுமை மாரா காடுகள், இலையுதிர்க் காடுகள் மற்றும் ஊசியிலை காடுகள் குறித்து எழுதுக.

[Group II Mains Test - 5, DATE : 15.12.2018]

All rights reserved. No part of this booklet may be reproduced, stored in a retrieval system or transmitted, in any form or by any means-electronic, mechanical, photocopying, recording or otherwise, without the permission of the Director, Sathya IAS Academy.



SATHYA IAS ACADEMY

Redefining The Philosophy of Success

BEST IAS ACADEMY IN SOUTH INDIA

25. What is 'ENVIS'?
'என்விஸ்' என்றால் என்ன?
26. Explain Ecology.
சூழியல் என்பதை விவரி.
27. Explain Agro forestry.
வேளாண் காடுகள் என்பதை விவரி.
28. Famous flora and fauna of Western Ghats.
மேற்குத்தொடர்ச்சி மலையில் காணப்படும் முக்கியமான தாவர மற்றும் விலங்கினத்தைப் பற்றி எழுதுக.
29. National Parks of TamilNadu.
தமிழ்நாட்டில் உள்ள தேசிய பூங்காக்கள் குறித்து எழுதுக.
30. What is Cybercrime?
சைபர்குற்றம் என்றால் என்ன?
31. Write about (i) NTCA, (ii) CPCB.
கீழ்க்கண்டவற்றை குறித்து எழுதுக.
(i) NTCA, (ii) CPCB.
32. Explain 'Binge Drinking' and its problem for men and women.
'அதீத குடி' என்பதை விவரி. அதனால் ஆண்களுக்கும் பெண்களுக்கும் ஏற்படும் விளைவுகளை எழுதுக.
33. Write Note on 'INFOTERRA'
'INFOTERRA' குறிப்பு எழுதுக.
34. Coral Reseeding project.
முருகை/பவள மீட்டுருவாக்கத் திட்டம் பற்றி எழுதுக.
35. Why in news (i) Hog deer, (ii) Eurasian otter?
(i) ஹாக் மான் (ii) யூரேசியன் ஆட்டர் எதனால் செய்திகளில் வருகிறது என்பதை எழுதுக.
- SECTION - B**
- Answer any Fifteen Questions in not more than 100 words each. 15X8 = 120 Marks.
36. Write on 'Amma Arokiya Thittam'
'அம்மா ஆரோக்கிய திட்டம்' குறித்து எழுதுக.
37. With examples, explain Food Chain on terrestrial and aquatic organisms.
நில மற்றும் நீர் உயிரினங்களில் நிலவும் உணவுச்சங்கிலியை உதாரணத்துடன் எழுதுக.
38. Discuss the functions and role of Tamilnadu Pollution Control Board.
தமிழ்நாடு மாசுக் கட்டுப்பாட்டு வாரியத்தின் பணிகள் குறித்து எழுதுக.
39. Short notes on
a) Community
b) Terrestrial Ecosystem
சிறுகுறிப்பு வரைக.
a) சமூகம்
b) நில சூழ் அமைப்பு
40. Discuss the aim and objectives of 'ENVIS' Center.
'என்விஸ்' மையத்தின் குறிக்கோள் மற்றும் கொள்கைகளை விவரி.
41. Explain Bacterial diseases with causes symptoms and treatment.
பாக்டீரியா நோய்களின் காரணங்கள், அறிகுறிகள் மற்றும் சிகிச்சைகளை எழுதுக.
42. Explain
a) Earth bio Genome project
b) Eco - Sensitive Zones
கீழ்க்கண்டவற்றை விவரி.
a) புவி உயிர் மரபணு திட்டம்
b) சூழல் மென் மண்டலங்கள்
43. Explain
a) Dudhwa Tiger Reserve - recent in news
b) Blue Revolution
கீழ்க்கண்டவற்றை விவரி.
a) துத்வா புலிகள் சரணாலயம் - சமீபத்திய செய்தி
b) நீலப்புரட்சி
44. Explain
a) Transgenic Rice and reduced arsenic Accumulation
b) Operation Green
c) Bionic Mushrooms
கீழ்க்கண்டவற்றை விவரி.
a) மரபணு மாற்றப்பட்ட அரிசி மற்றும் ஆர்செனிக் படிவு குறைதல்
b) பசுமை நடவடிக்கை
c) பயோனிக் காளான்கள்
45. Write on
a) Basel Convention
b) Minamata Convention
கீழ்க்கண்டவற்றை பற்றி எழுதுக.
a) பசேல் மாநாடு
b) மினமாட்டா மாநாடு

[Group II Mains Test - 5, DATE : 15.12.2018]

All rights reserved. No part of this booklet may be reproduced, stored in a retrieval system or transmitted, in any form or by any means-electronic, mechanical, photocopying, recording or otherwise, without the permission of the Director, Sathya IAS Academy.



SATHYA IAS ACADEMY

Redefining The Philosophy of Success

BEST IAS ACADEMY IN SOUTH INDIA

46. Short notes on Social effects of alcoholism.
ஆல்கஹாலிசத்தின் சமூக விளைவுகள் பற்றி எழுதுக.
47. What is National Green Corps (NGC)?. List out its objectives
தேசிய பசுமைப் படை என்பது என்ன? அதன் நோக்கங்களை விவரி.
48. Write note on Hazardous Waste Management System in Tamil Nadu?
தமிழகத்தில் அபாயகரமான கழிவுகள் மேலாண்மை அமைப்பு செயல்படும் முறையை எழுதுக.
49. What is wetland? Locate the important wetlands in Tamil Nadu.
ஈர நிலம் என்பது என்ன? தமிழகத்தில் உள்ள முக்கியமான ஈர நிலங்களைக் குறிப்பிடுக.
50. Explain the difference between
a) Mediterraman type of Climate
b) China type of Climate
வேறுபாடுகளை விவரி.
a) மத்தியதரை காலநிலை
b) சீனா காலநிலை
51. What is Biotic Interaction and its types?
உயிரியல் இணக்கம் என்றால் என்ன? அதன் வகைகளை விவரி.
52. Write Note on Bhuvan Portal Maps.
புவன் போர்ட்டல் வரைபடம் பற்றி எழுதுக.
53. Write on International Conventions of hazardous waste, chemicals, wetland and ozone.
அபாயக் கழிவு, இரசாயனங்கள், ஈர நிலம் மற்றும் ஓசோன் ஆகியவை குறித்து நடைபெற்ற சர்வதேச மாநாடு பற்றி எழுதுக.
54. Give examples of organizations related to Environment in India.
சுற்றுச்சூழல் தொடர்பாக இந்தியாவில் செயல்படும் அமைப்புகள் குறித்து எழுதுக.

SECTION - C

Answer any two questions in not more than 150 words each. 2X15=30 Marks

55. Discuss the Aim, Objectives and Functions of 'Eco Clubs' in Tamil Nadu
தமிழ்நாட்டில் உள்ள 'சூழல் மன்றங்களின்' குறிக்கோள், நோக்கம் மற்றும் செயல்பாடுகளை விவாதி.

56. Discuss the Environmental Awards instituted by Government of Tamil Nadu. Also Write Note on Environmental Award for the Best Short Film announced by Tamil Nadu Government on September, 2018.
தமிழக அரசால் வழங்கப்படும் சுற்றுச்சூழல் விருது குறித்து விவாதி. தமிழக அரசு செப்டம்பர் 2018-ல் அறிவித்துள்ள சிறந்த குறும்படத்திற்கான சுற்றுச்சூழல் விருது குறித்து எழுதுக.
57. IUCN Classification of Biodiversity conservation with Indian Examples.
IUCN-ன் பல்லுயிர் பாதுகாப்பு வகைப்பாடுகளை இந்திய உதாரணத்துடன் எழுதுக.
58. Discuss about "Message on Wheels" – an initiative announced by Government of Tamil Nadu on December, 2018.
டிசம்பர் 2018-ல் தமிழக அரசால் அறிவிக்கப்பட்ட "சக்கரங்களில் செய்தி" அல்லது "நகரும் செய்தி" என்ற புதிய முயற்சி குறித்து எழுதுக.

SECTION - D

Answer any One question in not more than 300 words each. 1X30 = 30 Marks

59. Give an account on the new initiative announced by the Government of Tamil Nadu on December 14, 2018 on Solid Waste Management at Coastal Hamlets.
டிசம்பர் 14, 2018 அன்று தமிழக அரசால் அறிவிக்கப்பட்ட கடற்கரை கிராமங்களில் திடக்கழிவு மேலாண்மை திட்டம் குறித்து எழுதுக.
60. What is communicable and non communicable disease? Write all types of diseases with examples.
தொற்று மற்றும் தொற்றா நோய்கள் என்பது என்ன? அதன் வகைகளை உதாரணங்களுடன் எழுதுக.
61. Explain types of biome with its name, Location and its flora and fauna. (at least 5)
சுற்றுச்சூழல் அமைப்பின் வகைகள், அமைவிடம் மற்றும் உயிரினங்கள் குறித்து (ஏதேனும் ஐந்திற்கு) எழுதுக.

NEXT TEST PORTIONS (Test 6)

FULL TEST On UNIT - 1

Role and Impact of Science and Technology in the Development of India and TN

[Group II Mains Test - 5, DATE : 15.12.2018]

All rights reserved. No part of this booklet may be reproduced, stored in a retrieval system or transmitted, in any form or by any means-electronic, mechanical, photocopying, recording or otherwise, without the permission of the Director, Sathya IAS Academy.



Group II Main Exam Test - 5 ANSWER KEY

This Test Portions

Environment, ecology, health and hygiene, Bio - diversity and its conservation - Human diseases, prevention and remedies - Communicable diseases - Alcoholism and Drug abuse - Computer Science and advancement.

SECTION - A (3 Marks)

1. ENN SCORE:

- ENN - Emergency Nutrition Network.
- "Nalamana Tamizhagam" Scheme - Identifying risk factors in rural populations.
- Part of National Rural Health Mission (NRHM)
- **Objectives:**
 - Health Promotion
 - Behavioural change in the community
- ENN Score helps in effective screening strategy of NCD (Non Communicable Diseases).
Eg.: Diabets, Hypertension, Malnutrition.

2. Ecology:

- Scientific study of relations that living organisms have with respect to each other and their natural physical environment.
- Concerned with patterns of distribution with abundance in space and time.

Environment:

- Set of circumstances surrounding the organism.
- **Physical Environment:**
 - Light, heat, solar radiation, moisture, wind, oxygen, nutrients in soil, minerals and etc.
- **Biological Environment:**
 - Plants, animals, other micro organisms.
- Concerned with impact of human activities.

