Glossary of Embryological Terms

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A

Abaxial muscles- That is the lateral part of the myotome and derived from muscles

Acron-This is an anterior part of the arthopodians body in front of mouth and brain.

Acrosomal process - During the early embryonic stage of sea urchin a finger like structure extended by polymerization of actin molecules.

Acrosome reaction - Fusion of the acrosome with sperm cell membrane, it is a calcium dependent process and by this a proteolytic enzymes release and the sperm penetrate the egg extra matrix and fertilized egg.

Actinomysin contractions-This is a process of attaching of a filament with other, in this by myosin attaching with actin and a contractile force are developed ,this is also found in neural plate cells.

Adhesion-It is a process of attachment between a cell or cell extra substrate**.**

Adnexa - Accessory structures found in developing embryo of cleidoic eggs, known as a extra embryonic membranes it is also discarded in adults condition it attained.

Adult stem cells- These are take from mature tissue of a organ these are repairing and repairing tissue of a particular organ or a subset of cell types.

Afferent - Information's of different stimuli carrying by a neurons to central nervous system.

Agglutination –Some of chemical process found in spermatozoa ,it's a reversible chemical reaction in it some of protein and other substrates found in cluster formed (e.g water egg).

Aging-It is the time retaliated and deterioration physiological process it is also necessary for production and survival of living thinks.

Alar plate - In vertebrates a gray matter of the spinal cord and medulla oblongata they makes a sensory input part of the brain of developing embryo.

Albumen- A liquid protein material secreted by oviducts walls and it is an egg covering or a sheath like structure mostly found in the polylecithal eggs like birds and reptiles.

Allantois-This is an extra embryonic membrane it is found in amniote spices and that store urinary wastes and gasses**.**

Allele - An allele is an alternative form of a gene (one member of a pair) that is located at a specific position on a specific chromosome.

Allometry - During developmental process of an organism the rate of development of different parts rates**.**

Alveolous - A sac like structure found in such as lungs, glands and tooth's sockets it is also describe as a histological structure of epithelial organs.

Ametobolous-This is a pattern of insect development, it is direct development method and found in primitive orders of insect and no larval stage as found in it.

Amniote egg - That type of egg a extra embryonic membrane is found (amnion, chorion, allantois and chorion) that is provided nourishment and other needs for the development of organism.

Amniotic fluid -It is a secretion secret by extra embryonic membranes and it is also served as a shock absorber for a developing embryo it protector embryo from drying out.

Amphibians – A group of animals they adopted for duel nature of life (water and land). In this class of vertibrates including limbless,(Apoda)tail less (Anura)and tailed(Urodela) animals.

Ampulla -This is a modified part or a segment of the mammalian oviducts, it is distal part of uterus and near the ovary where fertilization occur.

Anagen - when a hair grows in a follicle during development the length of hair.

Analogous-The function is same but the structure is different like wing of a butterfly and wing of a bird, these are functionally same but differ in structure.

Anamniota – It is a form of embryonic developments in which amnion never develop e.g. cyclostomata, fishes and amphibian.

Androgen-This is steroid hormone and known as masculine substrence like testosterone**.**

Aneuploidy – Number of chromosomes are abnormal in genetic cell, the state of having chromosomes in a quantity not a multiple of the haploid number these abnormalities occur in the cell by mutation.in the anuploidy chromosomes chromosomrsare differ as compare thr wild types.

Animal Pole - A specific Region of the zebrafish embryo, During embryonic development the opposite of yolk, in that place some cells divide and undergo cleavage during further stages like zygote, cleavage, and blastula stages.It is a place of zygote where the nucleous of the cell is present .

Antagonist - A type of inhibitor, For example, an artificial ligand that competes with the normal ligand for binding to a receptor is an antagonist.

Antrum – A space of fluid containing with a mature follicle of mammalian ovary.

Antigen – A heavy molecular weigh substance it is capable to provoking an antibody response..

Antifertilizin – It is a liquid substance and secreted by the ovum and react with sperm for agglutination during fertilization of animal.

Anus – It is a posterior region of the alimentary canal.

Anuran – A group of amphibians in which no tail is present in adult stage of life; frog and toad.

Aortic arch – It's a branch of ventral aorta passining signal side of pharynx.

Apyrase – It's a removing enzyme for pyrophosphate from ATP.

Aphid – A small size of insect found in plants as a parasite or plant louse they belonging to the insect order Hemiptera.

Apoptosis-It is a active process that prunes unneeded structures, control a number of cells in particular tissue or organ like necrotic zone.

Area Opaca- A highly yolk cell region in early chick blastoderm and make a peripheral part of bastoderm.

Area pellucida - This is a blast dermal part of a developing embryo y that a actual embryo forming part.

Area Vasculosa - In developing embryo of vertebrates or chick a specific region of extra embryonic membranes there are many of blood vessels are found like yolk sac membranes.

Area Vitellina –Region of extra embryonic membranes it a peripheral region of chick embryo it also found the outside of area vasculosa**.**

Asynchronous – Things occurring at different periods of time rather than occurring simultaneously.

Ascidian – A class of protochordates like sea squirt.

Asexual reproduction – A type of reproduction without fusion of gametes generally no maturation division.

Aster - Fibril structure generated during mitosis division.

Autocrine ineratraction-The secretion of same cells respond by paracrine factor**.**

Autophagy-These is a removing and replacing process in damaged organelles and senescent cells in a intracellular system**.**

Autogamy – Process of self fertilization**.**

Autograft - A type of transplantation of tissues or organ in same animal only region change not an animal.

Auxocyte – A group of pre meiotic germ cell these are immature type of cell.

Axial filament – A filament structure found in a tail of spermatozoa.

Axis – A median or imaginary line it is also correlated with a gradient.

Axis of the embryo –A median line present between anterior and posterior axis of a developing embryo, it's an imaginary line.

Autopod -Thse are a distal part of vertebrate limb bone like carpals and metacarpals (forelimb) tarsal metatarsal (hindlimb**).**

. Autosome - An autosome is a chromosome that is not a sex chromosome.Zebrafish only have autosomes, no sex chromosomes have been identified.

B

Balfour law - It's a law of segmentation of ovum and based on the proportional to the concentration of protoplasm.

Basal disc – The basal part of hydra body by this it attached with any hard substratum**.**

Basal lamina - It is also known as a basement membrane, it is sheet like specialized extracellular matrix that composed largely of lamina and type 1V collagen.

Basal plate – It's a part of brain of a developing embryo in it lateral-ventral wall of myelencephalon .it also separated from dorsolateral alar tube of developing brain by a process of sulcus limitans.

Base Analog - A molecule with similar structure to a pyrimidine or a purine, which has the ability to replace a nucleotide within a DNA molecule. Example: 5-Bromouracil (Often Abbreviated 5BU).

Basophilic – A property of binding basic dyes in histology of tissue.

Bidder's organ – A vestigial organ found in the testis of some of toads it is able to developing in to an ovary if testis removed surgically.

Bilateral cleavage – A pattern of arrangement of blastomers showing left –right symmetry from the initial stage.

Blastema – It is a group of cells they will capable to develop of a organism or any organized structure.

Bergmann glia -Theses are a type of gilia cell, it is extends from a thin process thought the developing neuroepithilium of cerebellum.

Bicoid -This is a morphogenic critical in drosophila for establishing anterior-posterior polarity.

Bilaminar germ disc-it is a specific type germ layer in developing embryo in amniotes during gastrulation, it consist epibast and hypoblast.

Bilitarians - This is body symmetry in all animal groups except the sponges, cinidarians, cetinophore and placozons.

Biofilm - It is generating by some micro organism like bacteria that generate a extracellular matrix, these also regulate the larval settlement of many marine invertebrate species.

Bipotential (indifferent) gonad) – This is a tissue is derived from the genital ridge like structure, in mammals a very common precursor; by this male and female gonad diverge.

Bivalent -This is a pairing of homologous chromosomes in that four cromatids are found, it is also known as tetrad during synoptomeanal complex in prophase first of meiosis stage.

Blastocoel - A cavity like strecture found in the blastula stage of development of a embryo.

Blastodisc - The embryo-forming portion of an egg with discoidal cleavage it is a very small region at the pole of animal. In zebrafish, the blastodisc is a small disc of yolk-free cytoplasm that is located at the animal pole.

Blastopore - This is an invagination point during gastrulation stage of a developing embryo, in protostomial it makes mouth and duterostomial make anus.

Blastocyst - A spacifically region found in mammalian ovum after a cavity has formed but before implantion is complete.

Blastula -A ball like structure formed by a group of cells after cleavage,formaton of it is called blastulation and cells are called blastomers.

Blood islands-It is a group of cells they aggregate of hemam- gioblast in splacnic mesoderm, these island of blood become from blood progenitor cells.

Body stalk - A conection bwtween embryo and chorion by this carrying umbilical vessels

Blstomeres -These are cells found during cleavage that is resulting mitosis division.

Branchial - A pertaining of gills in a developing embryo.

Bone marrow - In vertibrates a cellular martial with so many cavities of bones has found it's a site of blood cells differantion.

Bud - A group of undeveloped and undifferentiated cells generally it's a analage of appendages.

BMP-inhibitors - A group of protein they Prevent the binding of BMP' molecules to certain embryonic cells and these cells played a vital role of formation different type of tissue in embryo as an in habitor zebrafish, this best example of inhibitors in it they allows the formation of neural tissue and neural cells from ectoderm layer.

Bone Morphogenetic Protein (BMP) - A group of molecules, basically these are signaling molecules, and group of transforming growth factors. Directs the ectoderm to become epidermal tissue rather than neural tissue and induces tissues to have a bone marrow and ventral plate.

Bottle cells -These are invaginating cell found during amphibian gastulstion in

Brainbow -This is a method to trigger of expression of different amount and combination of different fluorescent protein with the cell by this labeled them with a different color seeming rainbow to identify each individual cell, tissue organs and embryo.

Branchial arch - A series of gills peimordia in a developing embryo.

Breancheal arches -These are paired bars of mesencymal cells covered by end dermal ceils infernally and ectodermic cells outerally, these are from connective tissues structure and supportive part of gills in fish.

Brightfield Microscopy- A type of microscopy which creates contrast between the object and the surrounding field by having a light positioned under the stage of the microscope, creating a bright background relative to the object

Brine Shrimp-Food for older baby or adult zebra fish, also called "sea monkeys" in the backs of comic books.

Bulge - It is a region found in hair follicle and it also niche for adult stem cells.

C

Cadherins -That is an adhesion it dependent on calcium molicules, some of transforming proteins they interact with other cadherins on adjacent cells and these are critical for estabashing and maintaining intracellular connection of cell types.

Calorie restriction -These is a dietary restraction of extending mammalion iongavity.

Cancer stem cell hypothesis - In this hypothesis the malignant parts of a tumor or an adult stem cell that has escaped its niche.

Capacitaion -That is a physiological changes in mammalian sperms by this they become capable for fertilization an egg.

Catagen-That is a process that seen during hair follicles regeneration it is also a regression phage.

Caudal - Referring as a tail.

Cavitation - This is a process found in mammalian embryo in it the trophoblast calls secrete a fluid in to a morula to create a blastocoels during this the trophoblast cell pump sodium ions in to the central cavity and water somatically a cavity is form known as blastocoels.

Cell adhesion molecule -These molecules hold cell together, the major group of these cadherins.

Cell cycle - Stages through which a cell passes through during cell division. The stages of the cell cycle are G1, S, G2, and mitosis.

Cell lineage -That is a series of a pluroptant cells these are undiffetatiat cells through stage of increasing differentiation to the terminally differentiate cell type.

Central dogma - That is a process in that the transfer of information coded in DNA to make protein, which DNA transcribed in to RNA which is translate in to protein.

Central nervous system - The brain and spinal cord of vertebrates.

Centrolacithal -Thse is types of egg such as insect s that has yolk is present in central part of the egg and undergoes in superficial cleavage.

Centromeres-That is a part of chromosomes where sister chromatid are attached to each other's by the kinetophore.

Cephalic -This is a part of head region of a developing embryo.

Chemotoxias-These are some chemical gradient they help to movement of a cell such as sperm follicles secrete chemo attractant for egg attraction.

Chimaric embryo -That is a embryo consist by more than one genetic sources.

Chimera- In which an organism consist by mixture of two type cells, these cells from two different individuals.

Chimoattractant -These are biomolicules or biochemical molecules that case cell move toward.

Chismata - That is a point where homologous chromosomes attached during meiosis through that crossing over is accruing.

Chi-squared analysis– A statistical test used to evaluate how well a set of observed values fit the expected values. The resulting probability is the probability that the hypothesis that the observed values match the expected values is correct.

Chondrogenasis -The process of formation of cartilage in that the condrocytes cells differanciate from condensing of mesenchymal cells.

Chord mesoderm - In a chordate embryo axial mesoderm that produced notochord.

Chordate - An animal group in which the notochord and dorsal nerve cord is present in stage of its life cycle.

Chordin - A BMP inhibitor found in the organizer responsible for inducing the ectoderm to form neural tissue and involved in the formation of the dorsal ventral axis of the embryo.

Chorion -The translucent outer membrane that encloses the zebrafish embryo and egg.

Chromatin -The complex of DNA and proteins in eukaryotic animals.

Chromosome – are a thread like structure in which DNA found in packaged from tightly with nucleous.These are known as physically carrier of genes ..

Ciliary body-This is a part of eyes it is a vascular structure at the junction the neural retina and the iris that secrete a aqueous humor.

Cleavage furrow- This is a groove formed in the cell membrane in a dividing cell due to tightening of the micro filamentous ring.

