



ST. LAWRENCE HIGH SCHOOL



A JESUIT CHRISTIAN MINORITY INSTITUTION
SELECTION TEST 2019

Sub: BIOLOGICAL SCIENCE

Class: XII

F.M: 70

Duration: 3 hours 15 Minutes

Date: 23.11.2019

SECTION -I

1. 1x14=14
- i) The vitamin whose concentration increases following the conversion of milk into curd by lactic acid bacteria
- (1) Vitamin C
 - (2) Vitamin D
 - (3) Vitamin B 12**
 - (4) Vitamin E
- ii) Amoeba and yeast reproduce asexually by fission and budding respectively because they are
- (1) Microscopic
 - (2) Heterotrophic
 - (3) Unicellular**
 - (4) Uninucleate
- iii) In the embryos of a typical dicot and a grass, true homologous structures are
- (1) Coleorrhiza and coleoptile
 - (2) Coleoptile and scutellum
 - (3) Cotyledons and scutellum**
 - (4) Hypocotyls and radical
- iv) Which of the following alcoholic beverages is produced without distillation?
- (1) Whisky
 - (2) Beer**
 - (3) Rum
 - (4) Brandy
- v) The membranous cover of the ovum at ovulation is
- (1) Corona radiata
 - (2) Zona radiata
 - (3) Zona pellucida**
 - (4) Chorion
- vi) Methanogenic bacteria are not found in
- (1) Rumen of cattle
 - (2) Gobar gas plant
 - (3) Bottom of water logged paddy fields**
 - (4) Activated sludge
- vii) Which of the following hormones is not secreted by human placenta?
- (1) hCG
 - (2) Estrogen
 - (3) Progesterone

(4) LH

- viii) The correct surgical procedure as a contraceptive method is
(1) Ovariectomy
(2) Hysterectomy
(3) Vasectomy
(4) Castration
- ix) Distance between the genes and percentage of recombination shows _____ relationship
(1) Direct
(2) inverse
(3) parallel
(4) no
- x) A person having genotype $I^A I^B$ would show blood group AB due to
(1) Pleiotropy
(2) Co-dominance
(3) Segregation
(4) Incomplete dominance
- xi) Net electric charge on DNA and Histones is
(1) Both positive
(2) Both negative
(3) Negative and positive respectively
(4) Zero
- xii) Fossils are generally found in
(1) Sedimentary rocks
(2) Igneous rocks
(3) Metamorphic rocks
(4) Any type of rock
- xiii) Site of production of ADA in the body is
(1) Bone marrow
(2) Lymphocytes
(3) Blood plasma
(4) Monocytes
- xiv) Which of the following is not a producer?
(1) Spirogyra
(2) Agaricus
(3) Volvox
(4) Nostoc

Section-II

Answer the following questions:-

1x4=4

1. Name a plant where thalamus contributes to fruit formation.

Apple

2. What is DNA polymorphism?

DNA polymorphisms are the different DNA sequences among individuals, groups, or populations. Polymorphism at the DNA level includes a wide range of variations from single base pair change, many base pairs, and repeated sequences. Genomic variability can be present in many forms, including single

nucleotide polymorphisms (SNPs), variable number of tandem repeats (VNTRs, e.g., mini- and microsatellites), transposable elements (e.g., Alu repeats), structural alterations, and copy number variations.

Or

Mention any one important characteristic of *Homo habilis*.

This species, one of the earliest members of the genus Homo, has a slightly larger braincase and smaller face and teeth than in Australopithecus or older hominin species. But it still retains some ape-like features, including long arms and a moderately-prognathic face. This species was more ape-like than previously believed.

3. What are interferons ?

Interferons (IFNs) are a group of signaling proteins made and released by host cells in response to the presence of several pathogens, such as viruses, bacteria, parasites, and also tumor cells.

Or

Write any one function of benzodiazepine drugs.

Benzodiazepines enhance the effect of the neurotransmitter gamma-aminobutyric acid (GABA) at the GABA receptor, resulting in sedative, hypnotic (sleep-inducing), anxiolytic (anti-anxiety), anticonvulsant, and muscle relaxant properties.