Ecosystem:

- A system formed by the interaction of biotic and abiotic components with each other.
- Vary in size and complexity.
- **Types:**
 - Aquatic ecosystem (fresh & Saline Waters)
 - Terrestrial Ecosystem (Forests, Grasslands, Deserts)

3. TAEI Scheme:

- TamilNadu Accident and Emergency care Initiative.
- **Objective:**
 - Reduce mortality due to accidents
 - Save invaluable human lives
- **Function:**
 - Providing emergency care for Road Traffic Accident (RTA) victims.
 - RTA victims brought trauma care within the "Golden Hour" through 108 Ambulances or other vehicle.
 - Based on Triage System (Red, yellow, Green) patients will be treated.

4. ISO 14001:

- International Standard that specifies requirements for an effective Environment Management System (EMS)
- Provides a framework that an organisation can follow.
- Framework used PDCA approach.
- PDCA - Plan - DO - Check - Act.
- **Benefits:**
 - Improve resource efficiency
 - Reduce waste
 - Provide assurance that environmental impact is being measured.

5. E-Waste Management:

- The Ministry of Environment, forest and climate change notified E-Waste Management Rules 2016.
- In India EPR System introduced.
- Extended Producer Responsibility uses financial incentives to encourage manufacturers to design environmentally friendly products.
- Holding producers responsible for the costs of managing their products at end of life.
- E-wastes such as discarded computers, mobile phones, television sets, refrigerator, medical instruments, etc.
- **Major components:**

E - Waste Collection

↓
Sorting

↓
Transportation

↓
Recycling

[Group II Mains Test - 5 ANSWER KEY DATE : 15.12.2018]

All rights reserved. No part of this booklet may be reproduced, stored in a retrieval system or transmitted, in any form or by any means-electronic, mechanical, photocopying, recording or otherwise, without the permission of the Director, Sathya IAS Academy.



SATHYA IAS ACADEMY

Redefining The Philosophy of Success

BEST IAS ACADEMY IN SOUTH INDIA

- **Treatments:**

- Land filling
- Incineration

6. **a) BSI:**

- Botanical Survey of India (1890)
- Carrying out taxonomic and floristic studies on wild plant resources of the country.

b) ZSI:

- Zoological Survey of India (1916)
- **Purpose:**
 - Animal Taxonomy and Conservation.
 - Exploring, Surveying, Inventorying & Monitoring faunal diversity.

c) FSI:

- Forest Survey of India (1981)
- Head Quarter - Dehradun
- To prepare state of forest report biennially
- Providing assessment of latest forest cover in the country.
- Prepare thematic maps using aerial photographs.

7. **ITTO:**

- International Tropical Timber Organisation.
- Established : 1986
- Headquarters: Yoxohama, Japan
- Purpose: Conserve and Manage tropical forest resources.
- Provides a framework of tropical timber producer and consumer countries.

8. **Ramsar Convention:**

- Also known as the Convention on Wetlands.
- Signed: 1971
- Mission: The conservation and wise use of all wetlands through local and national action and International co-operation.
- **Example of Ramsar Sites:**
 - Ashtamudi Wetland (Kerala)
 - Point Calimere Wildlife and Bird Sanctuary (TamilNadu)
 - Cobourg Peninsula (Australia)

9. **Vazhvoli Thittam:**

- School Health Programme
- Every thursday Health Department visits the schools
- Conduct periodical health checkup for students
- Teachers also trained to spot health issues among students.
- **Provided Services:**
 - T.T. immunisation

- IFA distribution

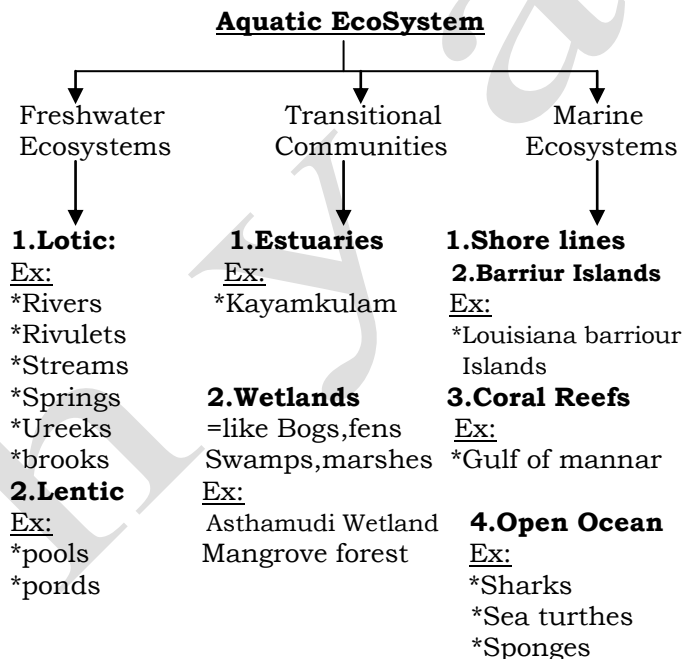
- Nutrition Counselling

- Currently implemented in all 31 Districts.
- Budget: 1 Crore

10. **Types of Aquatic EcoSystem:**

Based on Salinity 2 types:

- Fresh Water EcoSystem
- Marine Ecosystem



11. **Nalamana Tamizhagam:**

- Massive Non-Communicable diseases screening programme for rural areas.
- State Health Department aims to prevent complications of the diseases.
- Create awareness about NCD.
- Volunteers are engaged for risk profiling using "ENN SCORE".
- Individuals obtaining less than 30 Score advised to registered in Primary Helath Centre for further treatment.
- Budget allocation Rs.5.76 Crores.

12. **Auto-trophy:**

Definition:

- An organism capable of synthesizing its own food from inorganic substances using light or chemical energy.

Ex:

Green Plants, Algae, Some bacteria.

Types:

- ✓ Photo Autotrophs
- ✓ Chemoutotrophs

[Group II Mains Test - 5 ANSWER KEY DATE : 15.12.2018]

All rights reserved. No part of this booklet may be reproduced, stored in a retrieval system or transmitted, in any form or by any means-electronic, mechanical, photocopying, recording or otherwise, without the permission of the Director, Sathya IAS Academy.



SATHYA IAS ACADEMY

Redefining The Philosophy of Success

BEST IAS ACADEMY IN SOUTH INDIA

Food Chain Level:

- Occurs in Primary level.

Heterotrophy:

Definition:

- Cannot produce organic compounds from inorganic sources.
- They rely on consuming other organisms.

Ex:

- ✓ Herbivores (Goat)
- ✓ Carnivores (Lion)
- ✓ Omnivores (Human being)

Types:

- ✓ Photo Heterotrophs
- ✓ Chemo Heterotrophs

FoodChain level:

- ✓ Obtains in Secondary and Tertiary level.

13. IUCN:

- International Union for Conservation of Nature.
- Founded: 5, October, 1948.
- Headquarters: Gland, Switzerland.
- **Mission:**
 - Encourage the society to conserve nature.
 - Ensure the use of natural resources is equitable and ecologically sustainable.

Red-Data Book:

- Type of public document created for the records of endangered and rare species.
- Concept and Structure promulgated by IUCN.
- In India BSI - Botanical Survey of India publish Red Data list on Endangered plants.
- ZSI - Zoological survey of India publish Red data list on endangered animals.
- **IUCN Red list categories:**
 - ✓ Extinct (Ex)
 - ✓ Extinct in the wild (EW)
 - ✓ Critically Endangered (CR)
 - ✓ Endangered (EN)
 - ✓ Vulnerable (VU)
 - ✓ Near Threatened (NT)
 - ✓ Least Concern (LC)
 - ✓ Data Deficient (DD)
 - ✓ Not Evaluated (NE)
- **Examples:**
 - Animals:**
 - ✓ Nilgiri Tah
 - ✓ River Dolphin
 - Plants:**
 - ✓ Acacia planifrons
 - ✓ Chlorophytum tuberosum

14. In-situ Conservation:

- Conserving the animals and plants in their natural habitats.
- **Establish habitats:**
 - ✓ National parks
 - ✓ Sanctuaries
 - ✓ Biosphere reserves
 - ✓ Reserved forests
 - ✓ Protected forests
- **Advantages:**
 - ✓ Animals are being utilized.
 - ✓ Performance characteristics recorded and evaluated
 - ✓ Breeds have opportunity to evolve.
- **Disadvantages:**
 - ✓ Risk from diseases
 - ✓ Natural Disasters
 - ✓ Genetic drift may result in unfavourable genetic changes
 - ✓ Maintenance cost is high
 - ✓ Risk of increasing inbreeding

15. Autism:

- Neuro Developmental disorder characterized by difficulties with social interaction and communication.
- **Causes:**
 - ✓ Genetic and environmental factors.
- **Treatment:**
 - ✓ Behavioral therapy
 - ✓ Speech therapy
 - ✓ Psychotropic Medication
- World Autism Awareness Day - April 2.

16. Difference between Lentic and Lotic water:

S. No.	Lentic Water	Lotic Water
1.	Standing Water/ Static water/ Still water/ Stationary Water	Flowing/ Moving/ Running water
2.	Water flow: Discontinuous and indefinite direction	Waterflow: Continuous and definite direction
3.	Width: relatively broad	Width: Relatively narrow
4.	Depth: Deeper	Depth: Shallower
5.	Current Velocity: low	Current Velocity: high
6.	Salt Content: High	Salt Content: low
7.	Example: Pools, Ponds, Swamps, bogs, lakes	Example: Streams, Springs, Rivulets, Creeks, brooks, rivers

[Group II Mains Test - 5 ANSWER KEY DATE : 15.12.2018]

All rights reserved. No part of this booklet may be reproduced, stored in a retrieval system or transmitted, in any form or by any means-electronic, mechanical, photocopying, recording or otherwise, without the permission of the Director, Sathya IAS Academy.



SATHYA IAS ACADEMY

Redefining The Philosophy of Success

BEST IAS ACADEMY IN SOUTH INDIA

17. **Biodiversity Hotspot:**

Definition:

- It is a biogeographic region that has significant levels of biodiversity which is threatened with destruction.
- Status is designated by conservation International.

Criteria:

- Must contain atleast 1500 species of vasculax plants as endemics. (>0.5%)
- To have lost atleast 70% of its primary vegetation.

Examples:

- Western Ghats
- Eastern Himalayas
- Indo-Burma
- Sundaland

18. **GEF:**

- Global Environment Facility
- Established: October 1992
- Location: Washington DC (USA)
- Work focuses on,
 - ✓ Biodiversity
 - ✓ Climate Change
 - ✓ Chemicals
 - ✓ International waters
 - ✓ Land degradation
 - ✓ Sustainable forests management
 - ✓ Ozone layer depletion
- Serve financial, mechanism for conventions.