Cleavage Period – The period of development where the cells in an embryo undergo repeated division. The period ends when the embryo is in the form of a blastula.

Codominance - A mixed phenotypic expression where two alleles are both dominantly expressed throughout different regions of the organism or specific area of expression, creating a mosaic like result. For example, some cats possess multiple genes coding for fur color, which results in patches of different color throughout the fur.

Coelom- That is a space between somatic mesoderm and splanic mesoderm those become body cavity.

Commitment-This is a state in a cell during development fate has become restricted even thought is not yet displaying overt change in biochemistry and function.

Competence-This is a ability of a cell to respond to a specific inductive signal.

Condrocytes - that is a cell types belong from cartilage cells.

Cones-that's color photoreceptor cell found in retina.

Congenital defect - Any type of defect in a individual born that's are can be heridatory,or envirmental cause .

Conjoined twin - These are monozygotic twins they share some part of their bodies, they may even share a vital organ such as liver or heart.

Convergent Extension - It is a key event during the gastrulation Process in this tissues changes in shape,during the gastrula stage, cells extend along the anterior-posterior axis and migrate toward the dorsal side of the embryo.

Corona radiate - In mammalian, egg inner most layer of cumulus cells, they immediately adjacent with zona pellucid.

Cranium -The skull of invertebrate skull it is composed of the neurocranium and viserocranium

Crossing Over-The exchange of DNA segment between non sister chromatids .that process is occur during gametogenesis.by this shuffling og genetic martial and it is also a major region of variation.

Crown cells-These cells are neighboring the nodal cells, critical to setting up the left –right axis in the mammalian embryo.

Crypt -These are a deep tubular recess pit for example intestinal crypt in the intestinal villi.

Crystalline - It is a transparent, lens-specific protein,.

Cyclopia - it is a congenital defect characterized by a single eye cause by mutation in gene.

Cytoplasm – A thick solution, it enclosed by a membrane .Main composition is water salt and protein. .

Cytoplasmic bridge - continuity between adjacent cells that result from incomplete cytokines.

Cytoplasmic determination factor - some factors are found in the cytoplasm of a cell that determines cell fate. For example: gradients of different cytoplasic determination factors that show cell fate along with anterior posterior axis.

Cytotrophoblast - It is a part of extra embryonic epithelium that composed of original trophoblast cells it also attached with endothelial layer; it is part of mammalian placenta.

D

Dauber larva - It is a metabolically dormant larval stage in C .elegans.

Dechorionate - Remove the outer membrane (chorion) enclosing the embryo.

Decidua -Thise is a type of placenta a common part or a connection of fetus and maternal tissue, its maternal part of placenta it made of the endometrial of the uterus.

Deep cells-That is a cell population in zebra fish blastula between the enveloping layer and the yolk syncytial layer that to the embryo proper.

Delamitation - It is a part of gastulation, during this one cellular sheet splitting in two or more layers.

Delta protein - Activation of the notch pathway and participate injuxtracrine interaction, it means cellular's surface ligand.

Dendrites - It is a structural part of neurons that are fine.branching extension emanating from neurons it also pick up electric impulse from, dendrites from other cells.

Dental lamina - It is an epithelial thinking in jaw it also resolves in to separate placodes, which is together with the underlying mesenchyme from teeth.

Dermal bone -That is the bone formed by dermal layer of skin, these are found in face and skull that are also derived head mesoderm or cranial crest.

Dermal papilla -When a hair is develop mesenchymal epithelial cells are induced and formed a notch like structure by dermal fibroblast cells in beneath of epidermis that stimulates proliferation of the overlaying epidermal basal stem cell, that is give raise to the hair shaft.

Dermatome - That is produced the precursor of the dermis it is also a central part of dermomyotomes and population of muscles cells.

Dermomyotomes -It is a dorsal part of somites it contain skeleton muscle progenitor cells and these cells generate the dermis of the back portion.

Descent with modification - By this the Darwin theory explain by descent form according this the common ancestor to explain adaption top the common environments by natural selection.

Determination - That is a stage of commitment following specification; that stage assumed irreversible in this when a tissue is capable of differentiating autonomously even when placed of a non natural environment.

Development - That is a process or progressive's changes in signal cell known as zygote it converted in to multicellular organism it also known as embryogenesis, maturation to the adult from and continues into senescence.

Developmental biology - The study or a discipline of embryonic and others developmental progress such as replacement of old cell by new cell in this content regeneration, metamorphosis, aging, and development of different diseases like cancer.

Developmental plasticity - This is a ability of an embryo or larvae to react in to environmental condition with a change in form stage, movrment, or rate of activity.

Dextral coiling - In a snail having right side coil or open into right side of its shell.

Diakinesis- It is a Greek word 'moving a part. In the first meiotic devision mark as an end of the prophase first sage in this the nuclear envelop breakdown and chromosomes migrate with metaphase plate.

Diapauses - It is metabolically, dormant, non feeding stage of an organism during development it can occur, at the leave, pupae, or adult stage.

Dickkopf - It is a German word'', head "stubborn" it is type of protein which can interact directly with the Wnt receptor preventing Wnt signaling.

Diencephalon -The caudal sub division of the pros encephalon it will be form the optic vesicle,reatina,pineal gland,thallimic and hypothalamic brain regions, it is also receive neural input from retina.

Differential adhesion hypothesis - This is a mode of explaining the pattern of cell shorting it is also based one thermodynamic principle.

Differential gene expression -This is a principle of development genetics, a individual body contain same genome the specific protein expressed by the different type cell these are wildly diverse differential gene expression, m RNA translation,nRNA processing, protein modification all are work to the extensive differantion of the cell type.

Differential RNA processing -The splicing of precursor in to message that specify for different types of proteins by using different combination of protein axon.

Differentiation - Process in which cells become functionally and structurally different from one homozygous and heterozygous genotypes. If "M" is used to denote the dominant allele, and "m" is used to denote a recessive allele, then both the MM and Mm genotypes will have the phenotype of the "M" allele.

Digestive tube - This is a gut of embryo, which extends the length of body from the pharynx to cloca, some bud produced from the alimentary canal for some glands like pancreas, thyroid, thymus and parathyroid.

Diploblast - These are two layer animals they are posses' ectoderm and endoderm but most of species lack true mesoderm includes ctenophore and cnidarians. Compare with bilatarians.

Diplotine - This is stage of prophase first in meiosis, this is also known as double thread stage and forth and last stage in this synaptonemal complex break down and two homologous

chromosomes start separate but remain attached at the point of chisamata where crossing over is occur.

Direct development- This type of development characterized by the lack of larval stage, where the embryo proceeds to construct a small adult.

Disassociation - This is an ability of one molecule to develop differentially from others.

Disruption - It is an abnormality or congenital defects caused by some of exogenous factors such as plants, chemicals, radiations, and viruses.

Distal tip cell -In sea elegans a signal non dividing cell located in the end of the each gonad that can be maintained by nearest germ cell during mitosis by the inhabitining their going in meiosis.

Dizygotic twins -Twins that result from two separate but approximately simantinous fertilization events, these types of twins are full siblings as compare monozygotic twins.

DNA binding domain - Transcription factor domain these are recognizes a specific DNA sequences.

DNA methaylaton - A method of gene controlling during transcription in vertebrates by the methylation of enzymes of promoters of inactive genes.

Dorsa lateral pathway - This pathway correlated with trunk neural crest cells they move dorsovenrtal region of ectoderm and become mealanocytes cells.

Dorsal - The “back side” of an animal. The top of a shark (where the dorsal fin islocated) or in the back of humans.

Dorsal mesentery - It is a part of splanchnic mesoderm, this is a fibrous membrane and it also attached with the membrane of body wall, it is participate in developing intestine of embryo.

Doses compensation - In male and female x chromosomes equally expression encoded gene product.(1) The transcription rate in male x chromosomes(2) in both partially repressing of x **chromosomes.** (3) In activating form of one chromosome in female cell (mammals).

Duterostomes - In this group during embryonic development the opening of blastocoels is known as blast pore is converted in to anus like ecinodemates, tunicates, and vertebrates.

E

Early Pressure Screen - Type of genetic screen that uses gynogenetic diploids that are produced through inhibition of the second meiotic division.

Edison - This is a hormone it is secrete by prothoracic glands it is also an active molting hormones that is modified in peripheral tissue.

Efferent t - This is often using a part of nervous system in this carried away from the main organ system, or carried out the information from central nervous system to peripheral nervous system.

Efferent duct - These ducts are linked with the rete testis to the wolffian duct, formed by some modulated tubules of the mesonepharic type kidney.

Egg chamber - In the Drosophila ocyte will develop in the overiole they contain 15 interconnected cells these are nurse cell and in this a single oocyte.

Egg jelly - It is a outside of vitelline membrane like stricture become by glycoprotein mostly it is used to attract sperms for fertilization.,

Embryo - It is an early stage of development in human it also start to fertilization of egg, and it end of the organogenasis.in human is called fetus until its birth.

Embryo Loop -Tool used for maneuvering zebra fish embryos made from capillary tubes.

Ectoderm - This is a Greek word it means outside, the cell are outside or dorsal surface in a devlaping embryo during gastrulation,in these three layers the ectodermis form nervous system and neural tube or nerural crist ,also generates the epidermal covering of embryo.

Embryonic shield - A thickening at the leading edge of the dorsal blastoderm during the formation of the germ ring. Equivalent to the organizer in frogs or the node in mammals. The embryonic shield cells eventually become the prechordal plate and chordamesoderm. Like the organizer and node, the embryonic shield is essential for gastrulation and axis formation.

Embryology -That is a branch of development biology in this the study of developing embryo from fertilization to hatching of birth.

Embryonic axis - This is a potential axis of a embryo it clearly show in developing embryo or a fertilized egg include anterior-posteriorndorsal ventral and left-right.

Embryonic epiblast - In a developing embryo of mammalians, the contribution of epiblast cell to the proper embryo these are split from that the embryonic cavity of an embryo.

Embryonic germ cells - Embryonic germ cells are pluropotent cells that's derived from primordial germ cells they also progenitor of a adult gamete, which derived from somatic linkage between late embryo to early fetal development.

Embryonic period- It is embryogenesis in this the embryo form and develops, in mammals (human) initial 8 weeks in uterus prior the fetus period ,that is the time during most of the organ systems are form.

Embryonic stem cells- During the initial stage of a developing embryo, pluropotent stem cells of the mammalian inner cell mass blastomers they are capable of generating the entire cell types of the complete body.

Enamel knot –This is a group of cells of developing tooth these cells induced in the epithelium by neural crest-derived mesenchymeal cells they secrete paracrine factors that is a pattern cusp of a tooth.

Endocardium - That is internal layer of heart chamber, it is derived from heart filed.

Endoconderal ossification- This is a bone formation process in which the mesodermal mesenchymal cells convert in cartilage and it is also replace by bones in the trunk and limb region.

Endocrine disruptors - Some of hormonally activated compound are present in environment, these are directly or indirectly major detrimental effect on developing gonads and the gonads are functionally and structurally changed.

Endocrine factors - The blood is a travel medium of hormones by this hormones reached from their target organs o, cells, and tissues these factors exert their effects.

Endometrium – This is a part of inner epithelial layer of female uterus.

Endoseatal osteoblast - This is a inner line of bone marrow and it is responsible for providing a niche environment that is attracts hematopoietic stem cells they prevent from eptosis,and a state plasticity.

Endosymbiosis - This is a Greek word ,living within it also describe that two situation one cell live inside another cell or one organism lines within another.

Energids - The nuclei of Drosophila periphery of blastoderm it is syntial blasroderm, their association with cytoplasm islands of cytoskeleton protein

Enhancer - A DNA sequencing specific promoter control the efficiency and rate of transcription it is bind with a enhancer protein factors these are activate the genes by (1) recruiting enzymes

and nucleosomes break in particular area (2) it is also stabilizing the transcription initiation complex.

Enterocoely -This is a process of formation of embryonic ceolom in which the mesodermal pouches extended from the gut it is also found in deuterostomes.

Ependyma - This is a inner most layer of neural cord canal and also

Ventricle of the brain.

Epicardium - This is a outer surface of heart that's formed by coronary blood vessels that feed the heart derived from heart field.

Epidermal placod - This is a thinking of epithelial ectoderm associated with act dermal appendages.

Epidermis – Outer layer of human body it derived from ectoderm.

Epididymis - Driverd from the wolffian duct, it is tube like structure of testeis that link the efferent tubules to the ductus deferens.

Epigenasis - That the organ of the embryo is formed de novo (from sctantch) at each generation it is view support bt Aristotle and William.

Epigenitics - That is a study of a mechanism that act as phenotypically or without changes of gene sequences or nucleotide sequences of the DNA ,this change is outer off the gene they can't carried out one to another generation

Epimorphin protein - It is type off multifunctional protein and present in membranes off mesanchymal cells

Epimorphosis - It is a form of regeneration it observed when a adult stricter undergo dedifferentiation to form a relatively undifferentiated cell mass that redifferatiate a new structure.,

Episomal vector - These are the vehicle for gene delivery mostly its derived from viruses that cont insert themselves into host cell DNA.

Equatorial region - In mammals it present like a junction between inner acrosomal membrane and sperm cell membrane. It is clearly seen in the acrosomal reaction and where two membrane egg and sperm fusion occur.

Erythroblast - These are mature cells from proerythoblast and synthesizes enormous amount of hemoglobin.

