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## Glossary

<b>Abscission zone</b>	A region near the base of petiole of leaf which contains abscission layer.
<b>Absorption Spectrum</b>	A curve obtained by plotting the amount of absorption of different wavelengths of light by a pigment is called its absorption spectrum.
<b>Acetyl CoA</b>	Small, water-soluble metabolite comprising an acetyl group linked to coenzyme A (CoA).
<b>Action Spectrum</b>	A graphic representation showing the rate of photosynthesis at different wavelengths of light is called action spectrum
<b>Active site</b>	Region of an enzyme molecule where the substrate binds and undergoes a catalyzed reaction.
<b>Aeroponics</b>	A technique of growing plants suspended over the nutrient solution in a mist chamber. Nutrient sprayed by motor driven rotor on the roots.
<b>Agar</b>	Jelly-like substance, derived from red algae
<b>Akinetes</b>	Thick walled, dormant, non motile asexual spores.
<b>Aleurone</b>	Outer layer of the endosperm
<b>Allelopathy</b>	The chemical substances released by one plant species which affect or benefit another plant
<b>Amphicribal/ Hadrocentric</b>	Xylem in the centre with phloem surrounding it. Example: Ferns (Polypodium)
<b>Amphivasal Leptocentric</b>	/ Phloem in the centre with xylem surrounding it. Example: Dragon plant – Dracena and Yucca
<b>Anabolic</b>	It is an enzyme catalyzed reaction in a cell that involves synthesis of complex molecules from simple molecules which uses energy.
<b>Anamorph</b>	Asexual or imperfect state of fungi
<b>Anisogamy</b>	Fusion of morphologically and physiologically dissimilar gametes
<b>Apical cell theory</b>	Single apical cell growing into whole plant
<b>Apogamy</b>	Formation of sporophyte from the gametophytic tissue without the fusion of gametes.
<b>Apospory</b>	Development of the gametophyte from the sporophyte without the formation of spores
<b>Axil Parenchyma</b>	Parenchyma arranged longitudinally along the axis
<b>Balausto</b>	Fleshy in dehiscent fruit
<b>Basal body</b>	Structure at the base of cilia and flagella from which microtubules forming the axoneme radiate
<b>Biosphere</b>	The region of earth on which life exist
<b>Buffer</b>	A solution of the acid and base form of a compound that undergoes little change in pH when small quantities of strong acid or base are added.
<b>Callose</b>	Sieve pores are blocked by substances called callose
<b>Carbonic acid</b>	A weak acidic solution of carbon-di-oxide dissolved in water
<b>Carcinogen</b>	Any chemical or physical agent that can cause cancer when cells or organisms are exposed to it.
<b>Catabolic</b>	It is an enzyme catalyzed reaction in a cell that involves degradation of molecules into simple subunits which release energy.
<b>Chelating agents</b>	A chelate is the soluble product formed when certain atoms in an organic ligand donate electrons to the cation.
<b>Chemotaxonomy</b>	Classification based on the biochemical constituents of plants
<b>Chlorosis</b>	Breakdown of chlorophylls leads to yellowing of leaves
<b>Clades</b>	Group of species comprising common ancestor and its descendants
<b>Cladistics</b>	Methodology used to classify organisms into monophyletic group

<b>Closed vascular bundle</b>	Cambium absent between xylem and phloem Example: Monocot stem
<b>Codon</b>	Sequence of three nucleotides in DNA or mRNA that specifies a particular amino acid during protein synthesis; also called triplet
<b>Coenocytic condition</b>	Aseptate, multinucleate condition
<b>Coenzyme</b>	A non-protein molecule involved in enzyme catalyzed reactions serves as transfer of protons or electrons between various molecules
<b>Colloidal</b>	An evenly distributed mixture of two different particles in a system without losing its own properties.
<b>Dalton</b>	Unit of molecular mass approximately equal to the mass of a hydrogen atom ( $1.66 \times 10^{-24}$ g)
<b>Deamination</b>	The enzymatic removal of an amino group from an amino acid to form its corresponding keto acid.
<b>Desiccation tolerance</b>	Ability of plants which can tolerate extreme water stress without being killed.
<b>Drought resistance</b>	Capacity of a plant to limit and control consequences of water deficit.
<b>EDTA</b>	Ethylene Diamine Tetra Acetic acid, chelating agent makes iron uptake possible by forming soluble complex in an alkaline soil.
<b>Endergonic</b>	A chemical reaction with a positive free energy charge or ATP utilizing reactions.
<b>Endosperm</b>	Nutritive tissue for the embryo
<b>Endospore</b>	Thick walled, resting spores
<b>Eusporangiate</b>	Sporangium formed from a group of initials
<b>Exergonic</b>	A chemical reaction with a negative free energy charge or ATP producing reactions.
<b>Extra stellar ground tissue</b>	Tissues outside the stele
<b>Fibre-Tracheids</b>	Transitional form between fibre and tracheids
<b>Fluorescence</b>	Emission of light by a substance that has absorbed light in the form luminescence.
<b>Fossil</b>	The remains or impression of plant or animal of the past geological age
<b>Gametophyte</b>	The haploid plant body
<b>Gelatin</b>	An animal-based product used as a gelling agent.
<b>Genome</b>	Complete set of genes in an organism
<b>Germ</b>	Protein rich embryo
<b>Granum</b>	A stack of thylakoid in a stroma of chloroplast
<b>Hadrome</b>	Xylem-by Haberlandt
<b>Halophytes</b>	Plants native to saline soils and complete their life cycle
<b>Heliophytes</b>	Plants which are adapted to light
<b>Heterospory</b>	Production of spores of different sizes: megaspores and microspores
<b>Histogenesis</b>	Differentiate tissues from undifferentiated cells of meristem
<b>Indeterminate growth</b>	Plants grow throughout their life
<b>Intrastelar ground tissue</b>	Tissues within the stele
<b>Isomerisation</b>	Rearrangement of atomic groups within the same molecule without any loss or gain of atoms.
<b>Karyogamy</b>	Fusion of nucleus
<b>Karyotype</b>	Number, sizes, and shapes of the entire set of metaphase chromosomes of a eukaryotic cell.



<b>Km</b>	A parameter that describes the affinity of an enzyme for its substrate and equals the substrate concentration that yields the half-maximal reaction rate;
<b>Leptome</b>	Phloem – by Haberlandt
<b>Leptosporangiate</b>	Sporangium formed from a single initial
<b>Lumen</b>	Space inside the tracheid/vessel/fibres
<b>Malate Shuttle mechanism</b>	It is a biochemical system for translocating electrons produced from glycolysis across inner membrane of mitochondrion for oxidative phosphorylation.
<b>Mass meristem</b>	Meristem which divides in all planes
<b>Microgreens</b>	Young vegetable greens add flavour in culinary
<b>Monograph</b>	Complete account of a taxon of any rank
<b>Monosulcate</b>	Pollen grain with single furrow or pores
<b>Mycobank</b>	Online database documenting new mycological names
<b>Necrosis</b>	Death of tissue
<b>Non heme iron</b>	An iron porphyrin prosthetic group of heme proteins from plant origin
<b>Nucleoid</b>	Genetic material of bacterium
<b>Nutation</b>	The growing stems of twiner and tendrils show automatic movement
<b>Oogamy</b>	Fusion of morphologically and physiologically dissimilar gametes
<b>Open vascular bundle</b>	Cambium present between xylem and phloem Example: Dicot stem
<b>Oxidation</b>	Water is oxidised into Oxygen (loss of electrons)
<b>PAR</b>	The wavelength at which the rate of photosynthesis is more is called 'Photosynthetically Active Radiations' which falls between 400 to 700 nm.
<b>Parthenocarphy</b>	Fruit developed without fertilization
<b>Pendulous</b>	Hanging downward loosely or freely (like catkin)
<b>Petrifaction</b>	A process of fossil formation through infiltration of minerals over a long period
<b>pH</b>	A measure of the acidity or alkalinity of a solution defined as the negative logarithm of the hydrogen ion concentration in moles per liter
<b>Phosphorescence</b>	Phosphorescence is the delayed emission of absorbed radiations.
<b>Photolysis</b>	Splitting of water molecules by light which generate protons, electrons and oxygen.
<b>Photon</b>	Light is electromagnetic radiant energy and travels as tiny particles called photons. A discrete Physical unit of light energy.
<b>Photoperiodism</b>	The response of plants to the photoperiod expressed in the form of flowering.
<b>Phylogeny</b>	Evolution of group of organisms
<b>Phytochrome</b>	A photo reversible proteinaceous plant pigment in very low concentration that absorbs red and far red light which controls flowering.
<b>Pistillode</b>	Sterile pistil
<b>Pitted thickening</b>	Uniformly thick except at their pits
<b>Plasmogamy</b>	Fusion of cytoplasm
<b>Pluriocular</b>	An ovary with two or more locus
<b>Preparatory phase</b>	First half of glycolysis comprising five enzymatic reactions in which one molecule of glucose splitting into two molecules of glyceraldehyde 3 phosphate with consumption of two ATP molecules.
<b>Prickles</b>	Stiff and sharp outgrowth
<b>Prophage</b>	The integrated phage DNA with host DNA