19. **Vienna Convention:**

- Specific convention for the protection of Ozone layer.
- Signed: 1985, March.
- Mission: International reductions in production of Chlorofluorocarbons.
- Ratifiers: 197 countries
- This is accompanying "Montreal Protocol"
- September 16: The International Day for the preservation of the Ozone layer.

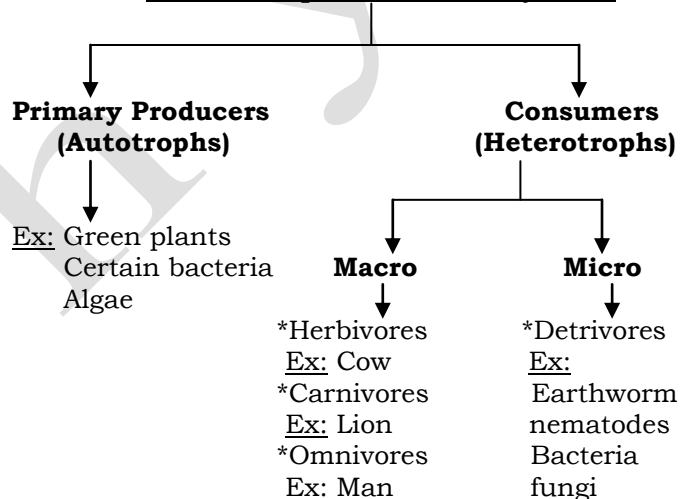
20. **'CARD' De Addiction Centre:**

- CARD - Community Action for Rural Development.
- Established: 2001
- Location: Samathuvapuram, Pudukkottai District.
- Mission: Provide mental health care, Minimize mental health morbidity and mortality.
- Treatment: De addiction treatment, Detoxification.

21. **99 DOTS Sleeves App:**

- DOT - Directly Observed Therapy
- Low-cost approach for monitoring and improving TB medication adherence.
- It is a technology which uses mobile phone.
- TB patients are to ensure to take full course of medication.
- Medication packaged envelopes contains dosage instructions and Series of hidden numbers behind the pills.
- Directly Observed Treatment, Short-course.
- Tuberculosis (TB) controls strategy given by WHO.
- It is a technology which uses mobiles
- Reminds the patient to take the pills regularly.

22. **Biotic Components of Ecosystem:**



23. **National Adaptation Fund (NAFCC):**

- Started in 2015 - 2016.
- This is stated in the 12th Five Year Plan.
- It is implementing by NABARD Bank.

24. **Deciduous Forest:**

- Found in regions experiencing monsoon climate.
- Average RF: 75 to 150 cm
- Average Annual temp: 38°C to 48°C
- Common trees:
 - Teak, sal, sandalwood, Mahua, Mango, Semal, Sheesham, Banyan.
- Animals:
 - Elephant, lion, tiger, leopards, bison, tapier, hippopotamus, flying squirrel.

Coniferous Forest:

- Also called Taiga or Boreal forest.

[Group II Mains Test - 5 ANSWER KEY DATE : 15.12.2018]

All rights reserved. No part of this booklet may be reproduced, stored in a retrieval system or transmitted, in any form or by any means-electronic, mechanical, photocopying, recording or otherwise, without the permission of the Director, Sathya IAS Academy.



SATHYA IAS ACADEMY

Redefining The Philosophy of Success

BEST IAS ACADEMY IN SOUTH INDIA

- Extends from about 50° to 55°N, 65° to 70°N latitudes.
- Absent in southern hemisphere.
- Average RF: 35 cm to 60 cm
- Receives plenty of snow.
- Trees:
 - ✓ Pines, Spruces, firs, maples, cedars
 - ✓ Mosses, Lichens, short grasses
- Animals:
 - ✓ Moose, Deer, bears, bobcate, chipmunks.

25. ENVIS:

- Environmental Information System.
- Provides Scientific, technical and semitechnical information on various environmental issues.
- Implemented on Sixth Year Plan.
- To support and promote research, development and innovation in environment information technology.

26. Ecology:

- Ecology - 'Oikos' - Home or place to live in 'logos' - study.
- A Scientific study of the relationship of the living organisms with each other with their environment.

Example:

- Studying the food chain in a Wetland area.

Levels of organisation of ecology:

- Individual
- Population
- Community
- EcoSystem
- Biome
- Biosphere

27. Agro Forestry:

- Land use management system
- Trees or shrubs grown around crops or pastureland.
- Agriculture + Forestry = Agro Forestry
- Benefits:
 - ✓ Increase Biodiversity
 - ✓ Reduce Erosion
- Example:
 - Sub - Saharan Africa
- National Agro Forestry Policy - 2014.

28. Flora of Western Ghats:

1.	Mosquito fern	-	Azolla pinnata
2.	Waterclover	-	Marsilea Gracilentia

3.	Amla	-	Phyllanthus embica
4.	Sandalwood	-	Santalum Album
5.	Asbora	-	Saraca Indica

Fauna of Western Ghats:

1. Lion-tailed Macacque
2. Indian black planther
3. Nilgiri tahr
4. Malabar pit viper
5. Asian Elephant

29. National Parks of TamilNadu:

S.No	Name	Year	Total Area (Km ²)
1.	Guindy NP	1976	2.82
2.	Gulf of Mannar Marine NP	1980	6.23
3.	Indira Gandhi NP	1989	117.1
4.	Mudumalai NP	1990	103.23
5.	Mukurthi NP	1990	78.46

30. Cybercrime:

- Criminal activity done using computers and Internet.
- Also Non-Monetary offenses like creating and disturbing viruses on other computers.
- Posting confidential business information on the internet.
- Categories:
 - ✓ Hacking
 - ✓ Phishing
 - ✓ Cyber Terrorism
 - ✓ Child Pornography
- CERT-in - Computer Response Team established under Information Technology Act 2008.

31. (i) NTCA:

- National Tiger Conservation Authority.
- Established: December 2005.
- Tigers strength has risen to 3,890 in 2016.
- Project Tiger launched in 1973.
- Functions:
 - ✓ To approve Tiger conservation plan by the Government.
 - ✓ Assess various aspects of sustainable ecology.
 - ✓ Estimation of population of Tigers.

(ii) CPCB:

- Central Pollution Control Board.
- Formed: 22, September 1974.
- Head Office - New Delhi.

[Group II Mains Test - 5 ANSWER KEY DATE : 15.12.2018]

All rights reserved. No part of this booklet may be reproduced, stored in a retrieval system or transmitted, in any form or by any means-electronic, mechanical, photocopying, recording or otherwise, without the permission of the Director, Sathya IAS Academy.



SATHYA IAS ACADEMY

Redefining The Philosophy of Success

BEST IAS ACADEMY IN SOUTH INDIA

- **Functions:**
 - ✓ Promote cleanliness of streams and wells.
 - ✓ Control and abatement of water pollution
 - ✓ Improve the quality of air
 - ✓ Control air pollution

32. **Binge Drinking:**

- Practice of consuming large quantities of alcohol in a Single Session.

Problem for Men:

- Changes in brain functions and balance difficulty
- Irregular heart rate, strokes
- Depressed immune systems
- Liver Cancer

Problem for Women:

- Breast cancer
- Unintended Pregnancy, STD's
- Complications during pregnancy like Miscarriage, SID and Focal Alcohol Spectrum Disorder.

33. **"INFOTERRA":**

- Part of UNEP
- To facilitate the exchange of environmental information withing and among nations.
- Operated in 1977
- It is an Information Referral System
- Head Quarters - Kenya

34. **Coral Reseeding Project:**

- Launches on Great Barrier Reef (Australia)
- Aims to repair reproductive life cycles of corals
- Reestablish breeding population on damaged reefs.
- Larvae produced during reseeded project will grow into thermally tolerant corals
- So it can able to survive in bleaching events.

35. **(i) Hog deer:**

- An endangered species in the IUCN Red list
- Losing its habitat in other countries
- Genetically distinct + Significant population found in "Keibul Lamjao National Park"
- It should protect under "Wild Life Protection Act 1972"
- Scientific Name: Axis porcinus annamiticus

(ii) Eurasian Otter:

- One of the least - known of India's three otter species in Western Ghats.

- It is facing multiple threats such as increasing fragmentation of forests and modification of original habitats.
- So it is protected by "Wildlife Protection Act (1972)"
- Scientific Name: Lutra Lutra

SECTION - B (8 Marks)

36. **Amma Arokiya Thittam:**

- An Annual wellness health checkup programme.
- To improve the health and Well being of people through ,
 1. Health Promotion
 2. Prevention
 3. Early Detection
 4. Treatment of Disease Conditions
- Providing free access to basic health checkup to all the people in the age of 30 and above.
- Benefit population more than 3.5 crore.
- 25 parameters screened under this programme.
 1. Height
 2. Weight
 3. Body Mass Index (BMI)
 4. Blood Pressure
 5. Blood - Total Count
 6. Blood - Differential Count
 7. Haemoglobin
 8. Peripheral Smear
 9. Blood Grouping and Typing
 10. Random Blood Sugar
 11. Blood - Cholesterol
 12. Blood - Creatinine
 13. Urine - Albumin
 14. Urine - Sugar
 15. Urine - Deposits
 16. Ultrasound Abdomen if needed
 17. ECG based on symptoms
 18. X-ray if needed
 19. Sputum Microscopy (AFB)
 20. Screening for Ca Cervix
 21. Screening for Ca Breast
 22. Screening for Oral Cancer
 23. Ophthalmic screening for visual acuity and cataract
 24. Screening for dermatological conditions
 25. General Examination by Medical Officer.
- If any disease condition is identified, Patients are treated at free of cost in Primary Health Centres/Government

[Group II Mains Test - 5 ANSWER KEY DATE : 15.12.2018]

All rights reserved. No part of this booklet may be reproduced, stored in a retrieval system or transmitted, in any form or by any means-electronic, mechanical, photocopying, recording or otherwise, without the permission of the Director, Sathya IAS Academy.



SATHYA IAS ACADEMY

Redefining The Philosophy of Success

BEST IAS ACADEMY IN SOUTH INDIA

Hospitals/Medical College Hospitals/
Empanelled Hospital under CM's
Comprehensive Health Insurance Scheme.

- Budget allocation - Rs.1,20,00,000 per year for PHC's.
- Tests carried out twice a week at PHC's.