4. What is Dobson unit?

A unit of measurement for the total amount of ozone in the atmosphere above a point on the earth's surface, one Dobson unit being equivalent to a layer of pure ozone 0.01 mm thick at standard temperature and pressure.

Group-B

Answer the following questions:-

2x5=10

5. Describe the structure of a typical matured pollen grain

Pollen grains are microscopic structures that vary in size and shape. There are three main components of a pollen grain. The inside of the grain is made up of cytoplasm. This fluid medium houses the aforementioned living cells, keeping them moist and alive. The outer shell is made up of two layers. The inside layer is aptly named the intine (think interior). It is composed partly of cellulose, a common component in the cell walls of plant cells. Inside this tough shell lie two cells: the tube cell, which will eventually become the pollen tube, and a generative cell, which contains the male sperm nuclei needed for fertilization. The tough outer layer is known as the exine (think exterior) which is rich in a compound known as sporopollenin.

6. What is ICSI?

Intracytoplasmic sperm injection (ICSI) is an in vitro fertilization (IVF) procedure in which a single sperm cell is injected directly into the cytoplasm of an egg. ICSI is done for male infertility.

What are sporozoites? Where are they formed?

A sporozoite is the cell form that infects new hosts. They leave the mosquito during a blood meal, and enter liver cells (hepatocytes), where they multiply. Cells infected with sporozoites eventually burst, releasing merozoites into the bloodstream. Sporozoites are motile and they move by gliding.

In Plasmodium, for instance, the sporozoites are cells that develop in the mosquito's salivary glands

Or

Write any four characteristics of withdrawal symptoms of drugs or alcohol.

- **Pain areas: in the muscles**
- **Whole body: excessive hunger, fatigue, loss of appetite, night sweats, shakiness, clammy skin, craving, feeling cold, or sweating**
- **Behavioural: agitation, crying, excitability, irritability, restlessness, or self-harm**
- **Psychological: delirium, depression, hallucination, paranoia, or severe anxiety**
- **Gastrointestinal: gagging, nausea, vomiting, flatulence, or stomach cramps**
- **Cognitive: disorientation, mental confusion, racing thoughts, or slowness in activity**
- **Mood: boredom, feeling detached from self, loss of interest or pleasure in activities, or nervousness**
- **Sleep: insomnia, nightmares, sleepiness, or sleeping difficulty**
- **Nasal: congestion or runny nose**
- **Eyes: dilated pupil or watery eyes**
- **seizures, sensitivity to pain, slurred speech, teeth chattering, tingling feet, trembling, tremor, or weakness**

7. What is the mode of action of Bt toxin?

Cry toxins have specific activities against insect species of the orders Lepidoptera (moths and butterflies), Diptera (flies and mosquitoes), Coleoptera (beetles), Hymenoptera (wasps, bees, ants and sawflies) and against nematodes. Thus, B. thuringiensis serves as an important reservoir of Cry toxins for production of biological insecticides and insect-resistant genetically modified crops. When insects ingest toxin crystals, their alkaline digestive tracts denature the insoluble crystals, making them soluble and thus amenable to being cut with proteases found in the insect gut, which liberate the toxin from the crystal. The Cry toxin is then inserted into the insect gut cell membrane, paralyzing the digestive tract and forming a pore. The insect stops eating and starves to death; live Bt bacteria may also colonize the insect which can contribute to death.

Or

What is RNAi?

*RNA interference, usually abbreviated as RNAi, is a gene-silencing effect first discovered in the course of transgenic experiments on the nematode *Caenorhabditis elegans*, and subsequently found to be widely distributed in eukaryotes. This method involves silencing of a specific mRNA due to a complementary dsRNA molecule that binds to and prevents translation of the mRNA (silencing).*

8. What is biofortification?

Biofortification is the process by which the nutritional quality of food crops is improved through agronomic practices, conventional plant breeding, or modern biotechnology. Biofortification differs from conventional fortification in that biofortification aims to increase nutrient levels in crops during plant growth rather than through manual means during processing of the crops. Biofortification may therefore present a way to reach populations where supplementation and conventional fortification activities may be difficult to implement and/or limited.

Or

What is primary productivity? What are the factors on which it depends?