<b>Protologue</b>	Set of information associated with the scientific name of a taxon at its first valid publication containing the entire original material regarding the taxon
<b>Quantasome</b>	Morphological expression of physiological photosynthetic units, located on the inner membrane of thylakoid lamellae. Act as photosynthetic unit contains 200 to 300 chlorophyll molecules.
<b>Quantum</b>	The energy contained in a photon is represented as quantum
<b>Quantum requirement</b>	The number of photons or quanta required to release one molecule of oxygen during photosynthesis
<b>Quantum yield</b>	The number of oxygen molecules produced per quantum of light absorbed.
<b>Quiescent centre concept</b>	Inactive region of root meristem
<b>Rachilla</b>	Central axis of a spikelet
<b>Radial vascular bundles</b>	Xylem and phloem present on different radii
<b>Ray Parenchyma</b>	Parenchyma cells arranged in radial rows
<b>Redox reactions</b>	Oxidation (loss of electrons) and Reduction (gain of electrons) reactions are called redox reactions.
<b>Reduction</b>	CO <sub>2</sub> is reduced into Carbohydrates (gain of electrons)
<b>Rib-meristem</b>	Meristem which divides anticlinally in two planes
<b>RUBISCO</b>	Enzyme responsible for fixation of Carbon dioxide, the most abundant protein (Ribulose 1,5 bisphosphate Carboxylase Oxygenase)
<b>Salt stress</b>	Adverse effects of excess mineral salts on plants
<b>Sap</b>	It is a fluid consist of water and dissolved minerals
<b>Slime body</b>	A special protein (Phloem Protein) in sieve tubes
<b>Sporophyte</b>	Diploid plant body
<b>Stellate hairs</b>	Star shaped hairs
<b>Stratification</b>	A process of breaking the dormancy of some plants resulting from chilling requirements
<b>Subsidiary cells</b>	Surrounding guard cells in the leaf epidermis
<b>Sucrose</b>	Non-reducing disaccharide composed of glucose and fructose
<b>Teloemorph</b>	Sexual or perfect state of the fungi
<b>Thallospores</b>	Asexual spores formed due to the fragmentation of hyphae
<b>Trichoblasts</b>	One type of epidermal cells that is also called short cell
<b>Trichomes</b>	Unicellular or multicellular appendages
<b>Triplicate</b>	Pollen grain with three furrows or pores
<b>Tunica-carpus theory</b>	Two zones of apical meristem Tunica and Carpus
<b>X-Ray crystallography</b>	Most commonly used technique for determining the three-dimensional structure of macromolecules (particularly proteins and nucleic acids) by passing x-rays
<b>Xylos</b>	Wood
<b>Zoospore</b>	Motile, asexual spores
<b>Zygospore</b>	Thick walled diploid resting spores

## English – Tamil Terminology

Abscission	உதிர்தல்	Cavitation	குமிழாதல்
Abscission zone	உதிரும் அடுக்கு	Centrifugal	மையம் விலகியது
Absorption spectrum	ஒளி ஈர்ப்பு நிறமாலை	Centripetal	மையம் நோக்கியது
Acropetal succession (arrangement)	நுனி நோக்கிய வரிசை	Channel protein	கால்வாய் புரதம்
Action spectrum	ஒளி செயல்திறன் நிறமாலை	Chelating agents	பிணைக்கும் காரணி
Activated diffusion	மேம்படுத்தப்பட்ட பரவல்	Chemiosmotic theory	வேதி சவ்வூடு பரவல் கோட்பாடு
Active transport	ஆற்றல்சார் கடத்தல்	Chlorophyll	பச்சையம்
Adhesion	ஒட்டிணைவு	Chloroplast	பசுங்கணிகம்
Aeroponics	காற்றுடக வளர்ப்பு	Chlorosis	பச்சைய சோகை
Aggregatte fruit	திரள்கனி	Cladogram	கிளை வரைபடம்
Akinetes	உறக்க நகராவித்து	Closed collateral vascular bundles	மூடிய ஒருங்கமைந்த வாஸ்குலக் கற்றைகள்
Anabolic	சேர்க்கைச் செயல்	Coenocytic	பல்உட்கரு நிலை
Anamorph	பாலிலாநிலை	Cohesion	கூட்டிணைவு
Anisogamy	சமமற்ற கேமீட்களின் இணைவு	Collateral vascular bundles	ஒருங்கமைந்த வாஸ்குலக் கற்றைகள்
Annual rings	ஆண்டு வளையங்கள்	Companion cells	துணைச் செல்கள்
Antenna molecules	ஏற்பி மூலக்கூறுகள்	Compensation point	ஈடுசெய்யும் புள்ளி
Anthrophytes	பூக்கும் தாவரங்களின் முன்னோடிகள்	Concentration gradient	செறிவு சரிவு வாட்டம்
Apical cell theory	நுனி செல் கொள்கை	Concentric vascular bundles	சூழமைந்த வாஸ்குலக் கற்றைகள்
Apogamy	பாலிணைவின்மை	Conjugation	இணைவு
Apospory	குன்றலில்லா வித்துத்தன்மை	Core complex	மைய ஆதார கூட்டமைப்பு
Arbitrary marker	தன்னிச்சையான குறிப்பான்	Cotyledons	விதையிலைகள்
Arithmetic growth	எண் கணித வளர்ச்சி	Critical concentration	தீர்வுக் கட்ட செறிவு
Ascent of sap	சாநேற்றம்	Day neutral plants	நாள் நடுநிலை தாவரங்கள்
Assimilatory power	தன்மயமாக்கும் ஆற்றல்	Deamination	அமினோ நீக்கம்
Autonomous movement	தன்னிச்சையான அசைவுகள்	Dendrochronology	மர வயதியல்
Autumn wood or late wood	குளிர்க்காலக் கட்டை அல்லது பின்பருவக் கட்டை	Deplasmolysis	பிளாஸ்மா சிதைவு மீட்சி
Axial parenchyma	அச்சு பாரங்கமை	Dicarboxylic acid pathway	டைகார்பாக்சிலிக் அமில சூழ்சி
Basipetal succession	அடி நோக்கிய வரிசை	Die back of shoot	தண்டின் நுனி அடி இறப்பு
Bicollateral vascular bundle	இருபக்க ஒருங்கமைந்த வாஸ்குலக் கற்றை	Diffusion	பரவல்
Biosequestration	உயிர்வளி தனிமைப்படுத்துதல்	Dimorphic chloroplast	இருவடிவ பசுங்கணிகம்
Biosphere	உயிர்க்கோளம்	Drought resistance	வறட்சியை எதிர்ப்பவை
Biosynthetic phase	உயிர்மதோற்ற நிலை	Dry dehiscent fruit	உலர் வெடிகனி
Brown heart disease	மைய கருக்கல் நோய்	Dry indehiscent fruit	உலர் வெடியாக்கனி
Buttress root	பலகை வேர்	Efflux	அயனி வெளிப்புகல்
Callus	திசுத்திரள்	Electro magnetic spectrum	மின்காந்த நிறமாலை
Carbon di oxide compensation point	கார்பன்-டை-ஆக்ஸைட் ஈடு செய்யும் புள்ளி	Electron transport chain	எலக்ட்ரான் கடத்து சங்கிலி
Carbon fixation	கார்பன் நிலைநிறுத்தம்	Embryo	கரு
Carrier protein	தாங்கிப் புரதம்/கொண்டு செல்லும் புரதம்	Emerson's enhancement effect	எம்ர்சனுடைய மேம்படுத்தப்பட்ட விளைவு
Catabolic	சிதைக்கும் செயல்	Endergonic	ஆற்றல் ஏற்கும் வினை
Catalytic amination	வினையூக்க அமைனோவாக்கம்	Endosperm	கருவூண்திசு
		Endospores	அகவித்துகள்