37. Food Chain:

1) Definition:

- The flow of food (energy) in an ecosystem.
- This flow or feeding structure called as "Trophic Structure".
- Each level in the structure called "Trophic Level".
- Food Chain starts the movement of energy from one trophic level to another level.

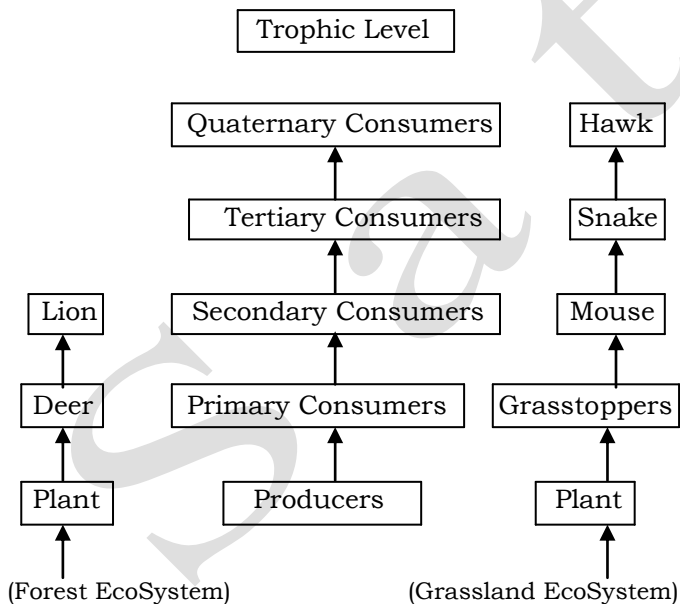
2) Types of Food Chain:

(i) Grazing Food Chain:

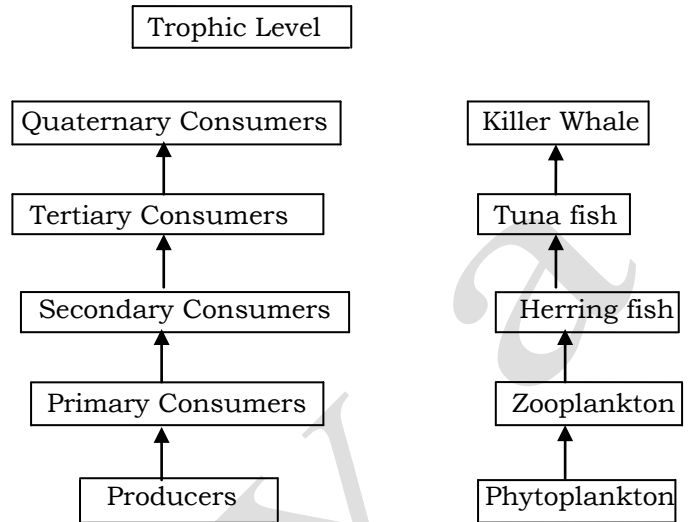
- Terrestrial Ecosystem
- Aquatic Ecosystem
- Detritus Food Chain
- Food Chain starts utilizing the plant part.
- Base - Green plants - Primary Consumer - Herbivore.

Example:

1) Terrestrial Food Chain/EcoSystem

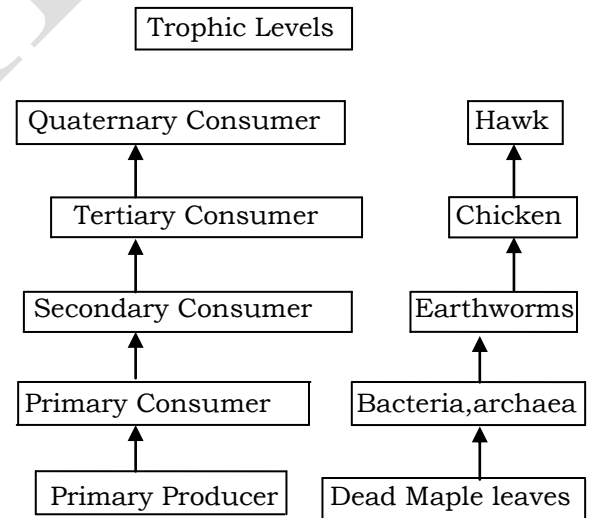


2) Aquatic EcoSystem/Food Chain:



(ii) Detritus Food Chain:

- Food Chain starts from dead organic matter of decaying animals & plants.
- Consumed by Micro organism called detritivores or decomposer or predators.



38. TamilNadu Pollution Control Board:

- Formed: 27, February 1982
- Head Office: Chennai
- Members:
 - 1 Chairman (Full Time)
 - 5 Officials nominated by Government.
 - 5 persons to represent local authorities.
 - 3 non-officials to represent agri, fishery or industry.
 - 2 persons to represent corporations.
- Organisational Setup:
 - Three-tier System
 - Head Office - 1

[Group II Mains Test - 5 ANSWER KEY DATE : 15.12.2018]

All rights reserved. No part of this booklet may be reproduced, stored in a retrieval system or transmitted, in any form or by any means-electronic, mechanical, photocopying, recording or otherwise, without the permission of the Director, Sathya IAS Academy.



SATHYA IAS ACADEMY

Redefining The Philosophy of Success

BEST IAS ACADEMY IN SOUTH INDIA

- Zonal Offices - 5
- District Offices - 36
- **Environmental Legislations:**
 - The Water Act 1974
 - The TamilNadu Water Rules 1983
 - The Water Cess Act 1977
 - The Water Cess Rules (TN) 1978
 - The Air Act 1981
 - The TamilNadu Air Rules 1983
 - The Environment Act 1986
 - The Environment Rules 1986
 - The Hazardous and Other Waste Rules 2016
 - Noise Pollution Rules 2000
 - E-Waste Rules 2016
 - The Plastic Waste Management Rules 2016
- **Functions of TNPCB:**
 - To plan a comprehensive programme for the prevention, control and abatement of Water.
 - To advise the State Government on any matter concerning pollution.
 - To collect and disseminate information relating to water and air pollution.
 - To inspect sewage and trade effluent treatment plants for their effectiveness and specifications for corrective measures.
 - To inspect industrial plants are manufacturing process.
 - To assess the quality of air in the air pollution control areas.
 - To collect sewage samples and analyze for specific parameters.
 - To evolve best economically viable treatment technology for sewage and trade effluents.
 - To collaborate with CPCB - Central Pollution Control Board to organise mass education programme relating pollution & pollution control.
- **Monitoring of Industries:**
 - For effective monitoring industries categorized according to their pollution as,
 - ✓ Red
 - ✓ Orange
 - ✓ Green
 - ✓ White
 - Also classified based on the Gross fixed assets of industry as,
 - ✓ Large
 - ✓ Medium
 - ✓ Small

39. **a) Community:**
- Refers to all the plants and animals living in an area.
 - In order to survive, individuals of any one species depend on individuals of different species.
 - They actively interact in several ways.
- Example:**
- ✓ Animals require plants for food and trees for shelter.
 - ✓ Plants require animals for pollination, seed dispersal, nutrients supply to soil.
- Named based on the plant species.
- Example:**
Grassland Community (Grass, Herbs, Shrubs, Trees)
- Types of Community:**
- a) Major Community:**
- Large sized
 - Well organised & independent of adjacent communities.
 - Depends only on sun's energy.
- Eg:**
Tropical Evergreen forest (North-East)
- b) Minor Community:**
- Depends on neighbour Communities.
 - Not completely independent units as for as energy & nutrients are concerned.
- b) Terrestrial EcoSystem:**
- Terrestrial part of biosphere.
 - Characterized by climate, vegetation, Animals life and general soil type.
 - Climate determines its boundaries.
 - Most important climatic factors on temperature and precipitation.
- Types:**
- 1) Tundra:**
- Region → Lying beyond the Arctic Circle (66.5°N latitude)
 - Found only in Northern Hemisphere & Southern Hemisphere poles.
 - Climate → Covered with snow.
 - Average Annual temperature -12°C
 - Flora → Lichen
 - Mosses
 - Sedges
 - Fauna → Polar bear, Arctic fox, Arctic Weasel, Musk Oxen, Caribour (animals)
 - Moths, Beetles (insects)
 - Swans, Harlequin ducks, Sand pipers, penguins (birds)

[Group II Mains Test - 5 ANSWER KEY DATE : 15.12.2018]

All rights reserved. No part of this booklet may be reproduced, stored in a retrieval system or transmitted, in any form or by any means-electronic, mechanical, photocopying, recording or otherwise, without the permission of the Director, Sathya IAS Academy.



SATHYA IAS ACADEMY

Redefining The Philosophy of Success

BEST IAS ACADEMY IN SOUTH INDIA

2) Taiga:

- Region - Extends across Europe, North America and Asia.
- Also called Boreal (or) Coniferous Forest.
- 50° to 55°N to 65° to 70°N latitudes.
- Climate - short wet summer & long cold winter.
- 35 - 60 cm rainfall.
- Flora - pines, spruces, firs
- Fauna - hawks, elks, puma, siberian tiger, Wolverine.

3) Temperate Deciduous Forest:

- Region - Mid Latitude areas (30° & 50° North & South of Equator)
- Eastern United States, Europe, China, Japan.
- Flora - Acacia, Cacti, date, Palm, Kikar, babul.
- Fauna - Camel, Antelops, Cape hare, hedgehog, fox.

40. "ENVIS" Center:

- ENVIS: Environment Information System.
- Central Sector Scheme of MOEFCC.
- Implemented in 1982, December.

Aim of ENVIS:

- To integrate country - wide efforts in environmental information, collection, storage, collation, retrieval and dissemination.
- Consist of 76 centres.
- Introduced in 6th Five Year Plan.

ENVIS Centre:

- ENVIS is a decentralized computerized network database system.
- Consist of focal point located in the Ministry and a chain of network partners.
- Located in potential organisations/ institutions throughout the country.

Objectives:

- To support and promote research, development and innovation in environment information technology.
- To promote exchange of information amongst developing countries.
- To promote national and international co-operation related to environment.
- Establish linkages with all information sources in wildlife conservation.
- To publish reports, documents, research papers related to environment.

41.