***Primary productivity** is a term used to describe the rate at which plants and other photosynthetic organisms produce organic compounds in an ecosystem. There are two aspects of primary productivity:*

- ***Gross productivity** = the entire photosynthetic production of organic compounds in an ecosystem.*
- ***Net productivity** = the organic materials that remain after photosynthetic organisms in the ecosystem*

have used some of these compounds for their cellular energy needs (cellular respiration).

Group - C

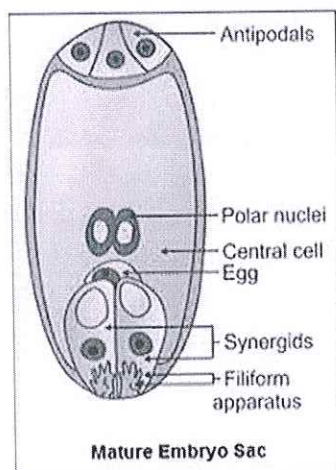
Answer the following questions: -

3x9= 27

9. Describe the structure of female gametophyte in plants.

3

In a majority of flowering plants, one of the megaspores is functional while the other three degenerate. Only the functional megaspore develops into the female gametophyte (embryo sac). This method of embryo sac formation from a single megaspore is termed monosporic development. The nucleus of the functional megaspore divides mitotically to form two nuclei which move to the opposite poles, forming the 2-nucleate embryo sac. Two more sequential mitotic nuclear divisions result in the formation of the 4-nucleate and later the 8-nucleate stages of the embryo sac. It is of interest to note that these mitotic divisions are strictly free nuclear, that is, nuclear divisions are not followed immediately by cell wall formation. After the 8-nucleate stage, cell walls are laid down leading to the organisation of the typical female gametophyte or embryo sac. Observe the distribution of cells inside the embryo sac (Figure 2.8b, c). Six of the eight nuclei are surrounded by cell walls and organised into cells; the remaining two nuclei, called polar nuclei are situated below the egg apparatus in the large central cell. There is a characteristic distribution of the cells within the embryo sac. Three cells are grouped together at the micropylar end and constitute the egg apparatus. The egg apparatus, in turn, consists of two synergids and one egg cell. The synergids have special cellular thickenings at the micropylar tip called filiform apparatus, which play an important role in guiding the pollen tubes into the synergid. Three cells are at the chalazal end and are called the antipodals. The large central cell, as mentioned earlier, has two polar nuclei. Thus, a typical angiosperm embryo sac, at maturity, though 8-nucleate is 7-celled.



Or

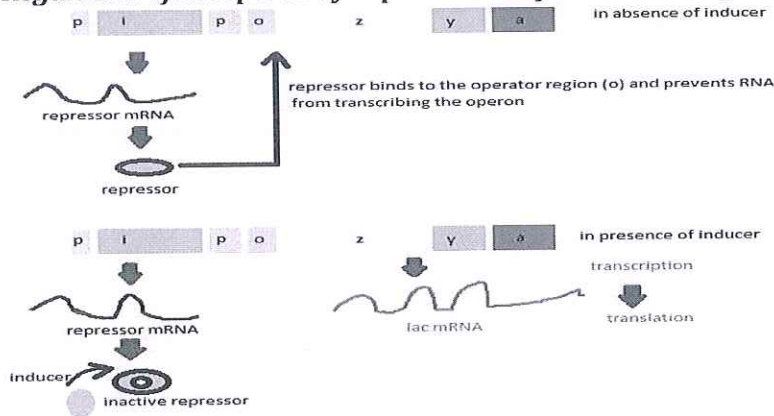
Mention any two properties of cleistogamous flowers. Give one example. 2+1 **Cleistogamous flowers which do not open at all. In such flowers, the anthers and stigma lie close to each other. When anthers dehisce in the flower buds, pollen grains come in contact with the stigma to effect pollination. Thus, cleistogamous flowers are invariably autogamous as there is no chance of cross-pollen landing on the stigma. Cleistogamous flowers produce assured seed-set even in the absence of pollinators.**

e.g.- peanuts, peas, and pansy

10. Why is lactose an inducer for beta-galactosidase enzyme?

3

Lactose is termed as inducer as lactose is the substrate for the enzyme beta-galactosidase and it regulates switching on and off of the operon. In the absence of inducer, the repressor of the operon is synthesized (all-the-time – constitutively) from the *i* gene. The repressor protein binds to the operator region of the operon and prevents RNA polymerase from transcribing the operon. In the presence of inducer, the repressor is inactivated by interaction with the inducer which allows RNA polymerase access to the promoter and transcription proceeds. Regulation of lac operon by repressor is referred to as negative regulation.

