

Mrs.T.MALATHI
BVB THINDAL

X BIOLOGY
SCIENTIST ,YEAR ,FINDINGS.

UNIT :12

- 1.The first account of internal structure of plants was published by English Physician **Nehemiah Grew.**
2. **Nehemiah Grew** is known as **Father of Plant Anatomy.**
- 3.**Sachs (1875)** classified tissue system in plants into three types.
- 4.The **mitochondria** were first discovered by **Kolliker in 1857.**
- 5.**Melvin Calvin** an American biochemist discovered chemical pathway for **Photosynthesis.**
6. **Artificial photosynthesis** is a method for producing renewable energy by the use of sunlight.
- 7.Indian scientist **C.N.R. Rao** who was conferred the Bharat Ratna (2013)) *is* also working on artificial photosynthesis to produce **Hydrogen fuel** (renewable energy).
- 8.**Light dependent Reaction or Hill reaction or Light reaction** was discovered by **Robin Hill (1939).**

UNIT:13

- **Pygmy rabbit** was listed as a threatened species in Washinton in **1990**

UNIT:14

- 9.Closed circulatory system was discovered by **William Harvey (1628).**
- 10.**William Harvey** is the Father of Modern Physiology.
- 11.Atrioventricular bundle was discovered by **His (1893).**
- 12.The concept of blood grouping was developed by **Karl Landsteiner(1900).**
- 13.**Karl Landsteiner** identified blood groups **A, B and O.**

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14.**AB** blood group was recognized by Decastello and Steini (1902).

15.**Rh factor** was discovered by Landsteiner and Wiener in 1940 in Rhesus monkey.

UNIT:16

16.The term **auxin** was introduced by Kogl and HaagenSmith (1931).

17.Charles Darwin (1880), observed unilateral growth and curvature of canary grass (*Phalaris canariensis*) coleoptiles.

18.This 'influence' was identified as Auxin by Went.

19.Frits Warmolt Went (1903– 1990), a Dutch biologist demonstrated the existence and effect of auxin in plants.

20.Kurosawa (1926) observed **Bakanae disease** or **foolish seedling disease** in rice crops .

21.Thomas Addison is known as **Father of Endocrinology**.

22.English physiologists W. M. Bayliss and E. H. Starling introduced the term **hormone** in 1909.

23.The hormone secretin was first discovered by Edward C. Kendal in 1914 first crystallised thyroxine hormone.

24.Harrington and George Barger identified the molecular structure of **thyroxine** in 1927.

25.Human insulin was first discovered by Fredrick Banting, Charles Best and MacLeod in 1921.

UNIT: 17

- **India** has been one of the first country in the world to launch the nation wide **family planning programme in 1952**

UNIT:18

26.Mendel (1822-1884) was an Austrian monk who discovered the basic principles of heredity.

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27.**Punnett square** is a checker board form devised by a British geneticist **R.C.Punnett** for study of genetics.

28.**T.H. Morgan** was awarded Nobel Prize in 1933 for determining the role of chromosomes in **heredity**.

29.The term '**chromosomes**' was first coined by **Waldeyer** in 1888.

30.The most accepted model of DNA is the double helical structure of **James Watson and Francis Crick**.

31.**X-ray diffraction** studies of DNA obtained by **Rosalind Franklin and Maurice Wilkins**.

32.In appreciation of the discoveries on the molecular structure of nucleic acids **Watson, Crick and Wilkins** were awarded Nobel prize for Medicine in **1962**.

33.**Erwin Chargaff** states that in DNA, the proportion of adenine is always equal to that of thymine, and the proportion of guanine always equal to that of cytosine.

34.The term mutation was introduced by **Hugo De Vries** in **1901**.

35. **Hugo De Vries** observed phenotypic changes in the evening primrose plant, **Oenothera lamarckiana**.

36.**Down's syndrome** was first identified by a doctor named **Langdon Down** in **1866**.

UNIT: 19

37.**Biogenesis** was speculated by **Louis Pasteur (1862)** that **life originates from preexisting life**.