Bacterial Diseases	Causes	Symptoms	Treatment
1. Typhoid	*Salmonella typhi *Contaminated food and water	i) Continuous fever ii) Intestine inflammation iii) Intestinal Ulcer iv) Spleens enlargement	i) Vaccines ii) Antibiotic iii) Drugs
2. Gastro enteritis	*Salmonella-Choleraesuis	i) Blood stream in intestinal tract ii) High fever, chills iii) Weight loss	i) Vaccines ii) Antibiotic iii) Drugs
3. Cholera	*Vibrio Cholerae *Contaminated food and water	i) Vomiting ii) Profuse diarrhoea stool iii) Dehydration	i) Vaccines ii) Antibiotic iii) Drugs
4. Plague	*Yersinia Pestis	i) Inflamed lymph Glands ii) Shivering iii) fever iv) Nausea v) Vomiting	i) Vaccines ii) Antibiotic iii) Drugs
5. Syphilis	*Treponeme Pallidum	i) Blindness ii) Loss of hearing iii) Brain damage iv) Insomnia v) Headache vi) Spinal cord damage	i) Antibiotics (Penicillin)
6. Gonorrhoeas	*Neisseria gonorrhoea	i) Infection in Urethra, Cervix ii) Fever, abdominal pain iii) Arthritic	i) Antibiotics (Penicillin)

42. a) Earth Bio Genome Project:

- EBP aims to sequence catalog and characterize the genomes of all Earth's eukaryotic biodiversity over a decade.

Vision:

- For preserving biodiversity
- Sustaining human societies

[Group II Mains Test - 5 ANSWER KEY DATE : 15.12.2018]

All rights reserved. No part of this booklet may be reproduced, stored in a retrieval system or transmitted, in any form or by any means-electronic, mechanical, photocopying, recording or otherwise, without the permission of the Director, Sathya IAS Academy.



SATHYA IAS ACADEMY

Redefining The Philosophy of Success

BEST IAS ACADEMY IN SOUTH INDIA

- Conservation of endangered species
- Preservation of Ecosystem

Project Details:

- Main goal to understand the evolution and organization of life on our planet.
- Sequencing and annotating the genomes of 1.5 million known species of Eukaryotes.
- Seeks to reveal some of the estimated 10 to 15 million unknown species.
- Plans to capitalize "Citizen Scientist" movement to collect specimens.
- Time taken for this project is 10 years.
- Cost estimation \$4.7 billion.
- Digital storage capacity requires \approx 200 peta bytes.

Significance of the Project:

- Scientific understanding of life on earth.
- Global innovations in medicine, Genomics.
- Developing biological synthetic fuel, food sources.

b) Eco-Sensitive Zones:

- Act as transition zone from areas of high protection.
- ESZ regulated by MOEFCC.
- New Guidelines of ESZ in 2011.
- Creation based on Environment Protection Act 1986.

Purpose:

- To protect the areas by regulating and managing the activities around them.
- Provide a mechanism to conserve biological diversity of an area.
- Allowing for sustainable development to take place.
- Prohibit tourism and constructional activities.

Criteria for Declaring ESZ:

- Based on the species (Endemism, Rarity)
- Based on EcoSystem (Sacred groves, Frontier forests)
- Based on Geo-morphologic feature (uninhabited islands, origins of rivers)

Examples:

- ✓ The Western Ghats
- ✓ National Parks and Wildlife Sanctuaries

43. a) Dudhwa Tiger Reserve (DTR):

- Location: Lakhimpur Kheri and Bahraich districts (UP)
- Area: 1,284.3 Km²
- Consist of: Dudhwa National Park, Kishanpur Wildlife Sanctuary and Katarniaghat Wildlife Sanctuary.
- Established: 1987.

- Tiger Census: Estimated 106 - 118 tigers.
- Details: One of the finest forests in India.
- Some Trees are 150 years old.
- Apart from tigers it is also home to swamp deer, sambar deer, hog deer, Indian rhino, sloth bear, ratel, civets, fishing cat, etc.
- So it should be highly protected from forest criminals.
- Recently Sashastra Seema Bal (SSB) joined with DTR officers to provide security against wildlife crimes.

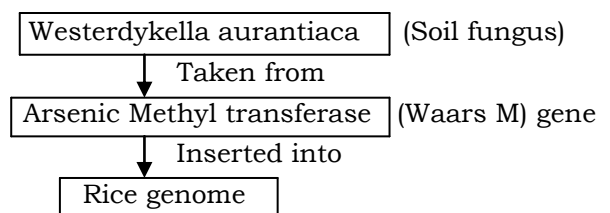
b) Blue Revolution:

- New technology for increasing fish production.
- To achieve double - digit growth in fishery sector.
- Aquaculture - Rearing of fish.
- India is the 2nd largest fishery producer in the world.
- NFDB - National fisheries Development Board.
 - Location - Hyderabad.
 - Objective - Enhance fish production, to strengthen infrastructure facilities of fisheries sector.
- FIDF - Fisheries and Aquaculture Infrastructure Development Fund.
 - Budget allocation - Rs.8000 crore.
- Target: 15 million ton fish production by 2020.
- Objectives:
 - To improve economic growth (GDP)
 - Food security & nutritional security
 - Employment Generation
 - Full utilization of water resources
 - Increase income of farmer

44. a) Transgenic Rice and reduced Arsenic Accumulation:

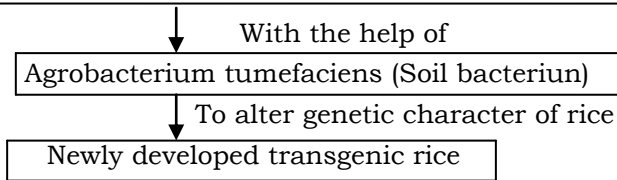
- Rice (*Oryza Sativa*) grown on Arsenic containing soil and water.
- Arsenic poses significant health risk.
- Gene modification done in rice to reduce arsenic accumulation.
- Lucknow - based CSIR developed transgenic rice.

Process of Gene Modification:



[Group II Mains Test - 5 ANSWER KEY DATE : 15.12.2018]

All rights reserved. No part of this booklet may be reproduced, stored in a retrieval system or transmitted, in any form or by any means-electronic, mechanical, photocopying, recording or otherwise, without the permission of the Director, Sathya IAS Academy.



b) Operation Green:

- Announced by Union Government Budget 2018 - 2019.
- To stabilise supply of Tomato, Onion, Potato (TOP)
- Aimed at ensure availability of TOP crops throughout the year without price volatility.
- Double the income of farmers by 2020.

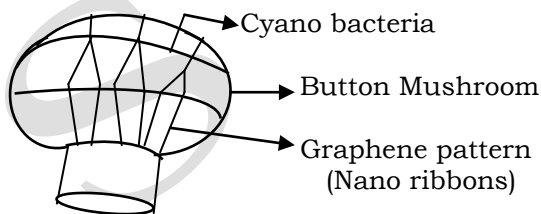
Objectives:

- Price stabilisation for producers and consumers.
- Reduction in post-harvest losses.
- Development of suitable agro logistics.
- Creation of appropriate storage capacity linking consumption centres.

c) Bionic Mushrooms:

- Indian origin developed this bionic device.
- Based on the concept of symbiosis state of living.
- With the refinement of 3D-printing technology tiny materials/nano sized can produced.
- A mushroom cap is spiraled over nano ribbons consist of Cyanobacteria (Using 3D-printing)
- Cyanobacteria gives energy and Mushroom give Shelter.
- The combination of bacteria and mushroom enables a process called "Photosynthetic bio electricity generation".
- Nano ribbon collects current where as Cyanobacteria produce electricity.

Bionic Mushroom



45. a) Basel Convention:

- Control of Transboundary Movements of Hazardous wastes and their Disposal.
- Adopted in 1989, Basel, Switzerland.

Objectives:

- To protect human health and the environment against the adverse effects of hazardous wastes.
- To stop dumping of hazardous wastes into developing nations.

Hazardous Waste Types:

1. Household types
2. Incinerator ash
3. Hazardous Wastes

- Hazardous - flammable, toxic, explosive, corrosive.

- Enacted from 1992

- Parties - 183 Countries

B) Minamata Convention:

- United Nations treaty

- Signed - 2013, October

- Location - Kumamoto, Japan

- Effect from - 2017, August

- Parties - 101 Countries.

Objectives:

- To protect human health & environment from anthropogenic emissions & mercury.

- International agreement will enhance the reduction of mercury pollution.

- Urges enterprises to move mercury free products.

• Harmful effects of Mercury:

- Top ten hazardous chemicals.

- Once released into environment it bio accumulates & magnifies in food chain.

- Easily entered in human body.

- Nervous problems.

- Digestive problems.

- Lungs, Kidneys, skin, eyes affects by Hg.

• Mercury Pollution:

- Obtained from burning of coal.

- Medical products like measuring devices, thermometer and barometers.

- Extraction of minerals

- Switches, relays, lamps

46. Social Effects of Alcoholism:

1) At work place:

- Loss of Employment

- Fighting with colleagues

- Accidents while handling machinery

- Aggressive behaviour - Physical or verbal.

- Decreased productivity.

2) Relationship Problems:

- Violence towards family members, especially towards spouse.

[Group II Mains Test - 5 ANSWER KEY DATE : 15.12.2018]

All rights reserved. No part of this booklet may be reproduced, stored in a retrieval system or transmitted, in any form or by any means-electronic, mechanical, photocopying, recording or otherwise, without the permission of the Director, Sathya IAS Academy.



SATHYA IAS ACADEMY

Redefining The Philosophy of Success

BEST IAS ACADEMY IN SOUTH INDIA

- Separations and divorces.
- Emotional hardships to family.
- Substantial mental health problems i.e., anxiety, depression.
- Misbehaving in social gatherings.

3) Financial Problems/Legal Problems:

- Arrest for misconduct.
- Increasing vulnerability towards crimes and illegal acts.
- Violence against others
- Risk of being a perpetrator or a victim of sexual harassment, physical, emotional and sexual abuse.
- Expenditure on purchasing alcohol.
- Medical expenditure for treatment.
- Financial hardships due to loss of Employment.
- Squandering financial resources of family.
- Climate: Average annual temperature (10°C)
- It has 4 seasons.
- Flora: Oak, Maple, beech, hickory, Cedar, Chesnut
- Fauna: Ants, Insects, bees, wasps, cicadas, mosquitoes, frogs, toads, snakes, salamanders, Wood pecker, robin, owls, turkeys, Porcupine, rabbits, white tailed deer, etc.

4) Tropical rain forest:

- Region: 10°N & S of the Equator.
- Amazon basin of South America, Congo basin of Africa.
- Indo-Malaysian Region.
- Climate: Avg annual temp → 20°C to 30°C
- Avg Rainfall → 200 cm
- Flora: Mahogany, rosewood, ebony, rubber, Cane, Bamboo.
- Fauna: Innumerable insects, birds, reptiles, furless animals.
- Tribes: Pygmies - Africa, Yanomani & Tikuna - Amazon region.

5) Savannah:

- Region: Found between rainforest and desert region.
- Africa, South America, Australia, Asia.
- Climate: Summer → 38°C, Winter → -40°C
- Avg Rainfall 25cm to 50cm
- Flora: Acacia, Baobab trees, Grasses
- Fauna: Giraffe, Kangaroo, Zebra, Hyenas, Cheetah.