Endosymbiotic hypothesis	அக கூட்டுயிர் கோட்பாடு
Eukaryote	உண்மை உட்கரு உயிரி
Eusporangiate	உண்மை வித்தகத்தன்மை
Eutrophication	மிகை ஊட்ட நிலை
Exarch Xylem	வெளிநோக்கு சைலம்
Exergonic	ஆற்றல் வெளியிடும் வினை
Extinction point	அழிவுப் புள்ளி
Fermentation	நொதித்தல்
Fibre Tracheids	நார் டிரக்கீடுகள்
Flourescence	உடன் ஒளிர்ந்தல்
Flux	அயனிபுகல்
Fossil	தொல்லுயிரெச்சம்
Funicle	சூல்காம்பு
Gametophyte	கேமீட்டக தாவரம்
Gene marker	மரபணு குறிப்பான்
Genome	மரபணுத் தொகுப்பு
Geocarpic fruit	புவிபுகை கனி/நிலத்தகத்துக் கனி
Geometric growth	ஜியோமித வளர்ச்சி
Geophytes	நிலத்தகத்துத் தூண்சேர் தாவரம்
Grand period of growth	மொத்த வளர்ச்சிக் காலம்
Growth rate	பெரும வளர்ச்சி வீதம்
Gynobasic	சூற்பை அடி சூலகத்தண்டு
Halophiles	உவர்நாட்டவயிரிகள்
Halophytes	உவர்நிலை தாவரங்கள்
Heart wood	வைரக்கட்டை
Heliophytes	ஒளியை விரும்பும் தாவரங்கள்
Heterospory	மாற்று வித்தகத்தன்மை
Histogen theory	ஹிஸ்டோஜன் கொள்கை
Histogenesis	ஹிஸ்டோஜெனிசிஸ்
HMP shunt	HMP மாற்றுவழிப் பாதை
Homeostasis	சமச்சீர் நிலை
Hydathode	நீர்க்கசிவுத் துளை
Hydrochory	நீர்மூலம் பரவுதல்
Hydroponics	நீர் ஊடக வளர்ப்பு
Imbibition	உள்ளீர்த்தல்
Indeterminate	வரம்பற்ற வளர்ச்சி
Influx	அயனி உட்புகல்
Interveinal chlorosis	நரம்பிடை பச்சைய சோகை
Irritability	உறுத்துணர்ச்சி
Isogamy	ஒத்த கேமீட்களின் இணைவு
Isomerisation	மாற்றியமாதல்
Karyogamy	உட்கரு இணைவு
Karyokinesis	காரியோகைனசிஸ்
Lag phase	உருவாக்க நிலை

Leaf primodium	இலைத்தோற்றுவி
Legume / Pod	விதைப்பை
Lenticel	பட்டைத்துளை
Leptosporangiate	மெலி வித்தகத்தன்மை
Light harvesting complex	ஒளி அறுவடை கூட்டமைப்பு
Link reaction	இணைப்பு வினை
Log phase	நீட்சியுறு நிலை
Macro nutrients	பெரும ஊட்ட மூலங்கள்
Malate Shuttle mechanism	மாலேட் திருப்பு செயல்
Mass meristem	பொருண்மை ஆக்குதிக
Matric potential	ஊடக உட்திறன்
Maturation promoting factor (MPF)	முதிர்ச்சியை ஊக்கப்படுத்தும் காரணி
Merosity	எண்ணிக்கை அமைவு
Metabolism	வளர்சிதைமாற்றம்
Micro nutrients	நுண் ஊட்ட மூலங்கள்
Middle Lamella	இடைமென் அடுக்கு
Mineral Nutrition	கனிம ஊட்டம்
Mitochondrial matrix	மைட்டோகாண்ட்ரிய உட்கூழ்மம்
Monograph	தனிக்கட்டுரை
Multiple fruit	கூட்டுக்கனி
Mycobank	பூஞ்சை வங்கி
Necrosis	நைவுப் புண்கள்
Nitrate Assimilation	நைட்ரேட் தன்மயமாதல்
Nitrogen metabolism	நைட்ரஜன் வளர்சிதை மாற்றம்
Non-porous wood	துளைகளற்ற கட்டை
Nuclear envelope	நியூக்ளியர் உறை
Nuclear organizer	நியூக்ளியோலார் அமைப்பான்கள்
Nucleoid	உட்கரு ஒத்த அமைப்பு
Nutation	சுழலசைவு
Obligate parasite	கட்டாய ஒட்டுண்ணி
Oogamy	முட்டை கருவுறுதல்
Open vascular bundle	திறந்த வாஸ்குலக் கற்றை
Oxygen evolving complex (OEC)	ஆக்ஸிஜன் உருவாக்கும் கூட்டமைப்பு
Paper chromatography	வண்ண பிரிகைதாள் வரைப்படம்
Paratonic movement	தூண்டப்படும் அசைவுகள்
Parthenocarpy	விதையிலாக் கனி
Passive transport	ஆற்றல்சாரா கடத்தல்
Pay off phase	விளை நிலை
Pendulous	தொங்குகின்ற
Pericarp	கனி உறை
Petrification	கல்லாதல்
Phosphorescence	நின்றொளிர்ந்தல் / தாமத மறு ஒளிர்ந்தல்



Photo chemical phase	ஒளி வேதிநிலை
Photo oxidation phase	ஒளி ஆக்ஸிஜனேற்ற நிலை
Photo respiration	ஒளி சுவாசம்
Photolysis	ஒளியின் நீராற் பகுப்பு
Photon	ஒளித்துகள்
Photoperiodic induction	ஒளிக் காலத்துவ தூண்டுதல்
Photoperiodism	ஒளிக்காலத்துவம்
Photophosphorylation	ஒளி பாஸ்பரிகரணம் / ஒளி பாஸ்பரஸ் சேர்க்கை
Photosynthetic carbon reduction cycle	ஒளிச்சேர்கையின் கார்பன் ஒடுக்க சுழற்சி
Photosynthetic unit (Quantasome)	ஒளிச்சேர்க்கை அலகு (குவாண்டோசோம்)
Photosystem	நிறமி அமைப்பு / ஒளி அமைப்பு
Pili or Fimbriae	நுண் சிலும்புகள்
Pistillode	மலட்டு தூலகம்
Plant antitranspirants	நீராவிப்போக்குத் தடுப்பான்கள்
Plasmogamy	சைட்டோபிளாச இணைவு
Plasmolysis	பிளாஸ்மா சிதைவு
Plasticity	உருமாறும் தன்மை
Plumule	முளைக்குருத்து
Plurilocular	பல்லறை சூற்பை
Polymorphism	பலபடிவுடமை
Porous woods	துளைக்கட்டை
Preparatory phase	ஆயத்த நிலை
Pressure potential	அழுத்தயியல் திறன்
Primary adapter	முதன்மை மாற்றி
Primary growth	முதல்நிலை வளர்ச்சி
Probe	ஆய்வி
Programmed cell death	திட்டமிடப்பட்ட செல் இறப்பு
Prokaryote	தொல்லுட்கரு உயிரி
Prophage	ஃபாஜ் முன்னோடி
Proton gradient	புரோட்டான் சரிவு
Pumps	உந்திகள்
Quiescent centre concept	உறக்க மையக் கொள்கை
Rachilla	சிறுகதிரின் மையஅச்சு
Radial vascular bundles	ஆரப்போக்கமைந்த வாஸ்குலக் கற்றைகள்
Radicle	முளை வேர்
Ray parenchyma	கதிர் பாரங்கைமா
Reaction Centre	வினை மையம்
Red drop	சிவப்பு வீழ்ச்சி
Redox reaction	ஆக்ஸிஜனேற்ற ஒடுக்கவினை
Reducing power	ஒடுக்கும் ஆற்றல்
Respiratory quotient	சுவாச ஈவு