Erythrocyte - These red blood cells become mature that's entire in the circulatory system that time these are incapable to division, DNA synthesis, or protein synthesis,

Erythropoietin - This is a type of hormone that is act on elytroid progenitor cells, to produced proerythroblasts,that will be produced red blood cells.

Estrogen - This is a group of hormones it necessary for fertilization in both male and female, it also required incompletion of post natal development of mullearion duct and wollffian duct.

Estrus - In female a estrogen –dominating stage during ovarian cycle in females non human hats are periodic valuators ,characterized by the display of behavior consistent with receptivity to mating it also called heat;

Eucromatien - It is a type of chromatin that is contains most of organism genes, mostly incapable to transcribe as compared heterochromatin.

Exon - This is a region of DNA and group of genes these are encode the protein.

Endoderm- One of the three primary germ layers in a developing embryo; forms gastrointestinal tract, gills, and other associated structures.

ENU-Also known by its IUPAC (International Union of Pure and Applied Chemistry) name "N-methyl-N-nitrosourea (chemical formula, C3H6N3O2) is a highly potent Mutagen. The chemical is an alkylating agent, and acts by transferring the ethyl group of ENU to nucleobases (usually thymine) in nucleic acids. ENU is used in zebrafish genetic screens to cause mutations in thespermatogonial stem cells, from which mature sperm is derived

.Epiboly - Process in which cells extend to cover the whole embryo, including the yolk. All germ layers in a zebrafish undergo epiboly.

Eukaryote - Organism whose cells have a nucleus, for examples eubacteria and archaea (multicellular organisms) such as humans and plants.

F

F1 Generation – A very consistant genetic background for study of deleterious mutation, Offsprings genitically uniform.

F2 Generation - It is second filial generation it can be consist Offspring to allow F1 generations individual to inter breed.

F3 Genetic Screen- A type of genetic screen commonly used in zebrafish in this the male member of the generation commonly undergoes for mutation treatment by some type of mutagens and by this the sperm of parental (one) is changed ,they behave like a hetozygous type of mutation.

Fasciculation- This is a neural development event in it two axon working different one is adhering to and another one is using for growth.

Fast block to polyspermy- It is a mechanism in which the electric potential change in more positive manner and by using this prevented fusion of a sea urchin fertilized egg.

Fate map - It is presumption of a developing embryo on the basis of map or future of developing embryo or different body parts in adult what is to be, it is diagram based.

Fate prospective – A destination toward a cell or tissue well knows by the previous experience, a given part of embryo would develop under normal conditions linkage of an each part of egg it is a cell descents in to a definite region or portion of adult organism.

Female pronucleus - This is a female nuclei and it is also unfertilized

Fertilization – The fusion of two different cells called gametes, in each of them a set of haploid chromosomes. By that result a diploid cell is formed is a zygote. Type of variations in offspring occurs in an organism by that process.

Fertilization membrane – The vitelline membrane in some of spices work as a apparently lifted the surface of egg for other sperm contact.

Fertilizin – In many spices a liquid substance secreted and released in the surrounding medium by mature egg for the purpose of temporary agglutination of sperm.

Fertilization cone -It is a structural extension in egg surface in this place egg and sperm are fused during fertilizations caused by polymerization of actins protein it provide a bridge with egg and sperm.

Fetal alcoholic syndrome - This is a disorder in new born babies they born from an alcoholic mothers, they have small head size, specify, facial features and development of brain is arrest, often they show neural defects or mental disorders are seen.

Fetal period - The development of human embryonic period from end of the 8 week to birth, in that period the development of organ systems mostly occurring.

Field morphogenetic - During the development of embryo in normal conditions but some of specific regions or structure will occurs.

Fetus -The period of deferent stages of a developing embryo to birth it charctized to growth and modeling in human it in show to ninth week of gastrulation to birth.

Fibronectin - A extra cellular part, also a large group of glycoprotein synthesized by moumerous protein ,these are functionally work as adhesion molecules or by that cells linked one to another,e.g glycoprotein .

Filopodi - It is a process which contain microfilaments, cells can easily move, extend and attaching .in sea Urchin it may make by some mesenchymal cells.

Fine bud - In fish embryo a group of tissue make a swallow structure that give fin, homologically it same that tetra pods limb bud.

First polar body - These are haploid cells seen during gametogensis primary ocytes firstly undergo in meiotic division and it produced a large cell,secod a small cell .large make ocyte and tiny cell is call first polar body The ocyte retain most of time in cytoplasm and tiny cell mostly lost.

Flagellum - It is a long thread like structure found mostly in protozoan for locomotion it contain microtubule with 9+2 arrangement in that a axonymal central part present .

Fluorescent dye - Some of compounds that such as florescent green proteins that can emit a bright light at a specific wave length when ultraviolet light excited.

Follicles - These are a small group of cells arranged with a cavity e.g in mammalian ovarian follicles are present with a single ovum and a group of granule cells called granulose and theca cells were present, same present with hair and feather follicles.

Follicular stem cell -That type of cells are present in adult and work as multipotent stem cell for e.g. in hair follicles these are present as reside in bulge in hair follicle and it support to formation of shaft and sheath of hair.

Forward Genetics-A classical research approach which begins with the study of a phenotype and then progresses to identify the corresponding mutated gene.

Fovea Germinativa - A region found in amphibian germinal vesicle that gives off its polar body by a pigment free spot present in hemisphere.

Fusion nucleus – In the formation of zygote during fertilization two different nature nuclei sperm and egg were united with each other**.**

Freemartin - A sterile female calf in some of cattle's ,its co-twin to a male.

G

G- protein- That are binding protein these attached with GTP and work as activator and in activator GTP modifier enzymes, they play a important role in the RTK path way of cell and maintain the endoskeleton in cell.

Gamete - a special type of cells found in sexual reproduction these are haploid and formed by gametogensis by genetic characters pass one to another generation.

Gametogenasis – An important process in sexual reproduction the formation and also maturation of germ cell.

Gamma Radiation - A type of electromagnetic radiation, they arise from the radioactive decayed atomic nuclei, these are short wavelength type rays. Producers are hottest and most energetic objects like, neutron star and pulsars, the deep penetrating capacity of gamma rays show a significant biochemical changes in living organism and also used that for therapeutic treatment.

Ganglia- A group of neurons cell bodies whose form a nerve, it is a key part of nervous system.

Gastraea theory – Given by Heckle and describe that since all higher forms of gastrula stage there may have existed a common ancestor built on the plan of permanent gastrula it recently found in coelenterate**.**

Gastropod - A class of phylum mollusks: slugs, snails ect.

Gastrula – It is a stage of developing embryo, during this a three layer stage is formed these called germ layers that will generate the most important organ system of body.

Gastrulation - A early Phase in development most of animals during embryonic development,That is specific stage of development in which single layer known as blastodem convert in to the three germ layers . Morphological movements of the cell and differantion of the cells is most recognized feather of gastrula stage.

Gastrocoel – A cavity formed during the gastrlation stage and it also converted in to arcantron in later developing stage of development.

Genetic assimilation – The phenotypic characters' develops by the environmental influences; they become show a process of selection that can take over the genotype, so they formed even in the absence of envir0

Genetic ridge – It is also called germinal disc and formed genital part of the developing embryo like testis and ovary. it is a thinking part of splanchnic mesoderm.

Genital disc – That is a area show in Drosophila developing embryo it will generate male and female genitalia they also show by a separation of group of cells of genetic disc in may be induced by some of Para factors.

Genome - Complete DNA sequencing of an individual organism or set of genetic instructions for an organism for further development.

Gene – In the chromosomes it is a basic hereditary unit of genetic material**.**

Genomic eqvelance - That is a scientific theory according this the every cell of a embryo or organism has a equal genome as every other cell.

Genomic imprinting – this is a theoretical phenomenon in group of mammalian in which only the sperm- derived or only the egg-derived allele of the gene expressed some time these are inactivated on one allele by the DNA methilation during the process of gametogenasis like spermatogenesis or Ogenasis.

Genotype - The genetic makeup, as distinguished from the physical appearance, of an organism or a group of organisms. The set of genes possessed by an individual organism.

Germ Band – it is a modified germinal structure seen in drosophila embryo during the gastrulation stage by the process extension and conversion in which those cells are includes all the cells that may form the trunk of the developing embryo and also thorax and abdomen in adult.

Germ cells – These are become of the gonads; they found in a groups of cells and undergo in meiotic division to generate gametes they differ from the somatic cells.

Germ layers - During the process of gastrulaion in a developing embryo one of these three layers, ectoderm, endoderm and mesoderm in triplobastic animals and ectoderm and endoderm in diploblastic animals. They will form all type of tissues of the body.

Germ line – A line of cells become germ cells, these are separate from somatic cells and found in many animals like vertebrate, roundworm and insects, they can occur autonomously from determinant found in the cytoplasmic region of the egg.

Germ plasm theory – Weismann 1888 proposed a theory it is a testable model of pacification according this each cells of a developing embryo would develop autonomously .instead of dividing equally in entire cell the chromosomes is divided in such a way the different

chromosomes determinant entire in different cells .only the nuclei is destined to become germ cell.

Germ plasma - Some of the cytoplasmic determinants in some of animals like frog, nematode and flies that autonomously specify the primordial germ cell.

Germ ring – In a fish embryonic development a thickened ring like structure appear during blastulation and covered half of the yolk cell .it composed by the upper superficial layer epiblast and the inner one is hypoblast.

Germ spot – A part of ovum where nucleus is present.

Genital –Refer as to reproductive organs or processes or both type male and femal.

Germarium – In female Drosophila anterior region of the overiole contain two types of cells one is germ cells and another is somatic cells.

Germinal epithelium – In gonads the inner structures derived from the splanchnic mesoderm that will formed by non genetic cells are called somatic cells.

Glochidium – The larval stage of fresh water in molluscans animals .it is tiny bear trap to attached with gill of fish or fin also .it is parasite up on the fish body and take feed from the same until it drops off to metamorphose in to an a adult.

Gonocytes – In mammalian gonads some of primordial germ cells are found that are arrived from the genital ridge of the embryonic gonads.

Granulosa cells – In the fetal ovary cortical epithelial cells these cells surrounded by germ cells and they become ova and will formed theca cells these follicles envelop secrete steroid hormones.

Gonad – The primary reproductive organs ovary or testis .

Gray matter –In the brain and spinal cord T.S different regions are clearly visible it also rich in neural cells bodies and gray color region it compare with white matter.

Growth cone – It is a motile part of a neuronal axon it show nerve outgrowth.

Gynandromorph – It is a Greek word gynos, female and Andros, male. Animals have show same part of body is female structure and others are show male.

Gyrencephalic – The structural modifications in the cerebrum cortex in human and cetaceans it will compare with the less encephalin. Mental influence they had first been compulsory.

Or they can occur later through induction by neighboring cells.

Gradient – A quantitative difference in some substance or its activity, with a specific an axis, or a radiating form from a specific center.

H

Homeotic Genes - Genes that control body development. More specifically these genes determine which parts of the body develop into which body parts. A common example of a mutation in homeotic genes is antenneapedia Drosophila melanogaster (fruit fly), where legs grow out of the head instead of the antennae.

Homologous pair- Two chromosomes that are alike in structure and size and that carries specific genetic information for the same set of hereditary characteristics. Humans carry 23 homologous pairs.

Hypoblast - The inner layer of the zebrafish embryo that contains both endodermal and mesodermal precursors.

Helteres – Drosophila and other flies have a pair of balancers are develop in third segment of thoracic region.

Haptotaxis – Migration of a group of cells in a specific direction on a substrate, up a gradient of adhesiveness.

Head activation gradient – In hydra a specific morphological gradient is found. It is upper side of hypostome and ahead undifferentiated head clearly seen.

Head mesoderm – Anterior to the trunk region mesoderm it consisting two type of mesoderm known as paraxial mesoderm and prechordeal mesoderm .this is a region which is much musculature and connective tissue much part and it provide mesenchyma to head formation .

Heart tube – It is a tubular structure formed at the middle line of the field of heart it will become atria, ventricles, and the basic part of the aorta and arteries,

Head process – It is a process of head formation in avian embryo the chodromesoderm it posses through Henson node and cell will migrate antereorly, ahead of the notocordial mesoderm may become brain and middle brain.

Hedgehog – These are the protein it make complex with cholesterol .they also known as paracrine factors family and use for induced particular cell type and make boundaries between tissues.

Hemimetabolous – It is a form of insect development and this type of metamorphosis is clearly seen that is included pronymph,nymph and adult stages.

Hensen node – this is a swallow part and it found in avian embryo structural thickening of anterior end of primitive streak. It is also a functional eqvalent of dorsal lip of the amphibian embryo, kown as hensen knot.

Hepatictomy – when the liver is damaged of infected by different regions, the surgical removal of damaged or infected part of liver.

Hepatic diverticulum – when the organogenesis process of an embryo a bud like structure formed by liver precursors' of endodermal cells .these are extended from foregut in to the surrounding msesenchymal cells.

Hermaphrodite – in some of animals both type of reproductive organs are exists .one side of the body ovary is present and another side is testis.

Heterochromatin – The cell cycle a very condensed stage of the chromosomes and it replicate later as compare other chromatin, it is mostly transcriptionally in active part.

Hetrometry - In the process of natural selection an amount of change in genes and by this the phenotypic variations are seen,

Hidstone - These are the major protein compound of the chromatin, and they are positively charged protein.

Histone acetylation – Histone is positively charge protein and the addition of negative charged acetyl group with histone; this is a neutralization of histone and thus activates transcription.

Holobiont – this term use for composite organism of a host and its persistant symbiont.