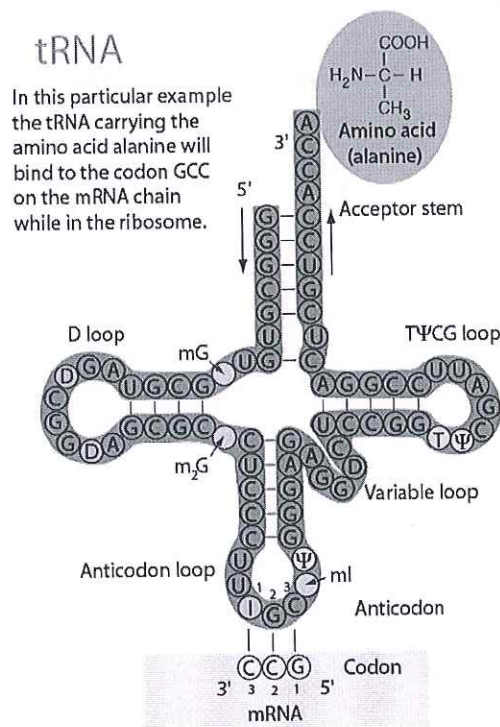


11. What is adaptive radiation? Mention any one molecular evidence of evolution. 2+1

Or

Describe the structure of a tRNA molecule. What is the importance of UTRs in translation?

RNA has an anticodon loop that has bases complementary to the code, and it also has an amino acid acceptor end to which it binds to amino acids. tRNAs are specific for each amino acid (Figure 6.12). For initiation, there is another specific tRNA that is referred to as initiator tRNA. There are no tRNAs for stop codons. The secondary structure of tRNA has been depicted that looks like a clover-leaf.



A translational unit in mRNA is the sequence of RNA that is flanked by the start codon (AUG) and the stop codon and codes for a polypeptide. An mRNA also has some additional sequences that are not translated and are referred as untranslated regions (UTR). The UTRs are efficient translation process.

12. What are the features of a cloning vector?

3

The following are the features that are required to facilitate cloning into a vector.

(i) Origin of replication (ori) : This is a sequence from where replication starts and any piece of DNA when linked to this sequence can be made to replicate within the host cells. This sequence is also responsible for controlling the copy number of the linked DNA. So, if one wants to recover many copies of the target DNA it should be cloned in a vector whose origin support high copy number.

(ii) Selectable marker : In addition to 'ori', the vector requires a selectable marker, which helps in identifying and eliminating non- transformants and selectively permitting the growth of the transformants.

(iii) Cloning sites: In order to link the alien DNA, the vector needs to have very few, preferably single, recognition sites for the commonly used restriction enzymes. Presence of more than one recognition sites within the vector will generate several fragments, which will complicate the gene cloning. The ligation of alien DNA is carried out at a restriction site present in one of the two antibiotic resistance genes.

(iv) Vectors for cloning genes in plants and animals :. For example, Agrobacterium tumifaciens, a pathogen of several dicot plants is able to deliver a piece of DNA known as 'T-DNA' to transform normal plant cells into a tumor and direct these tumor cells to produce the chemicals required by the pathogen

So, once a gene or a DNA fragment has been ligated into a suitable vector it is transferred into a bacterial, plant or animal host (where it multiplies).

Or

Describe the process of separation of isolated DNA fragments.

3

Separation and isolation of DNA fragments : The cutting of DNA by restriction endonucleases results in the fragments of DNA. These fragments can be separated by a technique known as gel electrophoresis. Since DNA fragments are negatively charged molecules they can be separated by forcing them to move towards the anode under an electric field through a medium/matrix. Nowadays the most commonly used matrix is agarose which is a natural polymer extracted from sea weeds. The DNA fragments separate (resolve) according to their size through sieving effect provided by the agarose gel. Hence, the smaller the fragment size, the farther it moves.