Restriction site	வரையறு தளம்
Reverse osmosis	பின்னோக்கிய சவ்வூடு பரவல்
Rib meristem	வரிசை ஆக்குத்திசு
Ring Bark	வளைய பட்டை
Sap wood	சாற்றுக்கட்டை
Scale Bark	செதில் பட்டை
Seed	விதை
Seed coat	விதை உறை
Seed dormancy	விதை உறக்கம்
Semi autonomy	பாதி சுயசார்புதன்மை
Senescence	மூப்படைதல்
Serotaxonomy	ஊநீர் வகைப்பாட்டியல்
Sink	தேங்கிடம்
Slime bodies	ஸ்லைம் உடலங்கள்
Solute potential	கரைபொருள் திறன்
Source	தோற்றுவாய்
Sporophyte	வித்தகத்தாவரம்
Spring wood or early wood	வசந்தக்காலக் கட்டை அல்லது முன்பருவக் கட்டை
Stress escapers	நெருக்கடியை தப்பித்துக் கொள்ளும் தாவரங்கள்
Stress physiology	நெருக்கடி சார் வாழ்வியல்
Substrate phosphorylation	தளப்பொருள் பாஸ்பரிகரணம்
Sunken stomata	உட்குழிந்த இலைத்துளை
Synaptonemal complex	சைனாப்டினிமல் தொகுதி
Systematics	முறைப்பாட்டு தாவரவியல்
Tandem repeat	ஒருசெயல நிகழும் மாறிகள்
Taxon	வகைப்பாட்டுத் தொகுதி
Telomorph	பால்நிலை
Terminal oxidation	இறுதி ஆக்ஸிஜனேற்றம்
Thallospores	உடல வித்துகள்
Thermonastic	வெப்ப தூண்டல்
Thigmotactic	தொடு உணர்வு அசைவு
Transamination	அமைனோ மாற்றம்
Transduction	மரபணு ஊடுகடத்தல்
Transformation	மரபணு மாற்றம்
True fruit	மெய்க்கனி
Tunica corpus theory	டூனிகா கார்பஸ் கொள்கை
Vernalization	தட்பப்பதனம்
Water potential	நீரியல் திறன்
Xeric Succession	வறள் தாவர படிநிலை வளர்ச்சி
Zoospore	இயங்கு வித்து
Zygospor	உறக்க கருமுட்டை

## Competitive Examination Questions

### Unit – 1 Diversity of Living World

1. Which of the following are found in extreme saline conditions? (NEET-2017)
 

<b>a. Archaeobacteria</b>	b. Eubacteria
c. Cyanobacteria	d. Mycobacteria
2. Select the mismatch (NEET – 2017)
 

a. <i>Frankia</i>	Alnus
<b>b. Rhodospirillum</b>	<b>Mycorrhiza</b>
c. <i>Anabaena</i>	Nitrogen fixer
d. <i>Rhizobium</i>	Alfalfa
3. Which among the following are the smallest living cells, known without a definite cell wall, pathogenic to plants as well as animals and can survive without oxygen? (NEET – 2017)
 

a. <i>Bacillus</i>	b. <i>Pseudomonas</i>
<b>c. Mycoplasma</b>	d. <i>Nostoc</i>
4. Read the following statements ( A to E ) and select the option with all correct statements (AIPMT – 2015)
 

A. Mosses and Lichens are the first organisms to colonise a bare rock.

B. *Selaginella* is a homosporous pteridophyte.

C. Coralloid roots in *Cycas* have VAM.

D. Main plant body in bryophytes is gametophytic, whereas in pteridophytes it is sporophytic.

E. In gymnosperms, male and female gametophytes are present within sporangia located on sporophyte.

a. B, C and E	b. A, C and D
c. B, C and D	<b>d. A, D and E</b>
5. An example of colonial alga is (NEET – 2017)
 

a. <i>Chlorella</i>	<b>b. Volvox</b>
c. <i>Ulothrix</i>	d. <i>Spirogyra</i>
6. Five kingdom system of classification suggested by R.H. Whittaker is not based on (AIPMT – 2014)
 

<b>a. Presence or absence of a well defined nucleus</b>	
b. Mode of reproduction	
c. Mode of nutrition	
d. Complexity of body organisation	
7. Mycorrhizae are the example of (NEET – 2017)
 

a. Fungitasis	c. Amensalism
b. Antibiosis	<b>d. Mutualism</b>
8. Which of the following shows coiled RNA strand and capsomeres? (AIPMT – 2014)
 

a. Polio virus	<b>b. Tobacco mosaic virus</b>
c. Measles virus	d. Retrovirus
9. Viroids differ from viruses in having: (NEET – 2017)
 

a. DNA molecules with protein coat	b. DNA molecules without protein coat
c. RNA molecules with protein coat	<b>d. RNA molecules without protein coat</b>
10. Select the mismatch (NEET – 2017)
 

<b>a. Pinus</b>	— Dioecious
b. Cycas	— Dioecious
c. <i>Salvinia</i>	— Heterosporous
d. <i>Equisetum</i>	— Homosporous
11. Life cycle of *Ectocarpus* and *Fucus* respectively are (NEET – 2017)
 

a. Haplontic, Diplontic	b. Diplontic, Haplodiplontic
<b>c. Haplodiplontic, Diplontic</b>	d. Haplodiplontic, Halplontic
12. Zygote meiosis is characteristic of (NEET – 2017)
 

a. <i>Marchantia</i>	b. <i>Fucus</i>
c. <i>Funaria</i>	<b>d. Chlamydomonas</b>
13. Which of the following is correctly matched for the product produced by them? (NEET – 2017)
 

a. <i>Acetobacter acetic</i> : Antibiotics	
b. <i>Methanobacterium</i> : Lactic acid	
c. <i>Penicillium notatum</i> : Acetic acid	
<b>d. <i>Saccharomyces cerevisiae</i> : Ethanol</b>	
14. Which of the following components provides sticky character to the bacterial cell? (NEET – 2017)
 

a. Cell wall	b. Nuclear membrane
c. Plasma membrane	<b>d. Glycocalyx</b>
15. Which of the following statements is wrong for viroids? (NEET – 2016)
 

a. They lack a protein coat	
b. They are smaller than viruses	
c. They causes infections	
<b>d. Their RNA is a high molecular weight</b>	
16. In bryophytes and pteridophytes, transport of male gametes require (NEET – 2016)
 