38.**Chemical Evolution of Life** idea was developed by **Oparin (1922)** and **Haldane (1929)**.

39. **Leonardo da Vinci** is called as the **Father of Palaeontology**.

40.**Biogenetic law** or **Recapitulation theory** was given by The **Ernst Haeckel**.

41.Natural changes occurring is explained through the theories of evolution as proposed by **Lamarck and Darwin**.

42.**Jean Baptiste Lamarck (1744-1829)** was a French naturalist, well known for his theory of evolution.

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43.Lamarck's theory of evolution was published in '**Philosophic Zoologique**' in the year **1809**.

44.Charles Darwin (1809-1882) was one of the great naturalist and philosopher of 18th Century.

45.Dr Henslow was asked to nominate a young naturalist for the voyage.

46.Darwin published his observations and conclusions under the name '**Origin of species**' in **1859**.

47.Kaspar Maria Von Sternberg is the "**Father of Paleobotany**" (1761–1838) .

48.Birbal Sahani is the "**Father of Indian Paleobotany**" (1891–1949).

49.**Radioactive carbon(C₁₄) dating method** was discovered by W.F. Libby (1956).

47.The term Ethnobotany was coined by **J.W. Harshberger** in **1895**

UNIT:20

50.Dr. Norman E. Borlaug, an American agronomist the "**Father of the Green Revolution**".

51.Dr. Norman E. Borlaug received the Nobel Peace Prize in 1970.

52.In India Dr. M. S. Swaminathan joined with Dr.Borlaug in bringing Green Revolution by introducing Mexican wheat varieties.

53.Dr. G. Nammalvar (1938-2013) was a Tamil agricultural scientist, environmental activist and organic farming expert.

54..Dr. G. Nammalvar founded Nammalvar Ecological Foundation for Farm Research and Global Food Security Trust (NEFFFRGFSTVanagam) to create public awareness about the benefits of organic farming.

55.(Dr. M.S. Swaminathan) Dr. Mankombu Sambasivan Swaminathan is an Indian scientist known for his leading role in India's Green Revolution.

56.Dr. M.S. Swaminathan is aptly called as the "**Father of Indian Green Revolution**".

57.**Dolly** was the first cloned female sheep, developed by Dr. Ian Wilmut and his colleagues at the Roslin Institute, Scotland in July 1996.

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58. **Eli Lilly** and Company, United States, in 1979 first started commercial production of human insulin by using rDNA technology.

59. **DNA fingerprinting** technique was developed by **Alec Jeffrey**.

UNIT:21

60. **Dr. Suniti Solomon**, pioneered HIV research and treatment in India

61. **NCPCR** was set up in **March 2007** under the Commissions for Protection of Child Rights -**CPCR**

UNIT:22

62. **Rathika Ramasamy**, a native of Venkatachalapuram village, Theni District in Tamilnadu was the first Indian woman.

63. **kallanai Dam**, also known as **Grand Anicut**, is the fourth oldest dam in the world, constructed by **King Karikala Chola**

ABBREVIATIONS

- ◆ Adenosine Triphosphate-**ATP**,
- ◆ Adenosine Diphosphate- **ADP**,
- ◆ Nicotinamide Adenine Dinucleotide -**NAD**,
- ◆ Nicotinamide Adenine Dinucleotide Phosphate-**NADP** ,
- ◆ Central Nervous System- **CNS**,
- ◆ Peripheral Nervous System- **PNS**,
- ◆ Autonomic Nervous System-**ANS**,
- ◆ Red blood corpuscles -**RBC**,
- ◆ White blood corpuscles-**WBC**,
- ◆ Atrioventricular -**AV**,
- ◆ Sino-atrial -**SA**,
- ◆ Agglutinogens or Antigens -**Ag**,
- ◆ Agglutinins or Antibodies -**Ab**,