6) Desert:

- Region: Western parts of continents.
- Climate: Hottest & Irregular Rainfall temp.

47. National Green Corps (NGC):

- Programme of Ministry of Environment and Forests.
- Covering around 1,20,000 schools in India with NGC school Eco clubs.
- NGC students participate in activities related to Biodiversity Conservation.
 - ✓ Water Conservation
 - ✓ Energy Conservation
 - ✓ Waste Management
 - ✓ Land Use Planning
 - ✓ Resource Management
- NGC take up environmental awareness activities and outreach activities.
- Attract public attention and public support for an environmental cause or intervention.
- Most activities in Schools,
 - ✓ Water Harvesting
 - ✓ Plantation
 - ✓ Composting of biodegradable Waste
- **MOTTO:**
 - Where there is Green, there is prosperity".
- The first ever National Conference of NGC Eco clubs is at Hyderabad from 26 Aug, 2010 to 29 Aug, 2010.

In TamilNadu:

- NGC launched in 8000 schools
- Located in 32 districts
- 250 schools per district

Objectives of NGC:

- To educate children about their immediate environment and impart knowledge about EcoSystem.
- To provide environmental education opportunities for children.
- To facilitate children's participation in decision making related to environmental issues.
- Engage students in action based program related to environment.
- Take participation in activities of conservation of Nature.

48. Hazardous Waste Management System in TamilNadu:

Hazardous Waste:

- Any waste which has the characteristics such as physical, chemical, biological, reactive, toxic, flammable, explosive, corrosive is likely to cause danger to health & environment.
- TNPCB introduced Hazardous & other waste management rules in 2016.

[Group II Mains Test - 5 ANSWER KEY DATE : 15.12.2018]

All rights reserved. No part of this booklet may be reproduced, stored in a retrieval system or transmitted, in any form or by any means-electronic, mechanical, photocopying, recording or otherwise, without the permission of the Director, Sathya IAS Academy.



SATHYA IAS ACADEMY

Redefining The Philosophy of Success

BEST IAS ACADEMY IN SOUTH INDIA

- TNPCB identified 3,545 units generating hazardous Wastes.
- In TamilNadu 6.91 lakhs tons of Hazardous Waste generated annually.
- Board takes effective steps in handling and management of hazardous wastes.
- Treatment and Disposal in an environmentally safe manner.
- Some examples of Hazardous Wastes,
 - Arsenic
 - Barium
 - Cadmium
 - Nitrate
 - Lead
 - Mercury
 - Benzene
 - Sulphide
 - Cyanide
 - Antimony
- Sources of Hazardous Wastes:
 - Petrochemical process
 - Crude Oil Production
 - Production of Copper, Lead, Aluminium
 - Production of fertilizers
 - Production of plastics
 - Leather tanneries
 - Pulp and Paper Industry
 - Production of textiles
 - Production of paints, pigments, Varnishes
 - Electronic Industry
 - Chemical processing of Ores.
- Steps for the management of Hazardous Wastes,
 - Prevention
 - Minimization
 - Reuse
 - Recycle
 - Recovery
 - Safe Disposal
- Treatment Plants:
 - TSDF - Treatment Storage & Disposal Facility.
 - CETP - Common Effluent Treatment Plants.
- Salient Features,
 - Authorization under rules for all stake holders handling hazardous waste.
 - Waste management hierarchy being incorporated.
 - Process of import/export wastes streamlined by simplifying procedure.
 - Separate schedule for metal scrap, paper waste, electrical and electronic wastes.

- Important Conventions,
 - Basel Convention
 - Rotterdam Convention
 - Stockholm Convention

49. Wetland:

- An area of land which is permanently saturated with water.
- Exists as a distinct ecosystem.

Roles of Wetlands:

- Water purification
- Flood Control
- Carbon Sink
- Shoreline Stability
- Shelter to aquatic plants and animal

Examples:

Flora →

- ✓ Milkweed, bald, Cypress trees, Mangroves, Cattails.

Fauna →

- ✓ Crustaceans (aquatic arthropods)
- ✓ Crab, lobsters, cray fish, barnacles, shrimps, krill
- ✓ Molluscs' → Snail, Slug, Squid, Mussel, Octopuses.

Types of Wetland EcoSystem:

1. Bog
2. Fen
3. Swamps

Other details:

- World Wetland day - February 2.
- The Sundarbans - Largest Mangrove region in the world.
 - UNESCO World Heritage Site.
- Important Convention - Ramsar Convention (1982)

Location of Important Wetlands in TamilNadu:

1. Pichavaram - Cuddalore
2. Muthupet - Thiruvarur
3. Gulf of Mannar - Thoothukudi/Tuticorin
4. Punnakayal - Tuticorin
5. Pallikaranai - Chennai
6. Kaliveli - Villupuram
7. Point Calimere - Nagai



[Group II Mains Test - 5 ANSWER KEY DATE : 15.12.2018]

All rights reserved. No part of this booklet may be reproduced, stored in a retrieval system or transmitted, in any form or by any means-electronic, mechanical, photocopying, recording or otherwise, without the permission of the Director, Sathya IAS Academy.



50. **a) Mediterranean type of Climate:**

- Type of the Koppen Classification.
- Characterized by hot, dry summers and cold, wet winter.
- Located between 30° and 45°N & S latitude of Equator.
- Regions:
 - ✓ California (San Francisco)
 - ✓ South - Western tip of Africa (Capetown)
 - ✓ Southern Australia (Swanland)
 - ✓ Central Chile
 - ✓ Mediterranean Sea areas.
- Mean annual precipitation: 35 to 90 cm.
- Temperature: ≥ 10°C (Hot Month)
-3°C to 18°C (Cold Month)
- Local winds:
 - ✓ Sirocco
 - ✓ Mistral
- Natural Vegetation:
 - ✓ Mediterranean evergreen forest
 - ✓ Evergreen Coniferous forest
 - ✓ Mediterranean bushes, shrubs
 - ✓ Grass
- Agriculture:
 - ✓ Orchard forming
 - ✓ Crop cultivation
 - ✓ Sheep rearing
 - ✓ Wine production
 - ✓ Wine production
 - ✓ Economy

b) China type of Climate:

- Temperate monsoon climate
- Found in most part of China & Japan
- Characterized by summer with low pressure, winter with high pressure.
- Chances of occurrence of typhoons
- Precipitation: high & 100cm rainfall per annum.
- Mean temperature: 40°C & 78°C
- Natural Vegetation:
 - ✓ Luxuriant Vegetation
 - ✓ Evergreen broad leaved forest
 - ✓ Deciduous trees

Eg:
Oak, Camphor, Pines, Cypress
- Agriculture:
 - ✓ Rice, tea, mulberries
 - ✓ Paddy Cultivation in huge amount
 - ✓ cotton, corn, Tobbacco

51. **Biotic Interaction:**

- Organisms living in the earth are interlinked to each other.
- The interaction between the organisms is fundamental for its survival and functioning of ecosystem.

Types:

1) Mutualism:

- Both species benefit
- Ex:
 - ✓ In pollination mutualism
 - ✓ Pollinator gets food
 - ✓ Plants gets cross - fertilization

2) Commensalism:

- One species benefits other unaffected
- Ex:
 - ✓ Cow dung provides food & shelter to beetles
 - ✓ Beetles have no effect on cows

3) Competition:

- Both species harmed
- Ex:
 - ✓ Two species eats same food both suffer shortage of food.

4) Predation and Parasitism:

- One species benefit & other harmed.
- Ex:
 - ✓ Fish kills of sucking blood by Predators.
 - ✓ Other harmed by losing blood.

5) Amensalism:

- One species harmed & other unaffected
- Ex:
 - ✓ Large tree shades small plants. So growth refendation occurs.
 - ✓ Small plant has no effect on large tree.

6) Neutralism:

- No net benefit or harm to either species.

52. **Bhuvan Portal Maps:**

- A Web mapping service that allows users to explore a 2D or 3D representation of the surface of earth.
- Offering high resolution
- Developed by ISRO
- Launched on 12, August 2009
- Available Languages: English, Hindi, Tamil, Telugu.
- National Remote Sensing Agency plays vital role in this product
- ISRO used data provided by satellites including Resource Sat-1, Carto Sat-1, and Carto Sat-2 for best imagery of India possible.

[Group II Mains Test - 5 ANSWER KEY DATE : 15.12.2018]

All rights reserved. No part of this booklet may be reproduced, stored in a retrieval system or transmitted, in any form or by any means-electronic, mechanical, photocopying, recording or otherwise, without the permission of the Director, Sathya IAS Academy.



SATHYA IAS ACADEMY

Redefining The Philosophy of Success

BEST IAS ACADEMY IN SOUTH INDIA

- **Features:**
 - Information on Soil, Wasteland and Water resources on Indian Subcontinent.
 - Allows visualization of Automatic Weather station data.
 - Contour Maps
 - Terrain Profile
 - Navigation Map
 - **Services & Functions:**
 - ENVIS Program
 - Bhuvan Panchayats
 - Supports disaster management like Cyclones, Earthquakes, Landslides, Forest fire, Drought, Floods.
 - Rainfall Parameters
 - Clean Ganga Project
53. **International Conventions of Hazardous Waste, Chemicals, Wetlands and Ozone:**
- 1) Basel Convention:**
- Signed: 22, March 1989
 - Basel (Switzerland)
 - Enacted: 5, May 1992
 - Objectives: Control transboundary movements of hazardous wastes.
 - Protect human health and environment against adverse effects of hazardous wastes.
 - Types: Incinerator ash, Household type.
 - Hazardous Wastes - Flammable, toxic, explosive, corrosive.
- 2) Stockholm Convention:**
- Signed: 2001
 - Enacted: 2004
 - Global treaty to protect human and environment from POP's
 - POP - Persistent Organic Pollution
 - 12 Chemicals categorized as pollutants
 - In India NIP - National Implementation Plan demonstrate convention rules/norms.
- 3) Ramsar Convention:**
- Also known as the convention on Wetlands
 - Signed: 1971
 - Place: Ramsar (Iran)
 - India became signatory in 1982
 - Mission: Conservation of Wetlands Wise use of wetlands for sustainable ecosystem.
 - **Example of Ramsar Sites:**
 - ✓ Asthamudi (Kerala)
 - ✓ Point calimore (TamilNadu)
 - ✓ Cobourg Peninsula (Australia)
- 4) Vienna Convention:**
- Signed: 1985 March
 - Ratifiers: 197 countries
- Specific convention for the protection of Ozone layer
 - Mission: Reduction of CFC's
 - Accompanied Montreal Protocol
 - September 16: The International Ozone Layer Protection Day.
54. **Organisations related to Environment in India:**
- 1) MOEF - Ministry Of Environment and Forest:**
- Planning, Promoting, Co-ordinating, overseeing implementation of environmental programmes in country.
 - Conservation of forest, Wild Life
 - Prevention & Control of Pollution
 - Nodal agency for UNEP - United Nations Environment Programme.
- 2) CPCB - Central Pollution Control Board:**
- Constituted in September 1974
 - Water Act 1974
 - Air Act 1981
 - Environment Act 1986
 - Protect the quality of air, water from pollution.
- 3) Wildlife Crime Control Bureau (WCCB):**
- Head Quarters - Delhi
 - Constituted: 2007
 - To investigate wildlife crime
- 4) GLOBE - Global Learning and Observation to Benefit the Environment:**
- Education Programme to study the global environment.
 - Implemented on 2000 in India.
- 5) NGT - National Green Tribunal:**
- Setup 2010
 - Purpose: Expeditious disposal of cases relating to environmental protection.
 - Enforce legal rights to environment.
 - Giving relief and compensation for damages to persons.
 - Principal Bench: Delhi.
- 6) National Adaptation Fund for Climate Change (NAFCC):**
- Implemented in 12th Five Year Plan.
 - To reduce adverse impact of Climate changing factors.
- 7) FSI - Forest Survey of India:**
- 1981 established
 - Assess the forest resources on regular interval in the country.
 - Head Quarters - Dehradun (Uttarakhand)