a. Wind	b. Insects
c. Birds	<b>d. Water</b>

17. How many organisms in the list below are autotrophs? (AIPMT Mains 2012)  
*Lactobacillus, Nostoc, Chara, Nitrosomonas, Nitrobacter, Streptomyces, Saccharomyces, Trypanosoma, Porphyra, Wolffia*  
 a. Four                                      b. Five  
**c. Six**                                        d. Three
18. Which of the following would appear as the pioneer organisms on bare rocks? (NEET – 2016)  
**a. Lichens**                                b. Liverworts  
 c. Mosses                                    d. Green algae
19. Monoecious plant of *Chara* shows occurrence of (NEET-2013)  
 a. Stamen and carpel on the same plant  
 b. Upper antheridium and lower oogonium on the same plant  
**c. Upper oogonium and lower antheridium on the same plant**  
 d. Antheridiophore and archegoniophore on the same plant
20. Read the following five statement (A-E) and answer as asked next to them (AIPMT Prelims – 2012)  
 a. In *Equisetum*, the female gametophyte is retained on the parent sporophyte  
 b. In *Ginkgo*, male gametophyte is not independent  
 c. The sporophyte in *Riccia* is more developed than that in *Polytrichum*  
 d. Sexual reproduction in *Volvox* is isogamous  
 e. The spores of slime moulds lack cell walls  
 How many of the above statement are correct? (AIPMT Prelims – 2012)  
 a. Two                                        b. Three  
 c. Four                                        **d. One**
21. One of the major components of cell wall of most fungi is (NEET – 2016)  
**a. Chitin**                                    b. Peptidoglycan  
 c. Cellulose                                d. Hemicellulose
22. Which one of the following statements is wrong? (NEET – 2016)  
 a. Cyanobacteria are also called blue-green algae  
 b. Golden algae are also called desmids  
**c. Eubacteria are also called false bacteria**  
 d. Phycomycetes are also called algal fungi
23. Flagellated male gametes are present in all the three of which one of the following sets? (AIPMT Prelims – 2007)  
**a. Riccia, Dryopteris and Cycas**  
 b. *Anthoceros, Funaria* and *Spirogyra*  
 c. *Zygnema, Saprolegnia* and *Hydrilla*  
 d. *Fucus, Marsilea* and *Calotropis*
24. Ectophloic siphonostele is found in (AIPMT Prelims – 2005)  
 a. *Adiantum* and Cucurbitaceae  
**b. Osmunda and Equisetum**  
 c. *Marsilea* and *Botrychium*  
 d. *Dicksonia* and maiden hair fern
25. Which part of the tobacco plant is infected by *Meloidogyne incognita*? (NEET – 2016)  
 a. Flower    b. Leaf    c. Stem    **d. Root**
26. Select the correct statement (NEET – 2016)  
 a. Gymnosperms are both homosporous and heterosporous  
 b. *Salvinia, Ginkgo* and *Pinus* all are gymnosperms  
**c. Sequoia is one of the tallest trees**  
 d. The leaves of gymnosperms are not well adapted to extremes of climate
27. Seed formation without fertilization in flowering plants involves the process of (NEET – 2016)  
 a. Sporulation                              b. Budding  
 c. Somatic hybridization    **d. Apomixis**
28. Chrysophytes, Euglenoids, Dinoflagellates and Slime moulds are included in the kingdom (NEET – 2016)  
 a. Animalia    **b. Monera**    c. Protista    d. Fungi
29. The primitive prokaryotes responsible for the production of biogas from the dung of ruminant animals, include the (NEET – 2016)  
 a. Halophiles    b. Thermoacidophiles  
**c. Methanogens**    d. Eubacteria
- Unit – 2 Plant Morphology and Taxonomy of Angiosperm**
1. Leaves become modified into spines in [AIPMT-2015]  
 a. Silk Cotton                                **b. Opuntia**  
 c. Pea    d. Onion
2. Keel is the characteristic feature of flower of [AIPMT-2015]  
 a. Tomato                                      b. Tulip  
**c. Indigofera**                                d. *Aloe*
3. Perigynous flowers are found in [AIPMT-2015]  
**a. Rose**                                        b. Guava  
 c. Cucumber                                d. China rose

4. Which one of the following statements is correct [AIPMT-2014]  
 a. The seed in grasses is not endospermic  
 b. Mango is a parthenocarpic fruit  
**c. A proteinaceous aleurone layer is present in maize grain**  
 d. A sterile pistil is called a staminode
5. An example of edible underground stem is [AIPMT-2014]  
 a. Carrot  
 b. Groundnut  
 c. Sweet potato  
**d. Potato**
6. Placenta and pericarp are both edible portions in [AIPMT-2014]  
 a. Apple b. Banana **c. Tomato** d. Potato
7. When the margins of sepals or petals overlap one another without any particular direction, the condition is termed as [AIPMT-2014]  
 a. Vexillary **b. Imbricate** c. Twisted d. Valvate
8. An aggregate fruit is one which develops from [AIPMT-2014]  
 a. Multicarpellary syncarpous gynoecium  
**b. Multicarpellary apocarpous gynoecium**  
 c. Complete inflorescence  
 d. Multicarpellary superior ovary
9. Non-albuminous seed is produced in [AIPMT-2014]  
 a. Maize b. Castor c. Wheat **d. Pea**
10. Seed coat is not thin, membranous in [NEET-2013]  
**a. Coconut** b. Groundnut c. Gram d. Maize
11. In china rose the flower are [NEET-2013]  
 a. Actinomorphic. Epigynous with valvate aestivation  
 b. Zygomorphic, hypogynous with imbricate aestivation  
 c. Zygomorphic, epigynous with twisted aestivation  
**d. Actinomorphic, hypogynous with twisted aestivation**
12. Placentation in tomato and lemon is [AIPMT Prelims-2012]  
 a. Marginal **b. Axile**  
 c. Parietal d. Free central
13. Vexillary aestivation is characteristic of the family [AIPMT Prelims-2012]  
 a. Solanaceae b. Brassicaceae  
**c. Fabaceae** d. Asteraceae
14. Phyllode is present in [AIPMT Prelims-2012]  
**a. Australian Acacia** b. *Opuntia*  
 c. *Asparagus* d. *Euphorbia*
15. How many plants in the list given below have composite fruits that develop from an inflorescence? Walnut, poppy, radish, pineapple, apple, tomato. [AIPMT Prelims-2012]  
 a. Two **b. Three** c. Four d. Five
16. Cymose inflorescence is present in [AIPMT Prelims-2012]  
 a. *Trifolium* b. *Brassica*  
**c. Solanum** d. *Sesbania*
17. Which one of the following organism is correctly matched with its three characteristics? [AIPMT Mains -2012]  
 a. Pea : C3 pathway, Endospermic seed, Vexillary aestivation  
 b. Tomato : Twisted aestivation, Axile placentation, Berry  
 c. Onion: Bulb, Imbricate aestivation, Axile placentation  
**d. Maize : C3 pathway, Closed vascular bundles, scutellum**
18. How many plants in the list given below have marginal placentation?  
 Mustard, Gram, Tulip, *Asparagus*, Arhar, sun hemp, Chilli, *Colchicine*, Onion, Moong, Pea, Tobacco, Lupin [AIPMT Mains -2012]  
 a. Four b. Five **c. Six** d. Three
19. The Eyes of the potato tuber are [AIPMT Prelims-2011]  
**a. Axillary buds** b. Root buds  
 c. Flower buds d. Shoot buds
20. Which one of the following statements is correct? [AIPMT Prelims-2011]  
 a. Flower of tulip is a modified shoot  
 b. In tomato, fruit is a capsule  
 c. Seeds of orchids have oil – rich endosperm  
**d. Placentation in primrose is basal**
21. A drup develops in [AIPMT Prelims-2011]  
 a. Tomato **b. Mango** c. Wheat d. Pea

### Unit 3 Cell biology and Biomolecules

1. Who invented electron microscope? (2010 AIIMS, 2008 JIPMER)  
 a. Janssen b. Edison  
**c. Knoll and Ruska** d. Landsteiner
2. Specific proteins responsible for the flow of materials and information into the cell are called (2009 AIIMS)  
 a. Membrane receptors  
**b. carrier proteins**  
 c. integral proteins  
 d. none of these