The separated DNA fragments can be visualised only after staining the DNA with a compound known as ethidium bromide followed by exposure to UV radiation .We can see bright orange coloured bands of DNA in a ethidium bromide stained gel exposed to UV light. The separated bands of DNA are cut out from the agarose gel and extracted from the gel piece. This step is known as elution. The DNA fragments purified in this way are used in constructing recombinant DNA by joining them with cloning vectors.

13. Write any three ways by which GM crops are more efficient than their wild varieties. 3

Genetic modification has: (elaborate any three with an example)

(i) made crops more tolerant to abiotic stresses (cold, drought, salt, heat).

(ii) reduced reliance on chemical pesticides (pest-resistant crops).

(iii) helped to reduce post harvest losses.

(iv) increased efficiency of mineral usage by plants (this prevents early exhaustion of fertility of soil).

(v) enhanced nutritional value of food, e.g., Vitamin 'A' enriched rice.

Or

What is GEAC? What is its importance?

1+2

GEAC (Genetic Engineering Approval Committee), make decisions regarding the validity of GM research and the safety of introducing GM-organisms for public services.

The manipulation of living organisms by the human race cannot go on any further, without regulation. Some ethical standards are required to evaluate the morality of all human activities that might help or harm living organisms.

Going beyond the morality of such issues, the biological significance of such things is also important. Genetic modification of organisms can have unpredictable results when such organisms are introduced into the ecosystem.

The modification/usage of living organisms for public services (as food and medicine sources, for example) has also created problems with patents granted for the same.

Therefore, the Indian Government has set up organisations such as GEAC (Genetic Engineering Approval Committee)

14. What is Ascariasis? How is it caused? What are its symptoms?

2+1

*Ascariasis is a infestation of the intestines with the roundworm *Ascaris lumbricoides**

**Ascaris lumbricoides*, an intestinal parasite causes ascariasis.*

Symptoms of these disease include internal bleeding, muscular pain, fever, anemia and blockage of the intestinal passage.

The eggs of the parasite are excreted along with the faeces of infected persons which contaminate soil, water, plants, etc.

A healthy person acquires this infection through contaminated water, vegetables, fruits, etc.

15. What is the chemical composition of 'smack'? Which group of drugs does it belong to and mention its functions in the body.

2+1

*Heroin commonly called smack is chemically diacetylmorphine which is a white, odourless, bitter crystalline compound and is obtained by acetylation of morphine extracted from the latex of poppy plant *Papaver somniferum*.*

Opioids

Opioids are the drugs which bind to specific opioid receptors present in our central nervous system and gastrointestinal tract. Heroin is a depressant and slows down body functions

Or

Mention the role of microbes in producing bioactive molecules.

3

Streptokinase produced by the bacterium Streptococcus and modified by genetic engineering is used as a 'clot buster' for removing clots from the blood vessels of patients who have undergone myocardial infarction leading to heart attack.

Another bioactive molecule, cyclosporin A, that is used as an immunosuppressive agent in organ-transplant patients, is produced by the fungus Trichoderma polysporum. Statins produced by the yeast Monascus purpureus have been commercialised as blood-cholesterol lowering agents. It acts by competitively inhibiting the enzyme responsible for synthesis of cholesterol.

16. What are the steps of decomposition of organic matter? Describe the process of mineralization.

2+1

Decomposers break down complex organic matter into inorganic substances like carbon dioxide, water and nutrients and the process is called decomposition. Dead plant remains such as leaves, bark, flowers and dead remains of animals, including fecal matter, constitute detritus, which is the raw material for decomposition. The important steps in the process of decomposition are fragmentation, leaching, catabolism, humification and mineralisation.

Detritivores (e.g., earthworm) break down detritus into smaller particles. This process is called fragmentation. By the process of leaching, water-soluble inorganic nutrients go down into the soil horizon and get precipitated as unavailable salts. Bacterial and fungal enzymes degrade detritus into simpler inorganic substances. This process is called as catabolism.