[Group II Mains Test - 5 ANSWER KEY DATE : 15.12.2018]

All rights reserved. No part of this booklet may be reproduced, stored in a retrieval system or transmitted, in any form or by any means-electronic, mechanical, photocopying, recording or otherwise, without the permission of the Director, Sathya IAS Academy.



SATHYA IAS ACADEMY

Redefining The Philosophy of Success

BEST IAS ACADEMY IN SOUTH INDIA

8) ANERT - Agency for Non-Conventional Energy and Rural Technology:

- Established - 1986
- Kerala (Thiruvananthapuram)
- Development in Non-Conventional energy and Energy Conservation.

9) TERI - Tata Energy and Resource Institute:

- Established - 1974
- Head Quarters - NewDelhi
- Work towards global sustainable development, innovation solution for environment conservation.

SECTION - C (15 Marks)

55. "Eco Clubs in TamilNadu":

- Eco clubs in schools will empower students to participate in meaningful environmental activities and project.
- **Current Status:**
 - ❖ 11469 School eco clubs in all districts.
 - ❖ 50,000 student members.
- **Main Objectives:**
 - ❖ To educate children about their immediate environment and causes for its deterioration.
 - ❖ To impart knowledge on the concepts of eco systems through field visits and demonstrations.
 - ❖ To mobilise students towards scientific enquiry about environmental problems.
 - ❖ To involve them into efforts of preserving environment.
- **Functions:**
 - ❖ Department nominated separate District eco clubs co-ordinator for monitoring the clubs.
 - ❖ Organise tree plantation programmes.
 - ❖ Keep the surroundings clean.
 - ❖ Minimizing the use of water.
 - ❖ Create awareness amongst public and sanitary workers.
 - ❖ Stop indiscriminate burning of waste.
 - ❖ To minimize the use of plastic bags.
 - ❖ To help individuals and social groups for solving problems.
 - ❖ Organise rallies, marches, human chains and street theatre to spread public about environmental awareness.
 - ❖ In the day of Earth Day, World Environment Day etc.
 - ❖ Organise seminars, lectures, debates, workshops.

- ❖ Installation of rain harvesting plant and its importance should reach the public through awareness.
- ❖ Conduct competitions about environment, Bio diversity, pollution, Forest protection, Energy Resources etc.

56. Environmental Awards instituted by Government of TamilNadu:

- For the best efforts and contributions in Environmental Protection, Environmental Management and Environmental Awareness.
- Receivers - NGOs, Institutions, Individuals, Researchers.
- Constituted - 2000
- Distributed on - World Environment Day (June 5)
- Budget - Rs.1.13 lakhs per year for various categories.

Environmental Awareness and Education Awards:

1. Aringar Anna Virudhu - Thiru.C.Muralidhar - Vellore.
2. Sutru Suzhal Sudaroli Virudhu - M/S/Green Trust - Madurai.
3. Sutru Suzhal Seyal Veerar Virudhu - Thiru.T.S.Subramaniyan - Virudhu Nagar.

Environmental and Management Awards (Institution):

1. Dr.Gurusamy Mudaliyar Virudhu - M/S.Srinivasan Sevaigal Arakkattalai (Thirunelveli).
2. Sutru Suzhal Kavalar Virudhu - M/S.Friend In Need India Trust (Nagai)
3. Sutru Suzhal Seyal Veerar Virudhu - M/S.Voluntary Organisation for People Empowerment of Rural Areas by Youth (VETRY) (Tiruppur)

Environmental and Management Awards (Individual):

1. Karma Veerar Kamarajar Virudhu - Dr.P.S.Nagendran, M.B.B.S. (Madurai)
2. Sutru Suzhal Puravalar Virudhu - Thiru.T.Murugan, (Kovai).
3. Sutru Suzhal Seyal Veerar Virudhu - Thiru.S.Davidson Sargunam, (Kanyakumari)

Best Research Paper on Environmental Issues:

- Dr.A.Karthikeyan (Kovai)

[Group II Mains Test - 5 ANSWER KEY DATE : 15.12.2018]

All rights reserved. No part of this booklet may be reproduced, stored in a retrieval system or transmitted, in any form or by any means-electronic, mechanical, photocopying, recording or otherwise, without the permission of the Director, Sathya IAS Academy.



SATHYA IAS ACADEMY

Redefining The Philosophy of Success

BEST IAS ACADEMY IN SOUTH INDIA

Best Short Film Awards Announcement by TamilNadu Government:

- The ad-film should be produced in the state of focusing the environmental issues of state.
- The Director of Environment will have for the legitimate ownership of the ad-films received for awards.
- Should be produced in Tamil language only.
- Should not criticize the Government and its policies.
- To great awareness from public go for Best Advertisement film content announcement by TamilNadu Government in 2018 September.
- The film created over any topic related to Environment Protection.
- Like land, air, water, forest, industrial activities, flora & fauna - theme.
- Telecasting in Public Media.
- First three ad - films will be selected.
- Rs.7 lakhs - First Prize.
Rs.6 lakhs - Second Prize.
Rs.5 lakhs - Third Prize.
- Besides Certificates by Hon'ble Chief Minister of TamilNadu.

57. **IUCN:**

- International Union for Conservation of Nature.
- Founded: October 5, 1948.
- Headquarters: Gland, Switzerland
- **Mission:**
 - ✓ Encourage the society to Conserve Nature.
 - ✓ Ensure the use of Natural resources is equitable and ecologically sustainable.
 - ✓ Red data Book published by IUCN.

IUCN Classification:

1. Extinct (Ex):

- A taxon is Extinct.
- No doubt that last individual has died.
- **Eg:**
 - ✓ Bharattherium
 - ✓ Indian aurochs
 - ✓ Pink - headed duck

2. Extinct in the Wild (EW):

- It is known only to Survive in Cultivation in captivity or naturalized populations.
- At dirunal, seasonal, annual times its range has failed to record an individual.
- **Eg:**
 - ✓ Guam Kingfisher
 - ✓ Black Softshell turtle

3. Critically Endangered (CR):

- Criteria for CR reduction in population.
- Population size (>90%), > 50 mature individuals.
- Quantitative analysis shows the probability of extinction in the wild at least 50% in 10 years.
- **Eg:**
 - ✓ Great Indian Bustard
 - ✓ Gharial Crocodile
 - ✓ Forest Owlet
 - ✓ Pygmy Heg
 - ✓ Indian Vulture
 - ✓ Himalayan Brown Bear
 - ✓ Ganges River Shark
 - ✓ Namdapha Flying Squirrel.

4. Endangered (EN):

- Reduction in population size (70% over 10 years)
- Population fewer than 250 mature individuals.
- Quantitative analysis atleast 20% within 20 years of extinction.
- **Eg:**
 - ✓ One-Horned Rhinoceros
 - ✓ Nilgiri Tahr
 - ✓ Bengal Tigers
 - ✓ Asiatic Lion
 - ✓ Black Bucks
 - ✓ Lion tailed Macaque

5. Vulnerable (VU):

- Reduction in population > 50%.
- Population fewer than 10,000 mature individuals.
- Probability of extinction atleast 10% withing 100 years.
- **Eg:**
 - ✓ Yak
 - ✓ Marbled Cat
 - ✓ Nilgiri Marten
 - ✓ Nilgiri Langar
 - ✓ Sloth Bear
 - ✓ Barasingha

6. Near Threatened (NT):

- Taxons not qualify for CR, EN, VU.
- Widespread of abundant taxa category.
- **Eg:**
 - ✓ Sarus Crane
 - ✓ Himalayan quail
 - ✓ House sparrow
 - ✓ Gharial
 - ✓ Indian Pangolin
 - ✓ Smooth - Coated Otter

[Group II Mains Test - 5 ANSWER KEY DATE : 15.12.2018]

All rights reserved. No part of this booklet may be reproduced, stored in a retrieval system or transmitted, in any form or by any means-electronic, mechanical, photocopying, recording or otherwise, without the permission of the Director, Sathya IAS Academy.



7. Least Concern (LC):

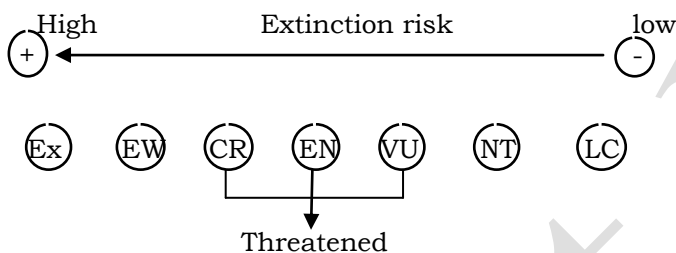
- Not qualify for in the CR, EN, VU list.
- Wide Spread taxa.
- Eg:
 - ✓ Giraffe
 - ✓ Harp Seal
 - ✓ Raccoon
 - ✓ Rea Cyed Tree Frog
 - ✓ Koala

8. Data Deficient (DD):

- Inadequate information to make direct/indirect assessment.
- Eg:
 - ✓ Oceanic white trip shark
 - ✓ Black falcon
 - ✓ Irwin's turtle

9. Not Evaluated (NE):

- A taxon is not evaluated against the criteria.