3. Omnis-cellula-e-cellula was given by (2007 AIIMS)  
 a. **Virchow**                                      b. Hooke  
 c. Leeuwenhoek                                      d. Robert Brown
4. Which of the following is responsible for the mechanical support, protein synthesis and enzyme transport (2007 AIIMS)  
 a. cell membrane  
 b. mitochondria  
 c. dictyosomes  
 d. **endoplasmic reticulum**
5. Genes present in the cytoplasm of eukaryotic cells are found in (2006 AIIMS)  
 a. **mitochondria and inherited via egg cytoplasm**  
 b. lysosomes and peroxisomes  
 c. Golgi bodies and smooth endoplasmic reticulum  
 d. Plastids inherited via male gametes
6. In which one the following would you expect to find glyoxysomes(2005 AIIMS)  
 a. Endosperm of wheat  
 b. **endosperm of castor**  
 c. Palisade cells in leaf  
 d. Root hairs
7. A quantosome is present in (JIPMER 2012)  
 a. Mitochondria                                      **b. Chloroplast**  
 c. Golgi bodies                                      d. ER
8. In mitochondria the enzyme cytochrome oxidase is present in (2012 JIPMER)  
 a. Outer mitochondrial membrane  
 b. **inner mitochondrial membrane**  
 c. Stroma    d. Grana
9. Which organelle is present in higher number in secretory cell (2008 JIPMER)  
 a. Mitochondria                                      b. Chloroplast  
 c. Nucleus    **d. Dictyosomes**
10. Major site for the synthesis of lipids (2013 NEET)  
 a. Rough ER    **b. smooth ER**  
 c. Centriole    d. Lysosome
11. Golgi complex plays a major role in. (2013 NEET)  
 a. **post translational modification of proteins and glycosidation of lipids**  
 b. translation of proteins  
 c. Transcription of proteins  
 d. Synthesis of lipid
12. Main arena of various types of activities of a cell is (2010 AIPMT)  
 a. Nucleus    b. Mitochondria  
 c. **Cytoplasm**    d. Chloroplast
13. The thylakoids in chloroplast are arranged in (2005 JIPMER)  
 a. regular rings    b. linear array  
 c. diagonal direction                                      **d. stacked discs**
14. Sequences of which of the following is used to know the phylogeny (2002 JIPMER)  
 a. mRNA **b. rRNA** c. tRNA d. Hn RNA
15. Structures between two adjacent cells which is an effective transport pathway- (2010 AIPMT)  
 a. **Plasmodesmata**  
 b. Middle lamella  
 c. Secondary wall layer  
 d. Primary wall layer
16. In active transport carrier proteins are used, which use energy in the form of ATP to  
 a. transport molecules against concentration gradient of cell wall  
 b. transport molecules along concentration gradient of cell membrane  
 c. **transport molecules against concentration gradient of cell membrane**  
 d. transport molecules along concentration gradient of cell wall
17. The main organelle involved in modification and routing of newly synthesised protein to their destinations is (AIPMT 2005)  
 a. Mitochondria                                      b. Glyoxysomes  
 c. Spherosomes    **d. Endoplasmic reticulum**
18. Algae have cell wall made up of (AIPMT 2010)  
 a. **Cellulose, galactans and mannans**  
 b. Cellulose, chitin and glucan  
 c. Cellulose, Mannan and peptidoglycan  
 d. Muramic acid and galactans

#### Unit -4 – Plant Anatomy

1. The balloon – shaped structures called tyloses (NEET II – 2016 )  
 a. originate in the lumen of vessels  
 b. characterise the sap wood  
 c. **are extensions of xylem parenchyma cells into vessels**  
 d. are linked to the ascent of sap through xylem vessels

2. Cortex is the region found between (NEET II – 2016)
  - a. **epidermis and stele**
  - b. pericycle and endodermis
  - c. endodermis and pith
  - d. endodermis and vascular bundle
3. Read I – IV and find the correct order of components from outer side to inner side in a woody dicot stem (CBSE -AIPMT – 2015)
 

(I) secondary Cortex	(II) wood
(III) secondary phloem	(IV) phellem

  - a. III, IV, II and I
  - b. I, II, IV and III
  - c. **IV, I, III and II**
  - d. IV, III, I and II
4. You are given a fairly old piece of a dicot stem and a dicot root. Which of the following anatomical structures will you use to distinguish between the two? (CBSE -AIPMT 2014)
  - a. secondary xylem
  - b. secondary phloem
  - c. **protoxylem**
  - d. cortical cells
5. Heart wood differs from sapwood in (CBSE -AIPMT 2010)
  - a. the presence of rays and fibres
  - b. the absence of vessels and parenchyma
  - c. **having dead and non-conducting elements**
  - d. being susceptible to hosts and pathogens
6. The annular and spirally thickened conducting elements generally develop in the protoxylem when the root or stem is (CBSE -AIPMT 2009)
  - a. maturing
  - b. elongating
  - c. **widening**
  - d. differentiating
7. Anatomically fairly old dicotyledonous root is distinguished from the dicotyledonous stem by the (CBSE- AIPMT 2009)
  - a. absence of secondary xylem
  - b. absence of secondary phloem
  - c. presence of cortex
  - d. **position of protoxylem**
8. In barley stem, vascular bundles are (CBSE -AIPMT 2009)
  - a. open and scattered
  - b. **closed and scattered**
  - c. open and in a ring
  - d. closed and radial
9. Palisade parenchyma is absent in the leaves of (CBSE- AIPMT 2009)
  - a. **sorghum**
  - b. mustard
  - c. soyabean
  - d. gram
10. Sugarcane plant has (AIIMS 2009)
  - a. reticulate venation
  - b. capsular fruits
  - c. pentamerous flowers
  - d. **dump-bell shaped guard cells**
11. Vascular tissues in flowering plants develop from (CBSE- AIPMT 2008 & JIPMER 2012)
  - a. phellogen
  - b. **plerome**
  - c. periblem
  - d. dermatogen
12. The length of different internodes in a culm of sugarcane is variable because of (CBSE -AIPMT 2008)
  - a. short apical meristem
  - b. position of axillary buds
  - c. size of leaf lamina at the node below each internode
  - d. **intercalary meristems**
13. Passage cells are thin-walled cells found in (CBSE -AIPMT 2007)
  - a. **endodermis of roots facilitating rapid transport of water from cortex to pericycle**
  - b. phloem elements that serve as entry points for substances for transport to other plant parts
  - c. testa of seeds to enable emergence of growing embryonic axis during seed germination
  - d. central region of style through which the pollen tube grows towards the ovary
14. Which one of the following is not a lateral meristem (CBSE -AIPMT 2010)
  - a. interfascicular cambium
  - b. phellogen
  - c. **intercalary meristem**
  - d. intrafascicular cambium
15. A common feature of vessel elements and sieve tube elements is (CBSE- AIPMT 2007)
  - a. **enucleate condition**
  - b. presence of P. Protein
  - c. thick secondary wall
  - d. pores on lateral walls
16. In a longitudinal section of a root, starting from the tip upward, the four zones occur in the following order (CBSE -AIPMT 2004)
  - a. **root cap, cell division, cell enlargement, cell maturation**
  - b. root cap, cell division, cell maturation, cell enlargement
  - c. cell division, cell enlargement, cell maturation, root cap

- d. cell division, cell maturation, cell enlargement, root cap
17. The cells of the quiescent centre are characterized by (CBSE -AIPMT 2003)
- having dense cytoplasm and prominent nucleus
  - having light cytoplasm and small nucleus
  - dividing regularly to add to the corpus
  - dividing regularly to add to tunica
18. P. Protein is found in (CBSE- AIPMT 2000)
- parenchyma
  - collenchyma
  - sieve tube**
  - xylem
19. Specialized epidermal cells surrounding the guard cells are called (NEET (I) 2016)
- bulliform cells
  - lenticels
  - complementary cells
  - subsidiary cells**

**Directions:**

The following questions 20 & 21 consist of two statements, one labelled **Assertion** and the another labelled **Reason**. Select the correct answer from the codes given below:

- Both assertion and reason are true and reason is the correct explanation of assertion
  - Both assertion and reason are true, but reason is not the correct explanation of assertion
  - Assertion is true but reason is false
  - Assertion and reason are false
20. **Assertion:** Conducting tissues, especially xylem show greatest reduction in submerged hydrophytes.
- Reason:** Hydrophytes live in water. So no need of tissues. (AIIMS – 2010)      Ans: c.
21. **Assertion:** Long distance flow of photo assimilates in plants occurs through sieve tubes.
- Reason:** Mature sieve tubes have partial cytoplasm and perforated sieve plates (AIIMS – 2012)
- Ans: a.
22. Duramen is present in (JIPMER 2016)
- the inner region of secondary wood**
  - a part of sap wood
  - the outer region of secondary wood
  - region of pericycle
23. The interxylary phloem is found in the stem of (JIPMER 2013)
- Cucurbita
  - Salvia
  - Calotropis**
  - none of these