Homeobox – DNA sequencing 180 base pair are charctrisedgene.that is the code known as homedomene protein code also Hox gene included.

Homodimer - When the two protein molecules are bound identically.

Homologue – (1) A pair of chromosome they have same gene composition (2) In a common ancestor that's similar evolutionary feathers that is a reason.

Horizontal neurons – In the plane of retina the functionally activated neural retina transmit some impulse it help to integrated some of signals coming from different photoreceptor cells.

Host – In the relationship of diffident symbiotic organism ,involvement of one organism is more as compare another's that is called large organism and smellers are may live on the surface of large or in side of the body.

Hox genes – A regional identity in a developing embryo dictate by a large family or group of genes particularly define the anterior-posterior axis of embryo ,these genes encoded by transcript factors they have regulate other genes , In human being four copies of Hox genes are present they located in haploid set in different four chromosomes.

Hu protein –Some of RNA binding proteins they involved in neural development that stabilize m RNAs.these proteins prevent them from being quickly degraded.

Hub – It is a small or microenvirment in Drosophila testes in these stem cells for sperm reside.

Hyaline layer – In sea urchin eggs a special type of coating are found it formed by cortical granule proteins hyaline, that is a supportive layer and it provided a support of blastomeres during balstulation of developing embryo.

Hyper activation – In mammalian spices incerasment in the motility of capacitated sperm ,that is a process it has been proposed to help in detachment of a sperm in oviduct epithelium and it allow effectively a sperm to travel viscous oviduct fluid and facilate it to penetration in extracellular matrix secrete by cumulus cells.

Hypoblast – During gastulation it is a inner layer of a epibolized blastoderm cells in mammals and birds it is a precursor of extra embryonic membranes.

Hypostome – In coelenterate animals like hydra it is a cone shape structure of head it later contain head.

Hypomorphic mutation – That is a type of mutation found in different animals in which the function of a gene is reduced it also opposed null mutation that result protein loss their functional activity.

Hypoblast Island – A group of cells they derived from the aera of pellucida ,in which some of cells are migrate from blastoderm to sub germinal cavity it is morphologically seen in clusters or 5 -20 cells are present in each cluster but they dose not contribute in formation of embryo proper,

I

Imaginal cells – The holometabolous insects that type of cells are found they will formed a adult stracture, during initial stage these cell increase in numbers, a marginal disc is formed but they can't differentiate in pupae stage.

Imaginal disc – A group of cells are found in clusters form these are totally undifferentiated cells ,it will formed the cuticulaer structure of a adult like wing ,antenne,healter,eyes head, thorax,genitalia and legs.

Imaginal molt- In holometabolus insects final molt is seen clearly during meatamorphosis,the adult cuticle form beneath as pupae cuticle .the adult later emerge from pupae case at adult eclosion .

Imago – It is developing stage in some of animals like insects .it is a stage where a mature as sexually with well developed wings.

In situ – It is a Latin word; on site, it is a natural condition of environment during the development of an embryo.

In situ probe – During the sequencing of a DNA in a tissue a complimenty R NA or DNA used to localize for specific gene sequencing.

In utero - In the uterus of a female.

Incomplete (Partial) Dominance- A mixed phenotypic expression when two alleles are "incompletely dominant" that causes an expression of some sort of intermediate phenotype. For example, a cross between a pure red snapdragon (R/R) and a pure white snapdragon (r/r) produces a pink snapdragon (R/r).

Indel - In a DNA insertion or deletion of bases and change of sequence of genes..

Indirect development – The process of embryonic development, it is found those animal they have a larval stages were found with a specific characteristic features during development of animal, and it also different as adult .which emerge out only a period called metamorphosis.

Inducer - A signal produced by a tissue and it also induced some other tissue for their behavior.

Inducible Enzyme- A group of enzymes they have capable of being evoked by induction process.

Induction – In this one cell population influences the development of neiburing cell or tissue via interaction very close range.

Inferior – Lower of posterior part or any stage.

Ingression – in a developing embryo migration of individual cell from surface or outer side layer in to the interior side of embryo .these cell become mesenchymal cell and they migrate independently.

Inguinal fold – During the mammalian fetus development lateral extension of urogenital mesentery, some of primordial round ligament of uterus and the distal part of the gubernaculums.

Inner cell mass - In mammalian embryo a group of cells are found inner side of blastocye that will evidently participate in embryo proper and they also associated with the yolk sac, allantois and amnion.

Instar – the developing stage between larval molt in holometabolus insects .During this process a larval stage feed fastly and molt continually one by one until final sage will come after that a larval stage converted in to the next stage of development called pupae.

Instructive interaction – It is a type of interaction, when a cell is induced by any inductor a signal produced by this automatically it is also necessary for the propose of initiating a new gene expression in the responding cell.

Integration – It is a theoretical approach of a principle: how the different parts are put together in to a system and how they will interact to form the whole system.

Integrins – A group of protein family they work together, it is fact that they interact extracellular and intercellular scaffolds allowing them to work together .in which extracellular and intercellular surface so may binding sites are present in a specific sequencing of protein .

Interior necrotic zone – It is a process of programming cell death visible in a developing tetrapod embryo limb, where a zone of functional cells are seen and by this the separation of radius from ulna.

Interkinesis – this is a stage seen between the cell cycle of a developing embryo of animal, that period visible the end of the meiosis I and meiosis II.

Interkinetic nuclear migration - The period of cell reaction seen in the cell cycle in which germinal epithelium some of nuclei located to basal end to the apical end of the cells from the ventricle surface where they saw in mitotic division.

Intersex – That is a specific condition in which a male and a female traits or characteristic feathers are observed in a same individual.

Interstitial stem cells – In hydra a specific stem cells are found, these are present in ectodermal cell layer and the generation of neurons, gametes, nematoctes and some of secretary cells.

Intron – Specially modified part of DNA that's known as non coding protein region of DNA within a gene.

Invagination – This is a cell migration process seen in gastulation of developing embryo ,it show infolding of different regions much like indenting a soft boll rubber ball when in it a pocket**.**

Involution – Movements of cells inward side of an embryo by this outer layer is expanded and it spread over the internal surface.

Iris – It is a part of eyes, it is ring like pigmented structure of muscular tissue .functionally it control the size of pupil and also determine different colors.

Isogamy – The shape and size of two gamete are same without any type of differentiations.

Isolacithal – In that type of yolk the distribution of yolk particles is equal, like mammal and snail eggs.

Isthmus - The narrow and modified part of mammalian oviduct adjacent to the uterus**.**

J

Jacoson's organ – A sensory organ found in the Amphibian and Reptile it became by invaginations from olfactory pits in later stage it convert in glandular and sensitive olfactory epithelia.

Jagged protein – During Development of embryo it is a activation the pathway of notch, and these are a ligand for the notch and also participate in jaxtracrine interaction.

Junction neurulation – In the transition zone of a developing embryo the pryimary neural and secondary neural tube extends posterior in mammals' from the sacral region and in the fishes and amphibians.

Juvenile hormones - Necessary hormones for metamorphosis in developing embryo of a insects, it is a lipid type in nature and also prevent ecdysone induced changes in different genes .presence of it that ensure molt in one to another larval instars but not pupae and adult.

Juxtracrine interaction – It is a type of interaction in proteins they are present in cell surface with the receptor protein.

Juxtracrine signaling – During a cell in a juxtaposed create some waves or signals they show indirect contact with one another's.

K

Kairomones - Some of chemicals that's are produced and realized by a predator they also induced defenses mechanism in a prey.

Karyokinesis – Some of mechanical chemical are present during the mitotic division of a cell, theses are mitotic spindles.

Keratinocytes – A covering around the cell by differentiated epidermal cells, these are tightly bound and produced a water impermeable layer or seal of lipid and protein.

Kupffers vesicles – In Zebrafish a transient fluid fill organ structure is found in a cilia and it control symmetry of left and right.

L

Labioscrotal folds - It is a very folded structure is found in external genitalia of mammals it is also show a indifferent stage during differantion .they will also formed by labia majoria in female member and scrotum in male member it is also known as swelling part of genitalia or urethra fold.

Labor – Contraction in the utrine wall spacilly for birth of a child with rhe expulsion of the birth .

Lamellipodia - That is a specific locomotory pseudopod formed by actins networks, it also found some of the growth cone of a neurons and migratory cells.

Laminae -These are different type layers found in the brain and neurons are organized in to different laminae ad clusters.

Lamini – A group of glycoprotein and some another compounds found in basal laminae they also play a great role in assembling the extracellular matrix ,some of promoting cells adhesion and growth shape, size ,cell migration .

Lanugo - That is a type of hairs they can easily seen in embryo of human mostly shed before birth of a developing embryo.

Large micromeres – A group or tiers of cells found in the fifth cleavage of a developing embryo of sea urchin in which these micromeres divides and make different parts of body like primary mesenchymal cells become skeleton of larva and adult.

Larva - The developmental and sexual immature stage in some animals that occurs after hatching or birth typically preceding metamorphosis and the adult form. In zebrafish, the larval stage begins at about 3 days post-fertilization, when the fish emerges from the chorion.

Lateral inhibition – In this a specific activity of different nebiriong cells they easily inhabitation of another cells present in same environmental conditions.

Lens placode – A paired of epidermal cell thinking it induced eye optic cup of eyes. it formed by the invagination of the lens vesicles further it is also converted in a transparent eye lenses , it allow the light imping on the retinal layer of the embryo.

Lens vesicle – It is a globular structure and formed it from the lance placed ,it converted in lenses during differantion .cornea is become by the overlying ectodermic cells and these are also induced by lenses vesicles .thinner layer of eye cup differentiated in to the neural retina.

Leptotene – It is a first stage of mitotic division of prophage I, during this stage the chromatin is stretched and thin, it also consist of two parallel chromatid they show thread like in structure .DNA replication is occurred in this stage but chromosomes cont identify individually.

Leydig cells - In males secondary sex characters' visible by a specific hormones called testosterone secreted by testes cells derived by intestinal mesenchymal cells surrounding testes cored.

Life expectancy – Statically measurement of a person or organism of how long may they live, or the survival time period of a specific species or a organism, or organism. Or we can say expect to live a spices.

Ligand - Molecular or functional group or secretion one cell response another cell by binding a receptor on that particular cell.

Lim bud - A group of cells they arranged in bulge they will form further limb, it is a activity of proliferation of mesenchymal cells from limb field lateral plate meso dermal.

Limb field - An area found in a developing embryo of mammals that have many type of cells and all type of cells capable for making of limb.

Limb genes – A group of genes those coding transcriptions factor these are structurally related proteins encoded by Hox genes.

Lissencephalic – It is a internal part of cerebral cortex have a so many folds are found in mice.

Lumen – It is a hollow space clearly seen during embryo development .it may tubular or globular structure.

Luteinizing hormones - A hormone secreted by pituitary gland of mammals, that is stimulator of steroid hormones production, such as testosterone in male testicular leyding cells and estrogen in female ovarian follicles.

Lymphatic vasculature - The circulatory system have so many vessel Are present for transport lymph or blood also.

M

Meiosis -Process in which chromosomes of the Eukaryotic cell divide to give rise to haploid reproductive cells. The stages of meiosis are prophase I, metaphase I, anaphase I, cytokinesis, prophase II, metaphase II, anaphase II, and telophase.

Mesoderm- One of three primary germ layers. The mesoderm is located between the ectoderm and theendoderm and gives rise to the blood, heart, kidneys, gonads, bones, muscles andconnective tissues.

Microinjection - `A method to inject a liquid substranceat the microscopic level by using a glass, it is also a very approachable manner in the study of mammalian gamete and early embryonic stage .introduce different molecules or reagent. `

Macromeres – Type of cells found in asymmetrical clevge, thye have large in size and more yolk is present.

Male pronucles – The haploid of a male sperm, It is seen during spermatogenesis.

Malformatio – Type of genetic abnormality caused by different type of mutation like gene mutation, chromosomal mutation and translocation.

Mantel zone – This is a part of brain of a developing embryo, it is a second layer of spinal cord and medulla also that is formed around neural tube .There is so many neuronal cells and its color is gray.

Maskin - In amphibian developing coyotes a type of protein create some folds as repressor RNA it prevent translation that loop like structure give a space for binding of two others proteins cytoplasmic poly adenylation called element binding protein.

Master regulation – some of transcription factors control the differantion of a cell by (1) regulation of genes and (2) expression of specific genes.

Maternal contributions - During the ogenesis process of an egg, some of stored m RNA and protein produced genome in primary oocytes stage.

Midblastual transition - The stage is occur in blastulation of embryonic development where zygotic show a number of dramatic changes. Activation of zygotic genes expression, transcription, cell divisions and increase asynchronous in cell division.

Mitosis - Process by which the nucleus of a eukaryotic cell divides. The stages of mitosis are prophase, metaphase, anaphase, and telophase.

Morpholino antisense oligomer - An artificial molecule that binds to RNA to prevent splicing or protein translation.

Mutagenesis -Process by which the genetic information of an organism is changed in a stable manner, either in nature or experimentally by use of chemicals or radiation. That is a Creation of a mutation.

Mutation-A change in the DNA or RNA of an organism

Maternal message -A role of RNA in developing oocytes in ovary ,that is present in egg and stored in the cytoplasm of the same but the egg is under go in the primary oocyte stage that time egg is diploid ,therefore the mRNA being made maternal genome.

Maximum lifespan – A charctstic feather of spices in which an individual survive how many year and maximum number of year in given spices.

Mediator – A group of protein in large numbers and the make a multimeric complex nearly 32 protein sub unites and in that many genes linked that part of RNA polymerase to enhance sequences .for pre initial complex formation.