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- ◆ Essential Fatty Acids -**EFAs**,
- ◆ Electroencephalogram -**EEG**,
- ◆ Cerebrospinal fluid -**CSF**,
- ◆ Abscisic Acid -**ABA**,
- ◆ Indole – 3 - Acetic Acid-**IAA**,
- ◆ 2,4 Dichlorophenoxy Acetic Acid-**2,4D**,
- ◆ Phenyl Acetic Acid-**PAA**,
- ◆ Indole 3 Acetonitrile- **IAN**,
- ◆ Indole 3 Butyric Acid- **IBA**,
- ◆ α -Naphthalene Acetic Acid -**NAA**,
- ◆ 2,4,5 Trichlorophenoxy Acetic Acid-**2, 4, 5-T**,
- ◆ Growth hormone -**GH**,
- ◆ Thyroid stimulating hormone -**TSH**,
- ◆ Adrenocorticotrophic hormone -**ACTH**,
- ◆ Gonadotropic hormones -**GTH**,
- ◆ Follicle stimulating hormone -**FSH**,
- ◆ Luteinizing hormone -**LH**,
- ◆ Prolactin -**PRL**,
- ◆ Anti diuretic hormone -**ADH**,
- ◆ Triiodothyronine- **T₃** ,
- ◆ Tetraiodothyronine or Thyroxine -**T₄**
- ◆ Basal Metabolic Rate -**BMR**,
- ◆ World Health Organization -**WHO**,
- ◆ Reproductive and Child Health Care -**RCH Programme**,
- ◆ Maternal and child health care -**MCH**,
- ◆ Intra-Uterine Devices -**IUDs**,,

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- ◆ sexually transmitted diseases -**STD**,
- ◆ Urinary Tract Infection -**UTI**,
- ◆ Dee-geo-woo-gen -**DGWG**,
- ◆ Nammalvar Ecological Foundation for Farm Research and Global Food Security Trust -**NEFFFRGFSTVanagam**,
- ◆ International Rice Research Institute -**IRRI**,
- ◆ recombinant DNA-**rDNA**,
- ◆ Variable number of tandem repeat sequences -**VNTRs** ,
- ◆ genetically modified Organism- **GMO**,
- ◆ *Bacillus thuringiensis* -**Bt**,
- ◆ Protection of Children from Sexual Offence- **POCSO**,
- ◆ The National Commission for Protection of Child Rights -**NCPCR**,
- ◆ Commissions for Protection of Child Rights -**CPCR**,
- ◆ Insulin Dependent Diabetes Mellitus -**IDDM**,
- ◆ Non-Insulin Dependent Diabetes Mellitus -**NIDDM**,
- ◆ Body mass index -**BMI**,
- ◆ High Density Lipoprotein- **HDL** or "**good**" cholesterol ,
- ◆ Low Density Lipoprotein - **LDL** or **bad cholesterol**,
- ◆ Cardiovascular disease -**CVD**,
- ◆ Coronary heart disease -**CHD**,
- ◆ Acquired Immunodeficiency Syndrome-**AIDS**,
- ◆ Enzyme Linked Immunosorbent Assay- **ELISA**,
- ◆ NACO National AIDS Control Organization- **NACO**,
- ◆ Non- Governmental Organizations -**NGO'S**,
- ◆ Human Immuno Virus-**HIV**,
- ◆ Indian Board for Wild Life -**IBWL** ,

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- ◆ World Wildlife Fund -**WWF**,
- ◆ World Conservation Union -**WCN**,
- ◆ International Union for Conservation of Nature and Natural resources -
IUCN,
- ◆ Convention of International Trade in Endangered Species -**CITES**,
- ◆ Bombay Natural History Society -**BNHS**,
- ◆ Liquefied Petroleum Gas-**LPG**,
- ◆ Compact Fluorescent Lamps -**CFL**,
- ◆ Light Emitting Diode -**LED**,
- ◆ Polyvinyl Chloride -**PVC**,
- ◆ ultraviolet -**UV**,
- ◆ **4R approach - Reduce, Reuse, Recovery and Recycle**