24. Wound healing is due to (JIPMER 2013)
- ventral meristem
  - secondary meristem**
  - primary meristem
  - all of these
25. Which of the following tissues consists of living cells (JIPMER 2012)
- vessels
  - tracheids
  - companion cell**
  - sclerenchyma
26. The Quiescent centre in root meristem serves as a (JIPMER 2011)
- site for storage of food, which is utilized during maturation
  - reservoir of growth hormones
  - reserve for replenishment of damaged cells of the meristem**
  - region for absorption of water
27. In the sieve elements, which one of the following is the most likely function of P.Proteins? (JIPMER 2011)
- Deposition of callose on sieve plates
  - Providing energy for active translocation
  - Autolytic enzymes
  - Sealing-off mechanism on wounding**
28. Which of the following is made up of dead cells? (NEET 2017)
- Xylem parenchyma
  - Collenchyma
  - Phellem**
  - Phloem
29. The vascular cambium normally gives rise to (NEET 2017)
- phelloderm
  - primary phloem
  - secondary xylem**
  - periderm
30. Which of the following plants shows multiple epidermis? (Manipal 2012)
- Croton
  - Allium
  - Nerium**
  - Cucurbita

**Unit -5 Plant Physiology**

- The water potential of pure water is (NEET 2017)
  - Less than zero
  - More than zero but less than one
  - More than one
  - Zero**
- Transpiration and root pressure cause water to rise in plants by (NEET 2015)
  - pulling it upward
  - pulling and pushing it, respectively**

- c. pushing it upward  
d. pushing and pulling it, respectively
3. Movement of ions or molecules in a direction opposite to that of prevailing electro-chemical gradient is known as (C.B.S.E. 2000)  
**a. Active transport**  
b. Pinocytosis  
c. Brownian movement  
d. Diffusion
4. Correct sequence of events in wilting? (P.M.T. Kerala 2001)  
a. Exosmosis-deplasmolysis-temporary and permanent wilting  
**b. Exosmosis-plasmolysis-temporary and permanent wilting**  
c. Endosmosis-plasmolysis-temporary and permanent wilting  
d. Endosmosis-deplasmolysis - temporary and permanent wilting  
e. Exosmosis-deplasmolysis-plasmolysis - temporary and permanent wilting
5. What will be the direction of net osmotic movement of water if a solution 'A', enclosed in a semi permeable membrane, having an osmotic potential of '- 30' bars and turgor pressure of '5' bars is submerged in a solution 'B' with an osmotic potential of '- 10' bars and '0' turgor pressure? (C.E.T. Karnataka 2002)  
a. Equal movement in both directions  
**b. 'B' to 'A'**  
c. No movement  
d. 'A' to 'B'
6. The pressure exerted by a swollen vacuole on the cell wall is (C.M.C. Vellore 2002)  
a. OP                                  b. WP  
**c. TP**                                      d. DPD
7. Who said that 'transpiration is a necessary evil'? (JIPMER-2006)  
**a. Curtis**                                  b. Steward  
c. Anderson                              d. J.C.Bose
8. Which one gives the most valid and recent explanation for stomatal movements? (NEET 2015)  
a. Transpiration  
**b. Potassium influx and efflux**  
c. Starch hydrolysis  
d. Guard cell photosynthesis
9. Carrier proteins are involved in (PMT-UP-1998)  
**a. Active transport of ions**  
b. Passive transport of ions  
c. Water transport  
d. Water evaporation
10. Active transport of ions in the cell requires (PMT MP 2002)  
a. High temperature                  **b. ATP**  
c. Alkaline pH                          d. Salts
11. Guttated liquid is (AFMC 2002)  
a. Pure water  
**b. Water plus minerals**  
c. Water plus enzymes  
d. All of these
12. Stomata of a plant open due to (CBSE 2003)  
**a. Influx of potassium ions**  
b. Efflux of potassium ions  
c. Influx of hydrogen ions  
d. Influx of calcium ions
13. Potometer works on the principle of (CBSE 2000)  
a. Osmotic pressure  
**b. Amount of water absorbed equals the amount transpired**  
c. Potential difference between the tip of the tube and then of the plant  
d. Root pressure
14. Most suitable theory for ascent of sap is (CBSE 1991, CPMT-UP 1995)  
**a. Transpirational pull and cohesion theory of Dixon and Jolly**  
b. Pulsation theory of J.C. Bose  
c. Relay pump theory of Godlewski  
d. None of these
15. If a cell kept in a solution of unknown concentration gets deplasmolysed, the solution is, (CPMT-UP 1996)  
a. Detonic                                  **b. Hypertonic**  
c. Isotonic                                d. Hypotonic
16. Which is essential for the growth of root tip? (NEET PHASE II 2016)  
a. Zn                                        b. Fe  
**c. Ca**                                        d. Mn
17. On the basis of symptoms of chlorosis in leaves, a student inferred that this was due to deficiency of nitrogen. The inference could be correct only if we assume that yellowing of leaves appeared first in (AIIMS 2007)  
**a. old leaves**                              b. young leaves



- c. young leaves followed by mature leaves  
d. mature leaves followed by young leaves.
18. Cytochrome oxidase contains (UP CPMT 2006)
- a. Iron                      b. Magnesium  
c. Zinc                      **d. Copper**
19. Which is correct to saprophytic angiosperms? (UP CPMT 2006)
- a. They secrete enzyme outside the body and absorb**  
b. They have mycorrhizae fungi  
c. They take food and then digest it  
d. They are photosynthetic
20. The ability of the venus fly trap to capture insects is due to (JIPMER 2008)
- a. chemical stimulation by the prey  
b. a passive process requiring no special ability on the part of the plant.  
c. Specialized muscle like cells  
**d. rapid turgor pressure changes**
21. Boron in green plants assists in (RPMT 2007)
- a. photosynthesis  
**b. Sugar transport**  
c. activation of enzyme  
d. acting as enzyme cofactor
22. Which of the following elements is very essential for the uptake of  $\text{Ca}^{2+}$  and membrane function? (Kerala CEE 2007)
- a. phosphorus              b. molybdenum  
c. manganese              **d. boron**
23. Sulphur is not a constituent of (AMU 2011)
- a. cysteine                  b. methionine  
c. ferredoxin               **d. pyridoxine**
24. Deficiency symptoms of nitrogen and potassium are visible first in \_\_\_\_ (AIPMT 2014)
- a. senescent leaves**              b. young leaves  
c. roots                      d. buds
25. The first stable product of fixation of atmospheric nitrogen in leguminous plants is \_\_\_\_ (AIPMT 2013)
- a.  $\text{NO}^{-3}$                       b. glutamate  
c.  $\text{NO}^{-2}$                       **d. ammonia**
26.  $\text{C}_4$  plants are more efficient in photosynthesis than  $\text{C}_3$  plants due to (AIPMT 2010)
- a. presence of thin cuticle  
**b. lower rate of photorespiration**  
c. higher leaf area  
d. presence of larger number of chloroplast in the leaf cells.
27. Chlorophyll b is (JIPMER 1980)
- a.  $\text{C}_{54}\text{H}_{70}\text{O}_6\text{N}_4\text{Mg}$   
**b.  $\text{C}_{55}\text{H}_{70}\text{O}_6\text{N}_4\text{Mg}$**   
c.  $\text{C}_{55}\text{H}_{72}\text{O}_5\text{N}_4\text{Mg}$   
d.  $\text{C}_{45}\text{H}_{72}\text{O}_5\text{N}_4\text{Mg}$
28. Synthesis of  $\text{ADP} + \text{Pi} \rightarrow \text{ATP}$  in grana is (AIIMS 1993)
- a. phosphorylation  
**b. photophosphorylation**  
c. oxidative phosphorylation  
d. photolysis
29. In chloroplast, chlorophyll is present in the (AIPMT 2004)
- a. stroma                      b. outer membrane  
c. inner membrane       **d. thylakoids**
30. Electrons from the excited chlorophyll molecule of photosystem II are accepted first by (AIPMT 2008)
- a. quinone**                      b. ferredoxin  
c. cytochrome-b              d. cytochrome-f
31. Read the following four statements A,B,C and D. Select the right option (AIPMT 2010)
- A. Z scheme of light reaction takes place in the presence of PS I only  
B. only PS I is functional in cyclic photophosphorylation  
C. cyclic photophosphorylation results into synthesis of ATP and NADPH<sub>2</sub>  
D. stroma lamellae lack PS II as well as NADP
- a. A and B                  b. B and C  
c. C and D                  **d. B and D**
32. Photolysis of each water molecule in light reaction will yield \_\_\_\_ (Kerala CEE 2007)
- a. 2 electrons and 4 protons  
b. 4 electrons and 4 protons  
c. 4 electrons and 3 protons  
**d. 2 electrons and 2 protons**
33. Photosynthetic active radiation (PAR) has the following range of wavelength (AIPMT 2005)
- a. 400-700 nm**                  b. 450-920 nm  
c. 340-450 nm                d. 500-600 nm
34. Phosphoenol pyruvate (PEP) is the primary  $\text{CO}_2$  acceptor in \_\_\_\_ (NEET 2017)
- a.  $\text{C}_3$  plants                  **b.  $\text{C}_4$  plants**  
c.  $\text{C}_2$  plants                  d.  $\text{C}_3$  and  $\text{C}_4$  plants