Medullary chord – The caudal region of avian embryo formed by some of mesenchymal cell condense, that stage seen in the secondary neurulation of developing embryo. A cavity will formed by the caudal section of neural tube.

Melanoblast – a group of cells they are known as pigment progenitor cell, in which so many colors

(Melanin) will present.

Meroblastic cleavage – It is pattern of cleavage in zygote of developing embryo, in which large amount of yolk will present and the division occur in the zygote only superficially or a little part of cytoplasm, the furrow of the division dose not penetrate yolk.

Meroblastic oogensis – Type of oogensis process found in insects, in which the eggs are centrolecithal type and division of the cells continue but cytoplsmic connection remains between cells produced by oogenesis process.

Mesencephalon – It is a middle part of brain in vertebrate developing embryo, the major part of it formed by optic tectum and tegmenrum.

Mesenchymal stem cells – These are multipotent stem cells, also known bone marrow – derived stem cells, these are able to produced many type of cells like bone,cartilage,fat lineage and muscles.

Mesenchymae - That is a connective tissue of a embryo, it consisting of scattered fibroblast and some of migratory mesenchymal cells these cells are separated by the extracellular matrix.

Mesentoblast - It is found in the snail embryos that give a group of progeny cell of the mesoderm and endoderm in gut region.

Messenger RNA – It is a large family of RNA molecules, it convey a message or genetic information from DNA to ribosome's, where gene expression, production of protein and a specific amino acid sequences occurs.

Metamorphosis – It is a transition phase of a embryo, in which a particular stage of development is converted in another, such as larval stage of frog is transform in adult with specific characters.

Metamorphic molt – A continue process of insect developing embryo in this a phage like larva change in pupae and many stages occur that's called instars and that process is called molt ,the end of the stage it seem with fully mature adult .

Micromeres – cells types found in asymmetrical cleavage, during that the vegetal pole side a small cells group can seem and attached with each others, divisions are unequal types or unequal cleavage.

Monospermy – In internal fertilization on animals a sperm entire in female body on genital parts, it is a haploid cells and meet with haploid egg most probably,

It converts in diploid cell called zygote with double set of chromosomes.

Myoblast – Precursor or a group of cells for muscles in a developing embryo.

Myocardium – Type of muscles fibers that are found in heart of animals.

Myotomes – Part of somites they give rise skeleton muscles of a embryo except head region .in which two parts one is proximal and it nearby to the neural tube it convert in muscles of rib

cage or back but the distal part means away from the neural tube convert in muscles of limb and ventral part of body.

Myogenin – Regulatory factor that regulate a group of genes they involve in the differantion and also repair skeleton muscles of embryo.

Mutualism – It is a stage of symbiosis, in that both of partners or members of that are benefited relationship.

Muller glial cells – These are a parts of neural retina they also neurons maintained cells.

Mosaic embryos – In which most of the cells are determined during initial stage of development by autonomous specification and each cell of embryo receive a message for further development independently without any interaction of cells or cell-cell interaction.

N

N- cadheri – In a developing embryo type of cadhrnin is found and it is a part of central nervous system that is highly expressed genes .they have ply a important role in coordination of neural signals .

Necrosis – Some factors such as toxic injury by inflammation a pathological cell death.

Necrotic zone – The term necrotic" a zone or regions where tetrapods limb develop by formation of a notch like structure by apoptic cell death ;four nrecrotic regions seen during limb development these are anterior, posterior digital and interior.

Negative feedback loop – This is a process in which the product of process inhib- its clearly seen in the earlier stage in 5the process.

Neocortex - A distinguishing structure and an important layer in mammalian brain cerebellum, in its six stratified layer of neuronal cell bodies, each of one is specify for a different functional properties.

Neoteny – Some of animals larval stage reproductive maturity is occur but morphologically not complete developed by retenution of juvenile stage e.g axolotal larva of salamander.

Nephrons – A functional unit of the kidney.

Neural fold –Some of thickened edges found around neural plate, it move upward during the process of neuratation it move and fused with neural tube in midline.

Neural plate - This is a specific part of neural ectoderm it a part of dorsal ectoderm. And it also folds up word for neural tube formation.

Neural plate border – It is an epidermal part and it found around neural plate.

Neural retina – An inner layer of optic cup it composed a layered array of color, light sensitive photoreceptor cells, Muller gilia cells, cone, road cell and bipolar interneuron.

Neural stem cells - Central nervous system derived stem cells these are capable for neurogensis throughout of life

Neural tube – In a developing embryo it is precursor of nervous system such as brain and spinal cord.

Neuroblast – During development of an embryo an immature group of cells they become part of nervous system by the differantion process.

Neurocranium - It is also known a safety case of brain.

Neurons – These are particular type cells, functionally they are modified for conduction and transmission of information's by some signals they have electrical and chemical**.**

Neuropore – In developing embryo during initial sage, the opening of neurons both anterior and posterior side although later stage it is closed**.**

Neurula - The early stage of embryo during neurulation it is preceded by the gastrula stage.

Neurulation – The folding process of neural plate and both end caudal neuropore and cranial neuropore from neural tube.

Node –It is a homologous organ in mammalian developing embryo as hension node.

Nondisjunction-An error happening in mitosis or meiosis where the chromosomes fail to separate during metaphase causing one cell to receive two chromosomes and the other to receive no copies.

Notochord – A rod like flexible structure found in dorsal part of the body, it is also formed by the cartilaginous that is a characterized feature in chordates. It is play an important role in conducting and patterning of nervous system.

Nucleus – A specialized structure found in most of the cell (except bacteria and blue green algae) these is a main part of cell because it controlled and regulates all activity of the cells (growth and metabolisms).

Nurse cells – In developing egg these cells are provide nutrition and transfer food to developing oocytes

O

Organizer-In zebrafish, also referred to as the shield. The organizer expresses Nodal and BMP inhibitors (Noggin, Chordin, Follistatin). The organizer establishing the dorsal-ventral axis of the embryo and is necessary and sufficient for the process of gastrulation.

Obesogens – A group of chemical substances in the body of mammals, they are increase production and occumulation of dipose and fat body.

Oncogensis - It is also known as carcinogenesis ,some time regulatory cells promote cell division lose adhesion and promote irregular division .It is a multi step and complex process in that a normal cell convert in cancerous cells'.

Oocyets - It is a female diploied gametocyte or germ cell involve in reproduction .An oocyte is producer in ovary by the process gametogenasis.it also convert in secondary haploid oocyte by meiosis division.

Oogonium – A female immature and undifferentiated small reproductive cell. It becomes primary oocytes when it leaves this stage of development.

Optic cup - This is a white color area in the central part of the neural disc it is duble walled chamber, formed by the imagination process during organogesasis of optic vessels. .

Optic nerve – A paired cranial nerve (II) it transmite in formation from retina to brain also composed by the axonal part of neural retina.

Oral plate – A fused area of endoderm and stomodeal ectoderm, later stage of development it beak and convert in the oral opening.

Organization – A theoretical hypothesis of sex hormones in the fetal or neonatal stage of mammalian embryo and organized nervous system is a sex special manner ,the life of adult may they have play a trastinary motivational effects by these same hormones .

Organogenesis - During the development of an embryo it is a process come after gastulaion and in it rearrangement and also interaction of cells of three layers (Acto, endo and mesoderm) formed in the gastrulation .these three layers become different tissue and organs of a developing embryo.

Osteoblast – A precursor group of cells of bones, these are committed for formation of a specific type bone.

Osteogenasis – It is a bone formation issue in a developing embryo, it is a progressive stage of transformation of ostiocast to ostioblast to ostiocyte.

Ovum – It (Latin) plural,haploied ova cell in a female .

Ovulation – That is a process of reproduction in a female in it an egg released from the ovary.

Ovall cells – A group of cell in the liver of animals they divide and formed new hepatocytes and bile duct, that process occur during the hepatocytes not able to produced or regenerate liver sufficiently.

P

P Generation – It is related to Mendel work of inheritance from parents to their offspring's. The P generation is the parental generation that produces offspring that will be analyzed in a genetic screen.

Padagenasis – During larval stage that immature larva produce new one or reproduction occur, pricicoceous sex development.

Pancreas – A mixed gland found in vertebrates, its work as digestive and endocrine gland.

Papilla – A conical structure found in different part of body, projection of outer side is seen.

Parthenogenesis- Formation of a adult without fertilization or absence of sperm.

Parturition – A process of birth of a new born**.**

Pericardium – A cavity, portion of coelom it containing the heart or covering for safety of heart.

Pigment cell – A specialized cells found in the animals, they filled with granules of melanin or other organic pigments.

Plasmosomes – A nucleolus found in true form in animal's cell**.**

Polarity – A property having an oriented axis.

Polymerase – A type of enzyme working in polymerization process.

Potency –A capability of different regions of a embryo to differentiate in a specific type tissue, organ or body part.

Preformation – A assumption based theory of reproduction, by that the sperm and egg contain an adult body in miniature.

Pachaytene –It seen in first meiotic division and also **III** stage of prophase

Paramecium – It is a unicellular organism, shape of the animal like sole of a shoes.mostl its habitat as fresh water. Its body covered a ciliated unicellular membrane.

Parasitism – type of symbiotic relationship in which one partner is benefited at the expense of other.

Pericardial Edema - The accumulation of fluid within the pericardial cavity. Mostly it not harmful and heart work properly, If the amount of fluied is incease it creat a pressure on heart.

Phenotype -The main observable, physical properties of an organism and expressed genetic traits or characteristics of an organism. The phenotype of an organism is the result of the interaction between its inherited genetic code and non-heritable environmental factors

Placenta – An organ found in the viviparous animals in which a restionship between mother and fetus, by this fetus take respiration, circulation, endocrine, nutrition and immune functions. It consist the fetus components and maternal part.

Pluriopotent cells – A type of stem cell in which a specific functional capacity, It capable to make different type of cells and also capable to make a complete embryo in the specific laboratory conditions.

Point Mutation -A mutation affecting only one or very few nucleotides in a gene sequence.

Polar body - The asymmetrically meiotic divisional product during Oogenesis process, it is a small cell with any cytoplasm. These are formed from the first and second meiotic division and both have haploid cells.

Prokaryote - Unicellular organism with simple cell structure not complex as eukaryotic, which lacks a nucleus, such as bacterial cells. Organism of this group do not contain a nucleou, nuclear envelops and different type of cell organils.

Protein- A essential macronutrient or macromolecules this molecule composed of one or more amino acid polypeptide chains, the order and composition of which is dictated by the DNA

sequence that coded for it. There is 2o different type amino acid exist in to protein.hunderd to thousand amino acid attached with each other in a long chain manner to form a protein.

Protoplasmic bridge – Septal or bridge continuity between different types of cells implies syncitial structure.

Proximal – Very nearer point of reference or to a very closed, toward the main body part.

Q.

Quartet- In type of spiral cleavage, a set of four cells produced by simultaneous division of the original blazoners of four cell stage.

R

Radial holoblastic cleavage – A pattern of cleavage found in ecinodrmata in that the egg completely divided in blastomers by a furrow at animal to vegetal poles.

Radial intercalation –Type of morphological movements in deep epiblast cells in to superficial epiblast layer, with helping of strong epiboly during the gastrulation process.

Reaction norm – It is a phenotypic plasticity in encoded genome.

Receptor – A type of protein found in cell membrane and its function is bind with a ligand .

Recessive allele – An allele that is of homozygous gene of expressed phenotypically when it is homozygous but not when heterozygous. In human and others diploid animals if mution does not occur have two alleles of gene in outosomal chromosomes.

Reelin – Protein found extra cellular part of cerebellum and cerebrum in developing embryo .its function in cerebellum is bind to neurons to glial cells and cerebrum It direct migrate to neurons toward pail surface.

Regeneration – A capacity of an organism to reformed the body or body parts has been damaged or destroyed by disease and trauma.

Regulation – The ability of respicify cells soothe removable of cells destined to become a particular strecture of a embryo it also compensated with the others cells producing structures.

Respiratory tube – The future respiratory track in developing embryo it found outside of pharynx, later it convert in bifarculate entre in to the lungs.

Responder – The tissue being induced during induction in induction tissue have many receptors for the inducing molecules, they respond to their inducers.

Rete testis- A specific network of canal system in testis by that sperm convey from somniferous tubules to efferent tubes**.**

Retina – A photo receptor tissue layer it's found in the back of the eyes ball in chordates.

Reverse genetics - Beginning with an unknown gene and using a molecular analysis to determine the function of that gene. This differs from forward genetics in which the phenotype is observed first and the genotype determined.

Radioassya –radioisiotopse used for investigating of any other material as a tracer.

Regeneration of reparative –Regrowth of injured or lost part of body.

Relaxin – An a active hormones for relaxation of pelvic ligaments during parturition in mammals.

Rh factor – A series of genes present in primates that is responsible for fetal erithroblastosis, when present in mother and fetus maladaptive condition.

Rhombencephalon – A part of hind brain found in primitive in vertebrates.

Renal capsule – It's also known as Bowman capsule, it is a filtration area of kidney in vertebrates.

Ringer's solution – A isotonic standard salt solution it is used as a medium for living cells.

Reactive system –In the embryonic induction the tissue or any part of organ act as a inducer.

S

Shield – A plate like structure formed by group of cells, these are a part of hypoblast layer. In later stage of embryonic covert in somites, notochord and nerve chord of developing embryo.

Somites - These are a paired blocks arranged bilaterally Develop into dermis, vertebrae, and skeletal muscle.