It is important to note that all the above steps in decomposition operate simultaneously on the detritus. Humification and mineralisation occur during decomposition in the soil. Humification leads to accumulation of a dark coloured amorphous substance called humus that is highly resistant to microbial action and undergoes decomposition at an extremely slow rate. Being colloidal in nature it serves as a reservoir of nutrients. The humus is further degraded by some microbes and release of inorganic nutrients occur by the process known as mineralisation.

Or

What is sere? Explain the term 'ecological succession' with a suitable example.

1+2

An important characteristic of all communities is that their composition and structure constantly change in response to the changing environmental conditions. This change is orderly and sequential, parallel with the changes in the physical environment. These changes lead finally to a community that is in near equilibrium with the environment and that is called a climax community. The gradual and fairly predictable change in the species composition of a given area is called ecological succession. During succession some species colonise an area and their populations become more numerous, whereas populations of other species decline and even disappear.

The entire sequence of communities that successively change in a given area are called sere(s). The individual transitional communities are termed seral stages or seral communities. In the successive seral stages there is a change in the diversity of species of organisms, increase in the number of species and organisms as well as an increase in the total biomass.

The present day communities in the world have come to be because of succession that has occurred over millions of years since life started on earth. Actually succession and evolution would have been parallel processes at that time.

Succession is hence a process that starts where no living organisms are there – these could be areas where no living organisms ever existed, say bare rock; or in areas that somehow, lost all the living organisms that existed there. The former is called primary succession, while the latter is termed secondary succession.

Examples of areas where primary succession occurs are newly cooled lava, bare rock, newly created pond or reservoir. In primary succession in water, the pioneers are the small phytoplanktons, they are replaced with time by rooted-submerged plants, rooted-floating angiosperms followed by free-floating plants, then reed-swamp, marsh-meadow, scrub and finally the trees. The climax again would be a forest. With time the water body is converted into land (Figure 14.5).

In secondary succession the species that invade depend on the condition of the soil, availability of water, the environment as also the seeds or other propagules present. Since soil is already there, the rate of succession is much faster and hence, climax is also reached more quickly.

Why small animals are rarely found in Polar Regions? What is diapause? 2+1

Small animals have a larger surface area relative to their volume, and they tend to lose body heat fast when it is cold outside. They have to expend much energy to generate body heat through metabolism. So, small animals are rarely found in polar regions.

Under unfavourable conditions many zooplankton species in lakes and ponds are known to enter diapause, a stage of suspended development.

Or

Describe the ethical argument for the conservation of biodiversity. What are sacred groves?

The ethical argument for conserving biodiversity relates to what we owe to millions of plant, animal and microbe species with whom we share this planet. Philosophically or spiritually, we need to realise that every species has an intrinsic value, even if it may not be of current or any economic value to us. We have a moral duty to care for their well-being and pass on our biological legacy in good order to future generations.

India has also a history of religious and cultural traditions that emphasised protection of nature. In many cultures, tracts of forest were set aside, and all the trees and wildlife within were venerated and given total protection. Such sacred groves are found in Khasi and Jaintia Hills in Meghalaya, Aravalli Hills of Rajasthan, Western Ghat regions of Karnataka and Maharashtra and the Sarguja, Chanda and Bastar areas of Madhya Pradesh. In Meghalaya, the sacred groves are the last refuges for a large number of rare and threatened plants. 1+2

Group- D

Answer the following questions:-

5x3=15

17. Describe briefly the process of spermatogenesis in males. What are the accessory glands and their functions? 3+2

Spermatogenesis: The origin and development of the sperm cells within the male reproductive organs, the testes. The testes are composed of numerous thin, tightly coiled tubules known as the seminiferous tubules; the sperm cells are produced within the walls of the tubules. Within the walls of the tubules, also, are many randomly scattered cells, called Sertoli cells, that function to support and nourish the immature sperm

cells by giving them nutrients and blood products. As the young germ cells grow, the Sertoli cells help to transport them from the outer surface of the seminiferous tubule to the central channel of the tubule.

1. **Spermatocytogenesis** : Stem cells divide mitotically to replace themselves and to produce cells that begin differentiation. Spermatogonia have spherical or oval nuclei, and rest on the basement membrane.