35. With reference to factors affecting the rate of photosynthesis, which of the following statements is not correct? (NEET 2017)
- a light saturation for  $\text{CO}_2$  fixation occurs at 10 % of full sunlight
  - increasing atmospheric  $\text{CO}_2$  concentration up to 0.05% can enhance  $\text{CO}_2$  fixation rate
  - $\text{C}_3$  plants respond to higher temperature with enhanced photosynthesis while  $\text{C}_4$  plants have much lower temperature optimum.**
  - tomato is a greenhouse crop which can be grown in  $\text{CO}_2$  enriched atmosphere for higher yield
36. A plant in your garden avoids photorespiratory losses, has improved water use efficiency, shows high rates of photosynthesis at high temperatures and has improved efficiency of nitrogen utilization. In which of the following physiological groups would you assign this plant? (NEET PHASE I 2016)
- $\text{C}_4$
  - CAM
  - Nitrogen fixer
  - $\text{C}_3$
37. Emerson's enhancement effect and Red drop have been instrumental in the discovery of (NEET PHASE I 2016)
- two photosystems operating simultaneously**
  - photophosphorylation and cyclic electron transport
  - oxidative phosphorylation
  - photophosphorylation and non-cyclic electron transport
38. The process which makes major difference between  $\text{C}_3$  and  $\text{C}_4$  plants is (NEET PHASE II 2016)
- glycolysis
  - calvin cycle
  - photorespiration**
  - respiration
39. In a chloroplast the highest number of protons are found in (NEET PHASE I 2016)
- lumen of thylakoids**
  - inter membrane space
  - antennae complex
  - stroma
40. Oxidative phosphorylation is (NEET 2016)
- formation of ATP by transfer of phosphate group from a substrate to ADP
  - oxidation of phosphate group in ATP
  - Addition of phosphate group to ATP
  - formation of ATP by energy released from electrons during substrate oxidation.**
41. Which of the biomolecules is common to respiration-mediated breakdown of fats, carbohydrates and proteins? (NEET 2013, 2016)
- glucose-6-phosphate
  - fructose 1,6-bisphosphate
  - pyruvic acid
  - acetyl CoA**
42. Which statement is wrong for Krebs cycle? (NEET 2017)
- there is one point in the cycle where FAD is reduced to  $\text{FADH}_2$
  - during conversion of succinyl CoA to succinic acid, a molecule of GTP is synthesised.
  - the cycle starts with condensation of acetyl group a.cetyl CoA. with pyruvic acid to yield citric acid**
  - there are three points in the cycle where  $\text{NAD}^+$  is reduced to  $\text{NADH}+\text{H}^+$
43. The three boxes in this diagram represents the three major biosynthetic pathways in aerobic respiration and arrows represent net reacts or products. (NEET 2013)
- 
- Arrows numbered 4, 8 and 12 can be
- ATP**
  - $\text{H}_2\text{O}$
  - FAD or  $\text{FADH}_2$
  - NADH
44. The energy released metabolic process in which substrate is oxidised without an external electron acceptor is called (AIPMT 2010)
- glycolysis
  - fermentation**
  - aerobic respiration
  - photorespiration
45. Krebs cycle starts with the formation of six carbon compound by a reaction between (CPMT 1980)
- malic acid and acetyl coenzyme
  - oxaloacetic acid and acetyl coenzyme**
  - succinic acid and pyruvic acid
  - fumaric acid and pyruvic acid
46. Respiration is a process in which (CPMT 1980)
- energy is used up
  - energy is stored in the form of ADP
  - energy is released and stored in the form of ATP**
  - energy is not released at all

47. The common phase between aerobic and anaerobic respiration is called (CPMT 1984)
- glycolysis
  - Krebs cycle
  - tricarboxylic acid cycle
  - oxidative phosphorylation
48. ATP synthesis occurs on/in the (AIIMS 1984)
- matrix
  - outer membrane of mitochondrion
  - inner membrane of mitochondrion**
  - none of the above
49. Which 5-carbon organic acid of the Krebs cycle is a key compound in the N<sub>2</sub> metabolism of a cell (AIIMS 1989)
- citric acid
  - fumaric acid
  - oxalosuccinic acid
  - α-Ketoglutaric acid**
50. Which one of the following acts as a hormone involved in ripening of fruits (CBSE PMT 2000)
- naphthalene acetic acid
  - ethylene**
  - indole acetic acid
  - zeatin
51. Coconut milk factor is (PMT 2003)
- auxin
  - gibberellin
  - abscisic acid
  - cytokinin**
52. Banana is seedless because (JIPMER 2004)
- it produces asexually**
  - auxin is sprayed
  - both A and B
  - none of the above
53. Pruning of plants promotes branching due to sensation of axillary buds by (AIIMS 2004)
- Ethylene
  - Gibberellin
  - IAA**
  - Cytokinin
54. Avena curvature test is bioassay for activity of (AIIMS 2006) (NEET 2016)
- Auxin**
  - Ethylene
  - Cytokinin
  - Gibberellin
55. One of the synthetic auxin is (AIPMT 2009)
- IBA
  - NAA**
  - IAA
  - GA
56. Which one of the following acids is derivative of carotenoids (AIPMT 2009)
- Abscisic acid**
  - Indole butyric acid
  - Indole – 3 acetic
  - Gibberellic acid
57. Photoperiodism was first characterized in (AIPMT 2010)
- Cotton
  - Tobacco**
  - Potato
  - Tomato
58. One of the commonly used plant growth hormone in tea plantations is (AIPMT 2010)
- Abscisic acid
  - Zeatin
  - Indole – 3 – acetic acid**
  - Ethylene
59. Root development is promoted by (AIPMT 2010)
- Auxin**
  - Gibberellin
  - Ethylene
  - Abscisic acid
60. Senescence as an active developmental cellular process in the growth and functioning of a flowering plant is indicated in (AIPMT 2008)
- Annual plants
  - Floral plants
  - Vessels and Tracheid differentiation
  - Leaf abscission**
61. You are given a tissue with its potential for differentiation in an artificial culture. Which of the following pairs of hormones would you add to the medium to secure shoots as well as roots? (NEET 2016)
- Gibberellin and abscisic acid
  - IAA and gibberellins
  - Auxin and cytokinin**
  - Auxin and abscisic acid
62. Phytochrome is a (NEET 2016)
- Chromo protein**
  - Flavo protein
  - Glyco protein
  - Lipo protein
63. Typical growth curve in plants is (NEET 2016)
- Linear
  - Stair – steps shaped
  - Parabolic
  - Sigmoid**

# Biology - Botany - Class XI

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