Saccule – A part of internal ear it is also derived cochlea associated with eight or auditory nerve.

Sarcoma – A tumor formed by uncontrolled division of the cellists a malignant part of organ or tissue .originally it is part of mesenchymal tissue.

Sacrotum – It is a sac like outer part of male (mammalian) genital organ and containing the testies.

Secondary Oocyte – An intermediate stage between ovum and primary oocyte, it is also haploid or diploid dependent upon considered species.

Secondary sex character – Some structure or characteristic feature found in male and female exclusive of the gonad.

Secretin – It is a duodenum producing hormone, its main function is controlling exocrine functions of pancreas.

Segmentation - The activity of dividing into different parts, it is also used synonymously with cleavage of the ovum.

Semen - The fluid secrete by the testis by the ducts difference.

Semination - A fertilizing act in that a process of discharge of spermatozoa.

Somniferous tubule - In animals a unit of testis in which male germinal epithelium takes in a tubular form.

Septum - A tissue or group of cells make a plate or band like structure between two or more regions it is also oblique, transfer and interatrial.

T

Telolecital egg - Eggs with a large amount of yolk concentrated in one hemisphere. This hemisphere is referred to as the vegetal pole. Zebrafish have telolecital eggs.

Totipotency– The potential of a cell to divide and produce any of the differentiated cells found in an adult form of the organism.

Transcription -The process by which messenger RNA is synthesized from a DNA template strand; resulting in the transfer of genetic information from the DNA molecule to messenger RNA.

Tilobiosis –End part to end part fusion of embryo.

Telocoel – A type of coelom found in the epencephalon part of the brain of embryo.

Telosynapsis – Fusion of different chromosomes with each other's by end to end part.

Tendon – A band of connective tissue it's a white fibrous band and connects with muscles.

Testis –Male genital part or gonad.

Tetrads – In the meiotic division homologous chromosomes become duplicate longitudinally in anticipation and the end part will appear as a group of four chromosomes, make a tetrad.

Theca extrna – A loose connective tissue or an outer most covering of ovarian follicle,

Tonus –Tonicity, condition of slight tension maintained by nerve control of normal muscles.

Tubules –A hollow tube like structure modified as work such as collecting, mesonephric and somniferous.

Transgenic Organism - An organism whose genome has been genetically modified using genetic engineering techniques.

Thyroid – It is an endocrine gland its origin an endodermal thinking on the wall of pharynx between second pair of visceral arches.

Transplant – An embryonic tissue, cell or organ remove from different environmental Condition.

Transverse –A plane of divisions in which cell divided anterior posterior in right angles, it's separating more anterior to most posterior.

Trophoblast – Outer most layer of mammalian blastocystit act as the chorionic membrane, primary active agent in implantation.

Tympanic cavity – A cavity present in the middle ear, a vestige of hyomendibuler pouch.

Tyrosine Transaminase – A catalyzing enzyme for vitamin B6 catabolism they transfer amino group from tyrosine to ketotyrosine.

U

Umbalica chord – A connection between mother and fetus for circulation of blood and it's a part of uterus blood vessels.

Undifferentiated zone – A region of developing embryo this cells are undifferentiated, each cell is capable fof bcome different type of cells.

Unregimented mesoderm - A differentiate par of axial mesoderm they convert in somites .

Uterine cycle – It's a part of menstruation cycle in females its main function is provide a healthy environment for developing blastocyst.

Urodeless – A specific group of amphibians, salamanders are included in this,

Umbilical stalk –Cord or naval stalk or a sheath like structure it continuous with the embryonic body wall, enclosing yolk stalk and allantoce talk and also their blood vessels.

Umbilical Vein – Allantoic vein of a developing fetus work as a blood suppler.

Ureter –A ducted part of urinary system it transporting urine from the metanepros to the urinary bladder**.**

Uric Acid –insoluble breakdown product of purine metabolism and also excretory product or repliles, birds and some of mammalians.

Urinary bladder- A vesicle likes endodermal lined structure driver from hindgut, it is also a homologous part of chick allantois.

Uterus –sac like enlarge distal part of oviduct it is modified for the retention of eggs in mammals.

Utriculus –A central divisional part of inner ear it derived from vestibule in vertebrate.

V

Vegetal Pole- In embryology during the development of a embryo the zygot firstly divided in the multiceluler structure or called blastomers ,these are differentiate in tow paret ,where the nucleous is present its animal pole and another one is vegetal pole in which the yolk is present..

Ventral - The front of the animal. . The chest is on the ventral side of a human and the belly is on the ventral side of a fish.

Vagina – A distal most division of the female genital part.

Vasa defrantia - Ducted part of male genital organs and it is connected with testis through vasa efferentia originally it's a mesonepharic gonoduct.

Ventral sucker – In the tade pole of Anuran a mouth opening or mouth is present.

Verinx Caseosa – An accumulated integumentary secration and also defoliation of human fetus.

Vestibule – A part of internal ear in vertebrates it is composed with the succulus and utriculus.

Visceral Cleft – A group of gills or pharyngeal gill slits.

Visceral Furrow –A groove is present or corresponding with visceral pouch, it is also a ectodermic part.

Visceral Plexus – Sympathetic neurons aggregation which is control viscera, having migrated posterior from tenth number cranial ganglia.

V ital stain – A group of nontoxic dyes they used to stain living tissues, e.g Nile blue, netural red and sulfate**.**

Vitelline – A membrane of protein it cover of egg yolk.

Visceral pouch – A outgrowth of endodermic layer evagination with the pharynx.

Vitelline substance – Nutritive element of a developing embryo its yolk.

Vitreous Humor. Viscous fluid of eye chamber back side of the lens it formed from the budding part of the retinal wall and from inner side of the lens.

W

Wild type – The trait or allele that is most commonly found in natural populations.

White matter - A myelin sheath present in spin al chord and brain produced by axons.

Wolffian - It is a ducted part of excretory organ in developing embryo, formed by mesoderm,

Wound Hormone-A undefined nature substance released by the damaged tissue and also repair or growth.

X

X - Chromosome inactivation – In females a set of chromosomes xx is present,in x chromosome highly dance heterochromatin is present its bar body .irreversible conversion in x chromose is seen.

Y

Yolk- Cell - A large cell at the vegetal pole of the embryo that contains yolk and does not divide.

Yolk stalk – A connection of splanchoplure and intestine with a cord like structure of developing embryo with the yolk sac.

Yolk –A reserve nutritional material**,** mostly stored in egg and it use during development of the embryo.

Yolk duct –A pore like structure found in yolk sac and its opining in gut of embryo in vertebrate having a yolk sac.

Yolk plug – A pore is present in blastula of amphibian is called blastopore and an exposed part of endodermal cells is yolk plug.

Yolk sac – This is a nutrition supplier in birds and reptiles and first extraembyonic membrane drives by splanchnoplure.a stolk like structure present in this attached with mid gut and also structurally similar as gut.

Yolk syncytial layer – During embryonic development of zebra fish a group of cells present. These are part of embryo but marginal side of embryo connected with the yolk nuclei and also makes a ring like structure.

Yolk Syncytial Layer (YSL) - Region in zebrafish where a continuous layer of multinucleate, non-yolk containing cytoplasm forms at the interface between the animal and vegetal poles.

Z

Zygote period - The union of two different type of cells one is the sperm and another one is egg cell ,that is the fertilization and cell is zygote , it begin as signal cell but rapid division occur initially and it convert in multicellular structure .

Zebrabow – For the purpose of expression of florescent protein in different amount and combination in cells, in transgenic zebra fish, in this process labeled the embryo with different color in developing embryo.

Zona pellucida – A membranous coat around mammalian egg, it is a glycoprotein structure and it is secreted and synthesized by oocytes.

Zygote – This is basic structure of life it formed by a event known as fertilization or fusion of two different gametes.

Zone marginal - A presumptive chorda-mesodermal complex it found in junction of roof and floor of early gastrula stage of development.

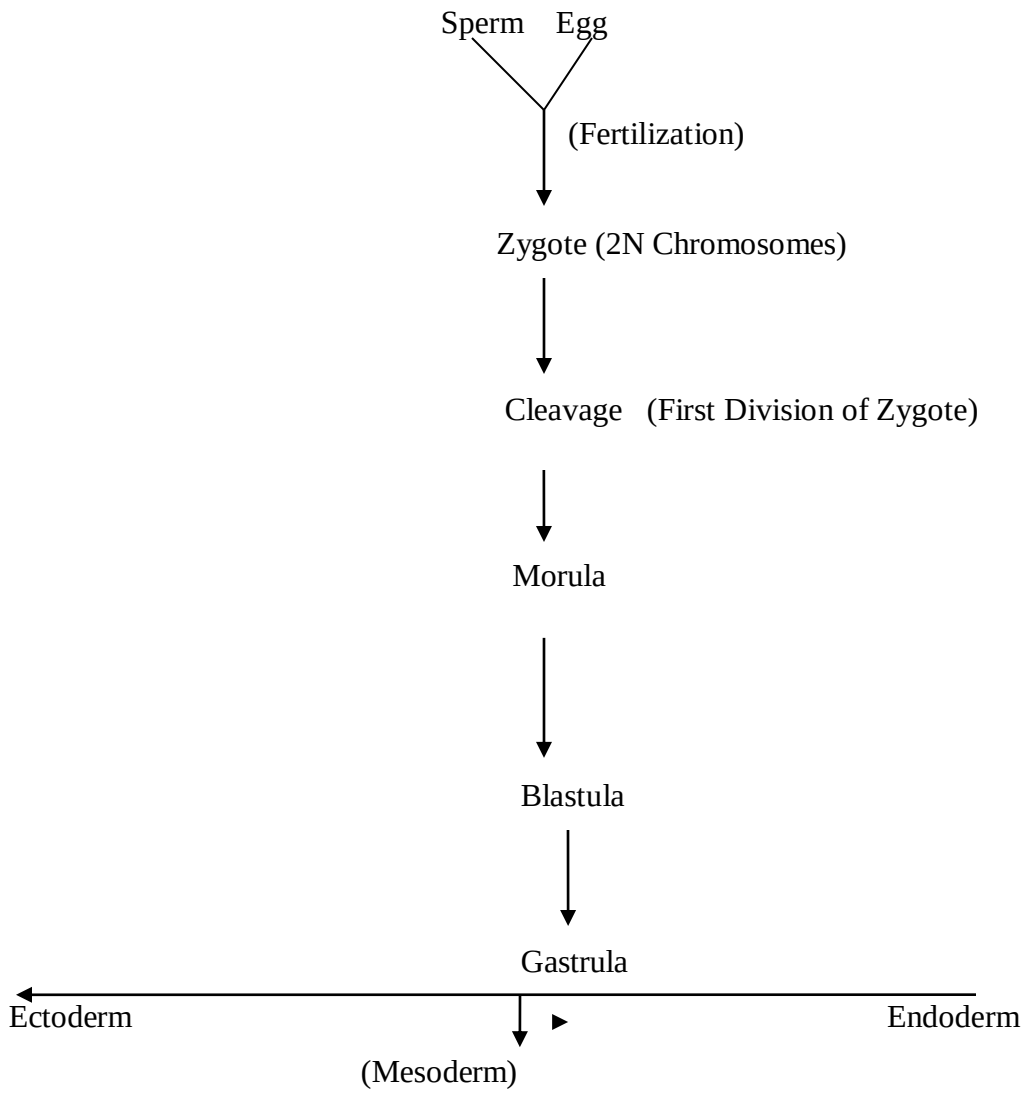
Zymozen - Intracellular granules which are secrete or release exterior, become an enzyme secretion.

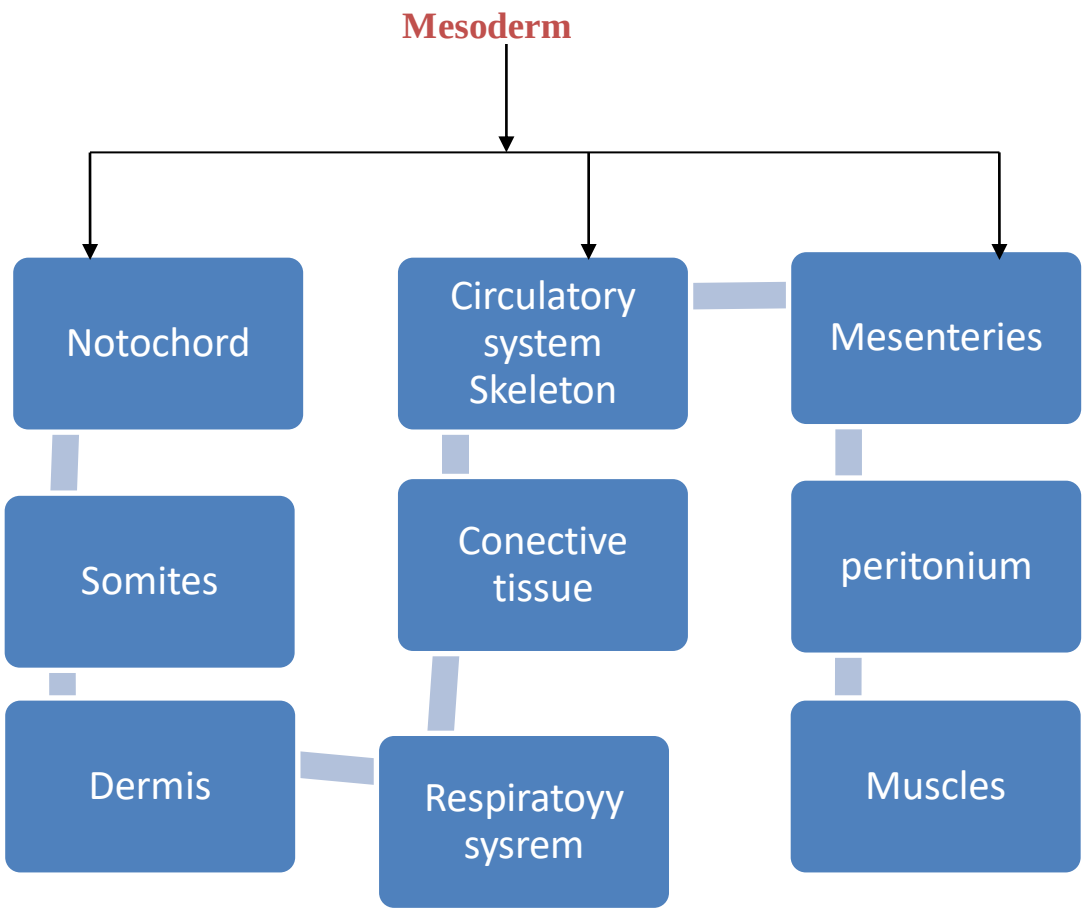
Zygotene – It's found in meiotic first division also second stage of prophase I. the homologous chromosomes paired side by side.