2. **Meiosis**: Cells in prophase of the first meiotic division are primary spermatocytes. Primary spermatocytes go through the first meiotic division and become secondary spermatocytes. The cells quickly proceed through this stage and complete the second meiotic division. The products of the second meiotic division are called spermatids. They are spherical cells with interphase nuclei. Since spermatids go through a metamorphosis into spermatozoa, they occur in early through late stages. All of these progeny cells remain attached to each other by cytoplasmic bridges. The bridges remain until sperm are fully differentiated.

3. **Spermiogenesis**:

This is the metamorphosis of spherical spermatids into elongated spermatozoa. No further mitosis or meiosis occurs. During spermiogenesis, the acrosome forms, the flagellar apparatus forms, and most excess cytoplasm (the residual body) is separated and left in the Sertoli cell. Spermatozoa are released into the lumen of the seminiferous tubule. A small amount of excess cytoplasm (the cytoplasmic droplet) is shed later in the epididymis.

Accessory glands:

- **Seminal vesicle, Prostate, Bulbourethral gland**-Secretions of these glands constitute the seminal plasma rich in fructose, calcium & enzymes & the secretion of bulbourethral gland helps in lubrication of penis.

Or

Describe the process of microsporogenesis in plants. What are the characteristics of wind pollinated flowers?

As each cell of the sporogenous tissue is capable of giving rise to a microspore tetrad. Each one is a potential pollen or microspore mother cell. The process of formation of microspores from a pollen mother cell (PMC) through meiosis is microsporogenesis. The microspore as they are formed are arranged in a cluster of four cells-the microspore tetrad. As the anthers mature & dehydrate the microspores dissociate from each other & develop into pollen grains.

- **Pollen grains are light in weight & non-sticky so that they can be transported easily.**
- **Possess well exposed stamens so that pollens are easily dispersed into wind currents**
- **Feathery stigma to trap air borne pollen grains.**

18. Describe briefly the technique of DNA fingerprinting and its importance. Why are genetic codes considered to be unambiguous and specific? 4+1

The technique of DNA Fingerprinting was initially developed by Alec Jeffreys. He used a satellite DNA as probe that shows very high degree of polymorphism. It was called as Variable Number of Tandem Repeats (VNTR). The technique involved Southern blot hybridisation using radiolabelled VNTR as a probe. It included

(i) isolation of DNA, (ii) digestion of DNA by restriction endonucleases, (iii) separation of DNA fragments by electrophoresis, (iv) transferring (blotting) of separated DNA fragments to synthetic membranes, such as nitrocellulose or nylon, (v) hybridisation using labelled VNTR probe, and (vi) detection of hybridised DNA fragments by autoradiography.

In addition to application in forensic science, it has much wider application, such as in determining population and genetic diversities. Currently, many different probes are used to generate DNA fingerprints.

19. What are the different levels of diversity found in living organisms? Explain any two types of negative interaction in organisms along with one example of each. 3+2

- *Gamma diversity-A single species might show high diversity at the genetic level .The genetic variation shown by Rauwolfia vomitoria growing in different Himalayan ranges varies in terms of potency & Concentration of active chemicals that the plant produces.*
- *Species diversity-The diversity at the species level.For example:Western ghats have a greater amphibian diversity than the Eastern ghats.*
- *Ecological diversity-At the ecosystem level as for instance India –rain forests, deserts, mangroves, coral reefs, wetlands etc has a greater ecosystem diversity than the Scandanavian country like Norway.*

Negative interaction

- *Competition-In shallow South American lakes visiting Flamingoes and resident fishes compete for their common food –zooplanktons.*
- *Predation-The havoc spread of Prickly pear cactus in Australia was controlled by introducing a cactus feeding moth.*

Or

What are the different reasons for water pollution? How is it leading to the loss of biodiversity?

- *Industrial waste*
- *Sewage and wastewater*
- *Mining activities*
- *Marine dumping*
- *Accidental oil leakage*
- *The burning of fossil fuels*
- *Chemical fertilizers and pesticides*
- *Leakage from sewer lines*

Microorganisms consumes a lot of oxygen rendering it unavailable for other aquatic organisms leading to their death.Eutrophication and formation of algal bloom leads to a similar consequence –loss of biodiversity.