SECTION - D (30 Marks)

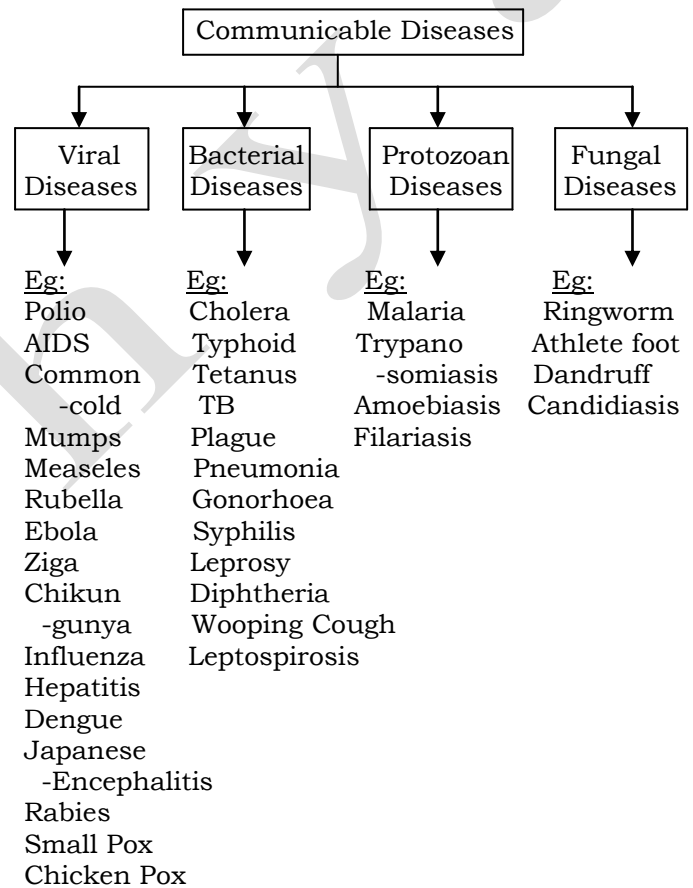
59. Solid Waste Management at Coastal Hamlets of TamilNadu:

- The Department of Environment has proposed to carry out awareness activities in 13 coastal districts of TamilNadu.
- Activities like "Street Plays, Campaign, Dramas, Students and Public Inclusion".
- Department invites "Expression of Interest" from reputed NGOs or Institutions.
- Maximum financial assistance estimated by this department is Rs.32.50 lakhs for entire programme.
- Solid Waste Management Rules - 2000.
- At present Coastal municipalities involved in Solid Waste Management work.
- Awareness campaigns are being conducted to ban the use of plastics
- Pamphlets issued to households and shop vendors to segregate the garbage at the source itself.

- By stating ill effects of handling & disposal of Solid Waste especially plastics, metals, glasses, etc.

60. Communicable Diseases:

- Communicable diseases are caused by micro organisms such as bacteria, viruses, parasites and fung.
- That can spread directly or indirectly from one person to another person.
- Some transmitted through bites from insects or contaminated food and water.



1) Viral Diseases:

(i) Common Cold:

- Cause: Rhino virus
- Symptoms: Cold & Running nose
- Treatment: Cetirizine drugs

(ii) Polio:

- Cause: Contaminated food and water
- Treatment: OPV - Oral Polio Vaccine
IPV - Inactive Polio Vaccine

(iii) Influenza:

- AH₁N₁ Virus



SATHYA IAS ACADEMY

Redefining The Philosophy of Success

BEST IAS ACADEMY IN SOUTH INDIA

- Symptoms: Cold, Cough, Sneezing, Fever, Throat infection, Headache.
- Treatment: Tamiflu Drugs, Antiflu Drugs
- Test: Swab Test.

(iv) AIDS:

- Cause: HIV - Human Immuno Deficiency Virus.
- Symptoms: Weight loss, Diarrhoea, Fever, Less Immunity.
- Treatments: ART Drug - Anti Retro Viral, Zidovudine, Azide Thymidine
- Test: ELISA, Western Plot.

2) Bacterial Diseases:

(i) Typhoid:

- Cause: Salmonella typhi spread by contaminated food & water.
- Symptoms: Fever, Headache, Vomiting, Loose stools.
- Test: Widal Test.
- Vaccine: Typhoid Conjugate Vaccine (TCV).

(ii) TB - Tuberculosis:

- Cause: Mycobacterium Tuberculae
- Spread by: Air
- Symptoms: Pain in Chest areas, Shortness of breath, swollen lymph nodes, night sweat malaise.
- Test: Mantocex test
- Drugs: Streptomycin, Isoniazid, Riflapiin
- Vaccine: BCG - Bacillus Calmette Guerin for New born baby.

3) Protozoan Diseases:

(i) Malaria:

- Cause: Plasmodium Falciporum
- Spread by: Female Anopheles Mosquito
- Symptoms: Chillness, Shivering, Fever, Dark & Concentrated Urination.
- Treatment: Quinone (Cincona tree)

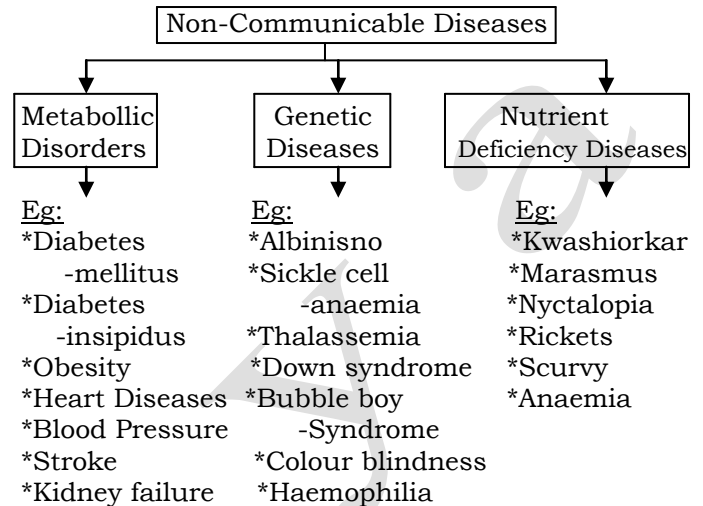
4) Fungal Diseases:

(i) Candidiasis:

- Cause: Candida albicans (Fungus)
- Symptoms: Itching, Bloodstream, Throat thrush.
- Treatment: Antibiotic drugs

Non-Communicable Diseases:

- Diseases that is not transmissible directly from one person to another.
- Classified as Metabolic disorders, Genetic diseases and Nutrient deficiency diseases



1) Metabolic Disorder:

(i) Diabetes Mellitus:

- Low level of insulin in blood.
- Fasting blood Glucose level 70 - 110 mg/dl.
- Normal blood Glucose level 80 - 120 mg/dl.
- Islets of Langerhans contain α & β cells.
 - α Cells - hormone - Glucagon
 - β Cells - hormone - Insulin
- It helps in conversion of Glucose into Glycogen, Glycogen to Glucose.
- Symptoms - Poly urea, Poly dipsia, Poly phagia.

2) Genetic Diseases:

- ✓ Due to genetic defects in genes

(i) Albinism:

- Absence of Melanin in Skin, hairs, eyes.
- Milk White Skin & Photophobia.
- Inherited disorder of melanin metabolism.

3) Nutrient Deficiency Diseases/

Malnutrition:

- ✓ Due to deficiency of Proteins, Carbohydrates, Vitamins, Minerals.

(i) Kwashiorkar:

- Protein Deficiency
- Symptoms: Wastage of Muscles, Enlarged belly, swollen limbs.

(ii) Rickets:

- Vitamin D deficiency
- Source of Vitamin D - Sunlight
- Calcium & Phosphorus Metabolism
- Affects bones & teeth

[Group II Mains Test - 5 ANSWER KEY DATE : 15.12.2018]

All rights reserved. No part of this booklet may be reproduced, stored in a retrieval system or transmitted, in any form or by any means-electronic, mechanical, photocopying, recording or otherwise, without the permission of the Director, Sathya IAS Academy.



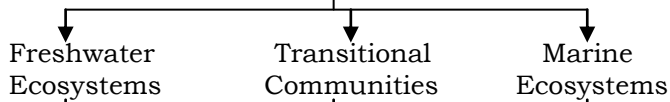
61. **Types of biome:**

Types of Aquatic EcoSystem:

Based on Salinity 2 types:

- Fresh Water EcoSystem
- Marine Ecosystem

Aquatic EcoSystem



1.Lotic:

Ex:

- *Rivers
- *Rivulets
- *Streams
- *Springs
- *Ureeks
- *brooks

2.Lentic

Ex:

- *pools
- *ponds

1.Estuaries

Ex:

- *Kayamkulam

2.Wetlands

=like Bogs,fens
Swamps,marshes

Ex:

- Asthamudi Wetland
- Mangrove forest

1.Shore lines

2.Barriur Islands

Ex:

- *Louisiana barriour Islands

3.Coral Reefs

Ex:

- *Gulf of mannar

4.Open Ocean

Ex:

- *Sharks
- *Sea turthes
- *Sponges

Terrestrial EcoSystem:

- Terrestrial part of biosphere.
- Characterized by climate, vegetation, Animals life and general soil type.
- Climate determines its boundaries.
- Most important climatic factors on temperature and precipitation.

Types:

1) Tundra:

- Region → Lying beyond the Arctic Circle (66.5°N latitude)
→ Found only in Northern Hemisphere & Southern Hemisphere poles.
- Climate → Covered with snow.
→ Average Annual temperature -12°C
- Flora → Lichen
→ Mosses
→ Sedges
- Fauna → Polar bear, Arctic fox, Arctic Weasel, Musk Oxen, Caribour (animals)
→ Moths, Beetles (insects)
→ Swans, Harlequin ducks, Sand pipers, penguins (birds)

2) Taiga:

- Region - Extends across Europe, NorthAmerica and Asia.
- Also called Boreal (or) Coniferous Forest.
- 50° to 55°N to 65° to 70°N latitudes.
- Climate - short wet summer & long cold winter.
- 35 - 60 cm rainfall.
- Flora - pines, spruces, firs
- Fauna - hawks, elks, puma, siberian tiger, Wolverine.

3) Temperate Decidious Forest:

- Region - Mid Latitude areas (30°& 50° North & South of Equator)
- Eastern United States, Europe, China, Japan.
- Flora - Acacia, Cacti, date, Palm, Kikar, babul.
- Fauna - Camel, Antelops, Cape hare, hedgehog, fox.