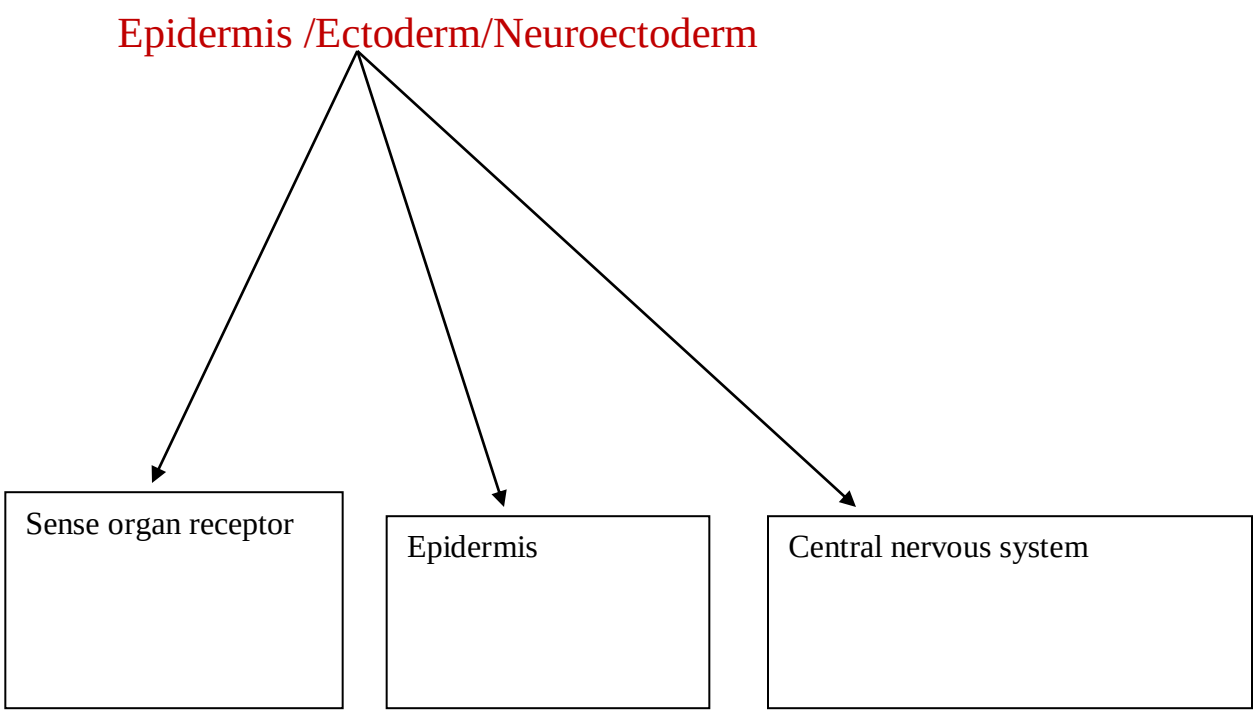
Different cleavage types in eggs

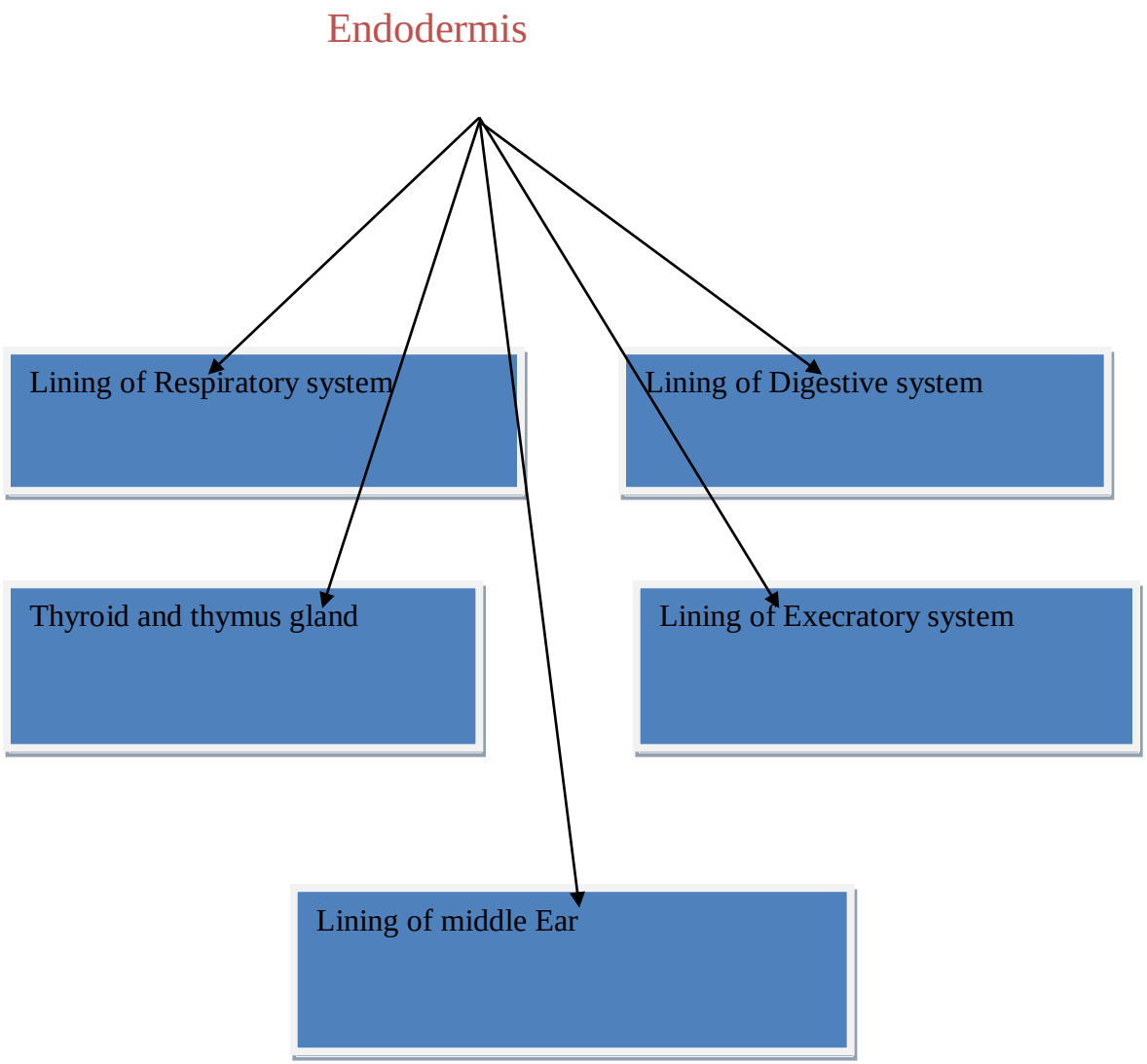
S.N	Type of Cleave	Yolk in eggs	Pattern in cleaves	Example
1	Holoblastic clevag (complete cleavage)	(A)Isolacithal Eggs.	(1)Radial (2)Spiral (3)Bilateral (4)Rotinal(Random)	1.Ecinodermata 2.Mollauscs 3.Tunicates 4.Mammals
		(B)Mesolacithal Eggs	(1)Radial	(1) Amphibian
2	Meroblastic cleavage (incomplete)	(A)Telolacithal	(1)Bilateral (2)Discoidal	(1)Cephalopods (2)Reptiles
		(B)Centrolecithal	(1) Superficial	(1)Arthopods

Flow Chart showing the Fate of three Germ Layer Ectoderm, Endoderm and Mesoderm

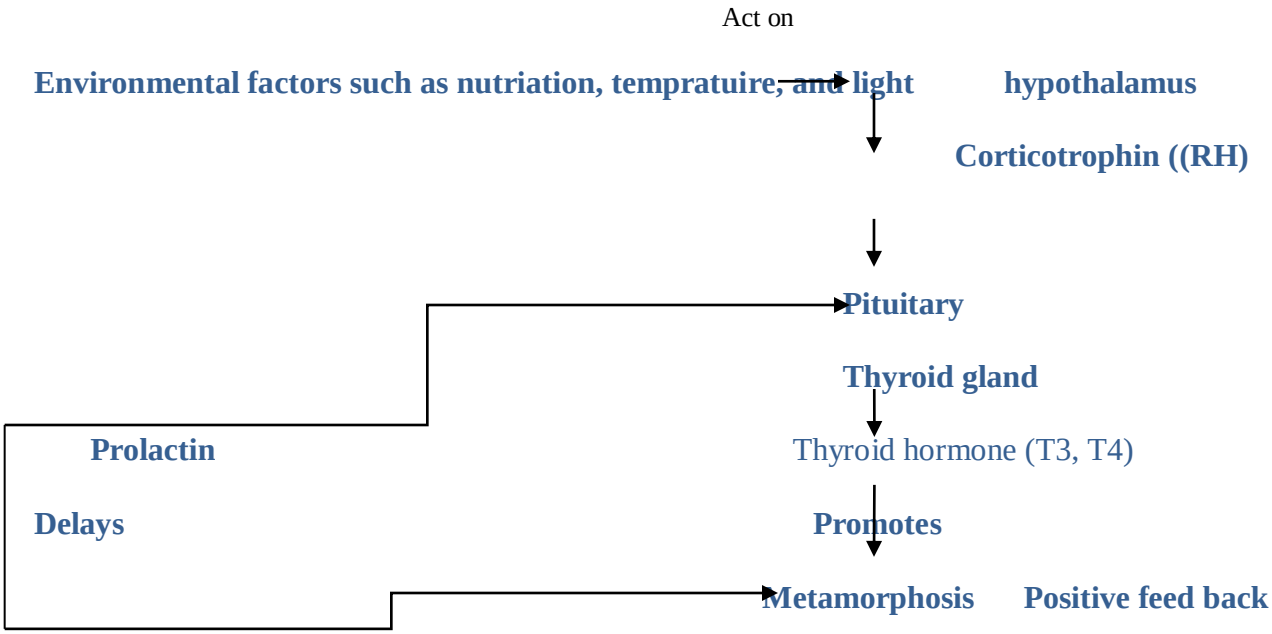


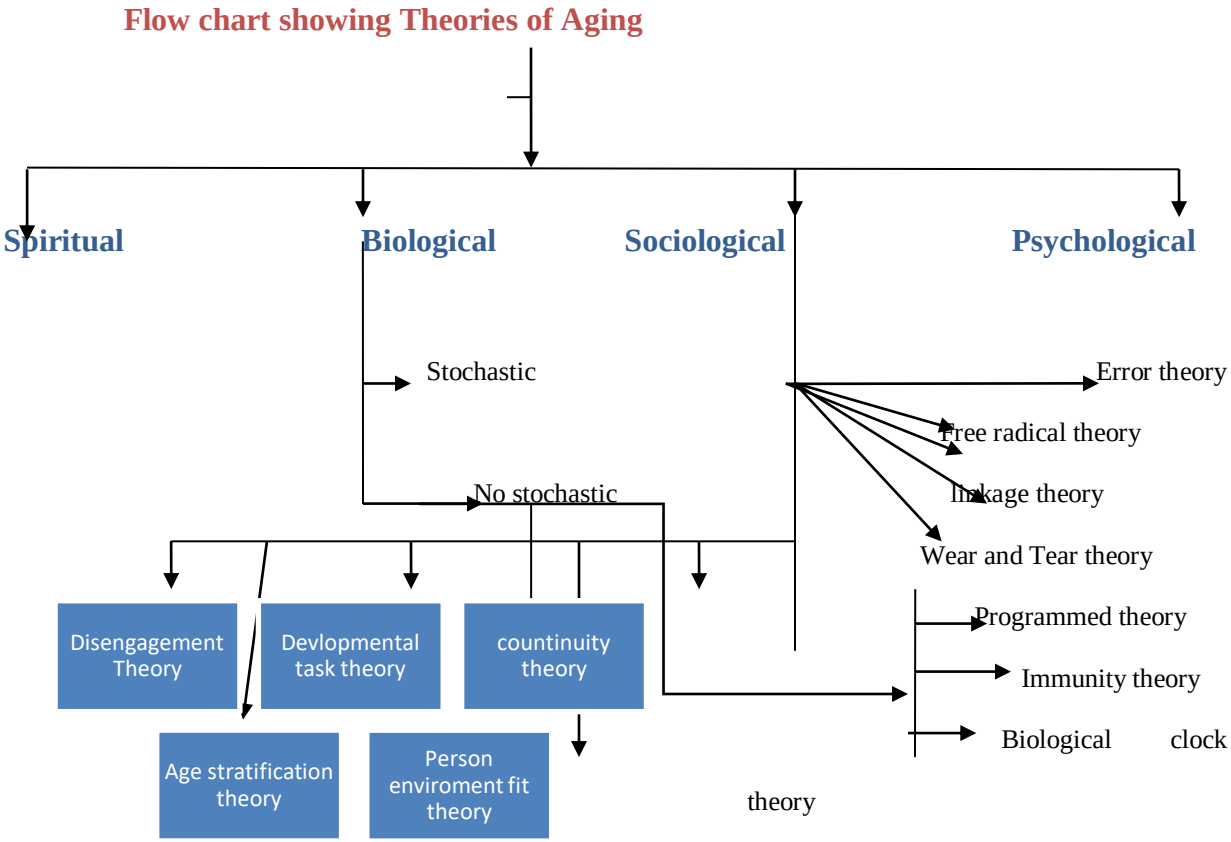

Mesoderm
Notochord
Circulatory system Skeleton
Mesenteries
Somites
Conective tissue
peritonium
Dermis
Respiratoyy sysrem
Muscles

