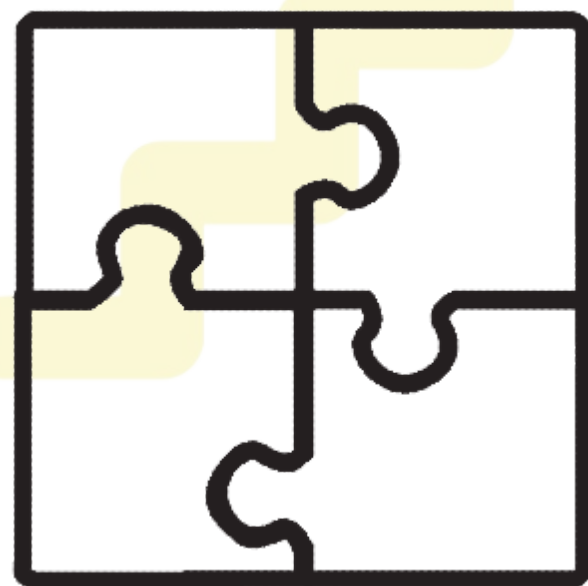


ANSWERS



I. 5 marks questions

i. Dr. Ravi Maruthachalam -> Dresden Botanical Garden

Dr. Ravi Maruthachalam - Arabidopsis - Gustav Heynhold - Dresden botanical garden

Explanation: Dr. Ravi Maruthachalam is a plant biologist who uses Arabidopsis as a model organism for his research. Gustav Heynhold placed Arabidopsis (then Arabis thaliana) in its present genus. Gustav Heynhold has worked in Dresden Botanical Garden.

ii. Lungs -> Sialidase

Lungs - COPD - Thick mucus - Sialidase

Explanation: COPD is a chronic inflammatory lung disease. The sputum produced during COPD are thick. Sialidase and endo- β -galactosidase activity has been proved to alter the composition of mucus.

iii. iGEM -> Jennifer Doudna

iGEM - Boston - Harvard Medical School - Jennifer Doudna

Explanation: iGEM culminates in an event called the Giant Jamboree, which was held in Boston till 2020. Harvard Medical School is situated in Boston. Jennifer Doudna is an alumnus of Harvard Medical School.

iv. Artemisinin -> Tay Sach's Disease

Artemisinin - Malaria - Sickle Cell Anemia - Autosomal recessive disorder - Tay Sach's Disease

Explanation: Artemisinin is a drug used for the treatment of Malaria. People with Sickle-cell anemia are resistant to malaria. Sickle cell anemia is an autosomal recessive genetic disorder. Tay Sach's disease is also an example of an autosomal recessive genetic disorder.

v. Holliday Junction -> The Science of Human Progress

Holliday junction - Robin Holliday - The Science of Human Progress

Explanation: Holliday junctions are the basic structural building blocks in DNA nanotechnology, named after Robin Holliday. The Science of Human Progress is a book authored by Robin Holliday.

II. 10 marks questions

i. Tardigrade -> Galileo Galilei

Tardigrade - Outer space - Vacuum - Evangelista Torricelli - Galileo Galilei

Explanation: Tardigrades are the first known animal to survive after exposure to outer space. Outer space is a vacuum. Evangelista Torricelli created the first laboratory vacuum in 1643. And, he was a student of Galileo Galilei.

ii. SELEX -> Stroke

SELEX - 1990 - Joseph Murray - Stroke

Explanation: SELEX (Systematic Evolution of Ligands by Exponential Enrichment). It was first introduced in 1990. Joseph Murray received Nobel Prize for Physiology and Medicine in 1990. Joseph Murray died of a stroke.

ii. Taq Polymerase -> Scurvy

Taq Polymerase - PCR - Hoffman La Roche - Vitamin C - Scurvy

Explanation: Taq Polymerase enzyme is used in PCR. Hoffman La Roche currently holds the patent rights for PCR. Hoffman La Roche was also the first company to mass-produce synthetic Vitamin C. Deficiency of Vitamin C leads to Scurvy.

iv. GFP -> Sponge

GFP - Jellyfish - Medusozoa - Linear mitochondrial DNA - Calcarea - Porifera - Sponge

Explanation: GFP (Green Fluorescent Protein) was first isolated from Jellyfish, which belongs to the clade- Medusozoa. Medusozoa and Calcarea are the only two clades with linear mitochondrial DNA. Calcarea is a clade in the kingdom Porifera of which sponges are a part.

v. Nepetalactone -> Green Algae

Nepetalactone - Aphid - Sex pheromone - Volvox - Green Algae

Explanation: Nepetalactones are produced by *Nepeta cataria*. They are also produced by aphids, in which they function as sex pheromones. Sexual development in green algae *Volvox* is triggered by tiny concentrations of a glycoprotein pheromone.