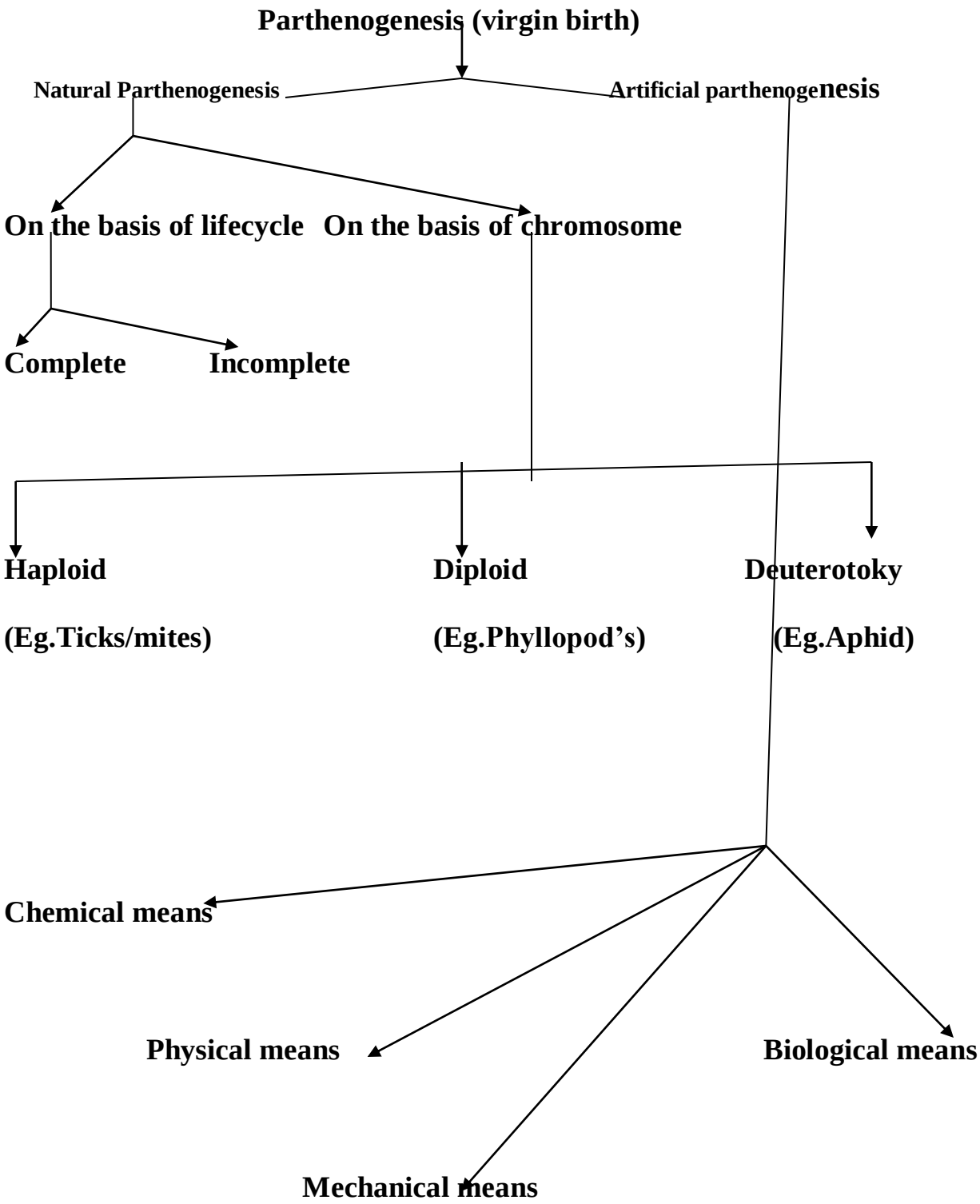

Epidermis /Ectoderm/Neuroectoderm
Sense organ receptor
Epidermis
Central nervous system


Endodermis
Lining of Respiratory system
Lining of Digestive system
Thyroid and thymus gland
Lining of Execratory system
Lining of middle Ear

A flow chart showing Amphibian Metamorphosis.

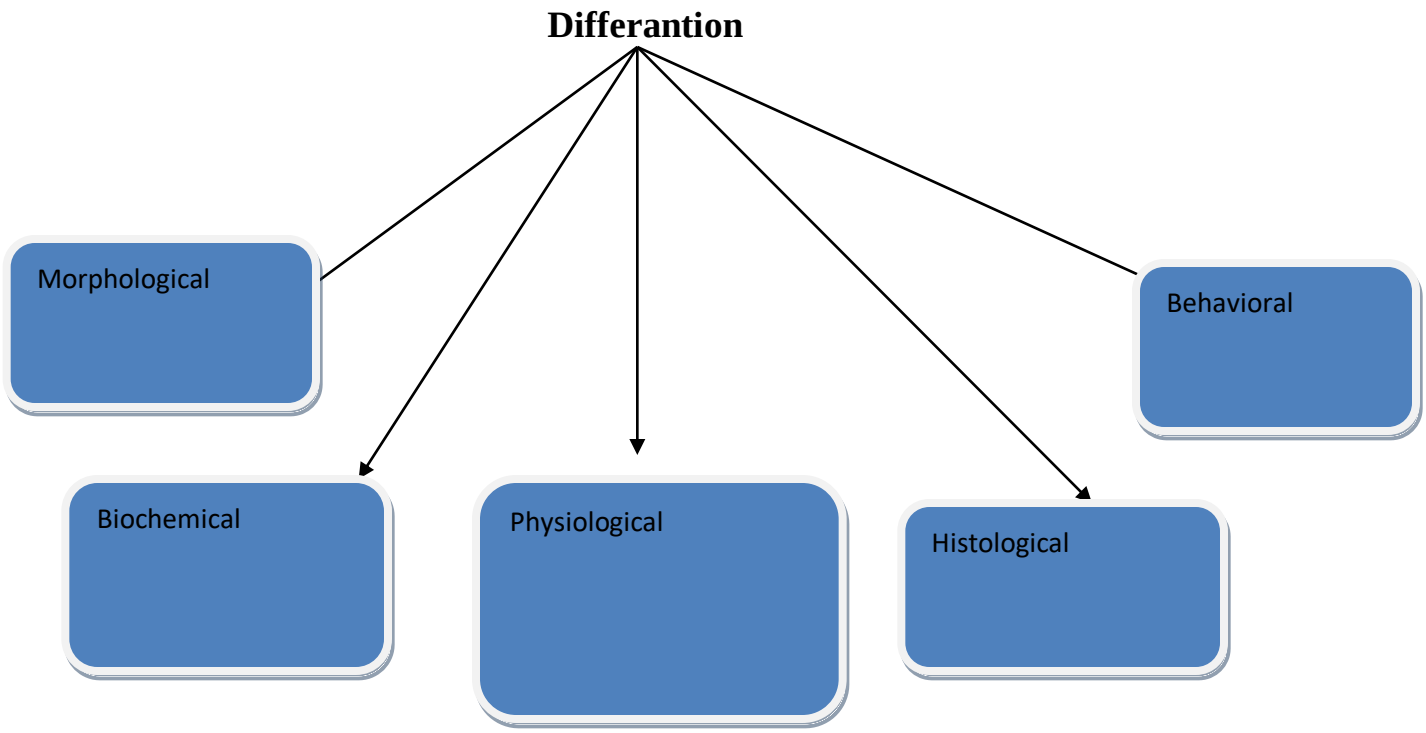



Flow chart showing Theories of Aging
Spiritual
Biological
Sociological
Psychological
Stochastic
No stochastic
Error theory
Free radical theory
Linkage theory
Wear and Tear theory
Programmed theory
Immunity theory
Biological clock
theory
Disengagement Theory
Devlopmental task theory
countinuity theory
Age stratification theory
Person enviroment fit theory

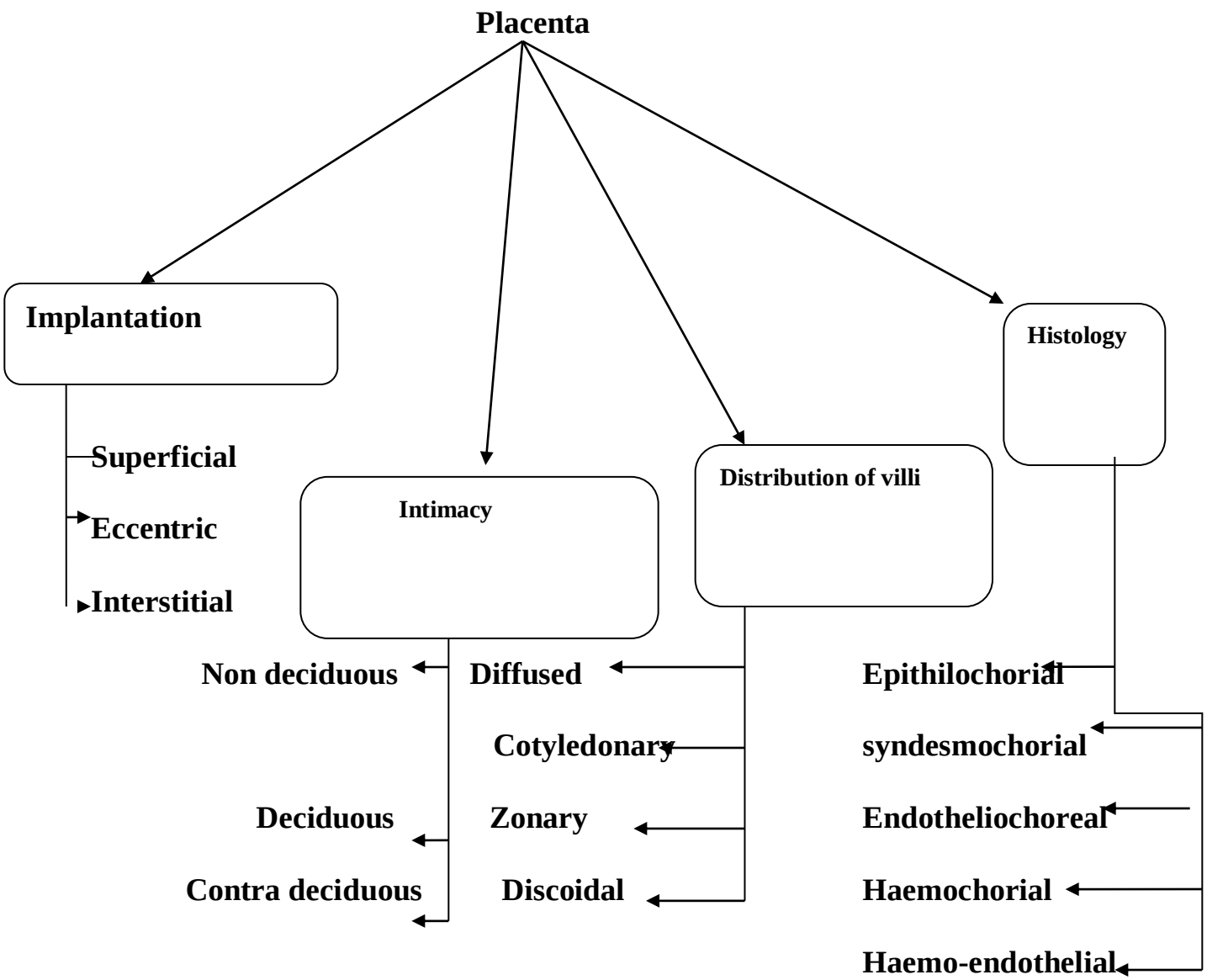


Flow chart of types of parthenogenesis

Flow chart of types of Differantion in animals on the basis of cells origin



Flow chart of Classification of placenta on different basis



Embryology is a branch of biology which has a most immediate bearing on the problem of life. The essence of embryonic development is change transition from one stage to another .Embryo is a fleeting state, a continuum along the axis of time.

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2. Size and action by Caroline Pond; Caroline M Pond; Open University. Animal Physiology Course Team. Print book View all formats and languages »Language: English Publisher: Milton Keynes : Open University, 1995
3. Development by Brian C Goodwin; Print book View all formats and languages Language: English Publisher: Sevenoaks, Kent : Holder & Stoughton ; Milton Keynes : Open University, 1991
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