

# Class XI Session 2025-26

## Subject - Biology

### Sample Question Paper - 5

Time Allowed: 3 hours

Maximum Marks: 70

#### General Instructions:

1. All questions are compulsory.
2. The question paper has five sections and 33 questions. All questions are compulsory.
3. Section–A has 16 questions of 1 mark each; Section–B has 5 questions of 2 marks each; Section– C has 7 questions of 3 marks each; Section– D has 2 case-based questions of 4 marks each; and Section–E has 3 questions of 5 marks each.
4. There is no overall choice. However, internal choices have been provided in some questions. A student has to attempt only one of the alternatives in such questions.
5. Wherever necessary, neat and properly labeled diagrams should be drawn.

#### Section A

1. In *Magnifera indica* Linn, Linn denotes: [1]
  - a) The name of the author who first described the species.
  - b) The name of the author who first described the subspecies.
  - c) The name of the author who first described the formation
  - d) The name of the author who first described the genus.
2. pH of urine under healthy conditions is: [1]
  - a) Slightly alkaline
  - b) Neutral
  - c) Highly alkaline
  - d) Slightly acidic
3. Proteins carry out many functions in living organisms such as: [1]
  - a) Role in catalytic activity of the enzyme
  - b) Storehouse of energy
  - c) Genetic material
  - d) Fight against infectious organisms
4. In monocot leaves stomata is present on which surface of the leaf? [1]
  - a) Dorsal surface
  - b) Ventral surface
  - c) On the midrib
  - d) Both surface
5. Respiration in insects is called direct because: [1]
  - a) The cell exchange  $O_2/CO_2$  directly with the air in the tubes.
  - b) The tissues exchange  $O_2/CO_2$  directly with coelomic fluid.
  - c) The tissues exchange  $O_2/CO_2$  directly with
  - d) Tracheal tubes exchange  $O_2/CO_2$  directly



- the air outside through the body surface. with the haemocoel which then exchange with tissues.
6. How does photosystem II maintain the continuous supply of electrons during electron transport system? [1]  
 a) By splitting water b) By utilizing ATP  
 c) By reduction of NADP to NADPH d) By splitting CO<sub>2</sub>
7. The part of a nephron which adds some material to the filtrate is: [1]  
 a) Distal convoluted tubule b) Proximal convoluted tubule  
 c) Bowman's capsule d) Loop of Henle
8. The number of nymphs produced from single ootheca of the frog is \_\_\_\_\_. [1]  
 a) 12 b) 16  
 c) 10 d) 15
9. Which of the following gibberellic acid is used for malting process in the brewing industry? [1]  
 a) GA b) GA<sub>2</sub>  
 c) GA<sub>3</sub> d) GA<sub>1</sub>
10. Spirulina is used in medicines, from which type of plants it is derived? [1]  
 a) Pteridophytes b) Bryophytes  
 c) Algae d) Fungi
11. Vasa recta is absent or reduced in: [1]  
 a) Bowman's capsule b) PCT  
 c) Cortical nephrons d) Juxtamedullary nephrons
12. The regulatory centres for respiration are located in: [1]  
 a) Diencephalon and pons b) Cerebellum and medulla oblongata  
 c) Medulla oblongata and pons d) Pons and cerebellum
13. **Assertion (A):** Trichonympha has the enzyme  $\beta$ -glucosidase. [1]  
**Reason (R):** Without Trichonympha, the termites die.  
 a) Both A and R are true and R is the correct explanation of A. b) Both A and R are true but R is not the correct explanation of A.  
 c) A is true but R is false. d) A is false but R is true.
14. **Assertion (A):** Emphysema is a chronic disorder in which alveolar walls are damaged due to which respiratory surface is decreased. [1]  
**Reason (R):** One of the major causes of this is cigarette smoking.  
 a) Both A and R are true and R is the correct explanation of A. b) Both A and R are true but R is not the correct explanation of A.  
 c) A is true but R is false. d) A is false but R is true.
15. **Assertion (A):** An organism has only a single enzyme for a given step of a metabolic reaction. [1]  
**Reason (R):** A substrate may be acted upon by a number of variants of an enzyme producing the same product.



- a) Both A and R are true and R is the correct explanation of A.      b) Both A and R are true but R is not the correct explanation of A.
- c) A is true but R is false.      d) A is false but R is true.

16. **Assertion (A):** Oxyhaemoglobin carries 1 - 4 molecules of oxygen in the blood. [1]

**Reason (R):** The capacity of oxyhaemoglobin depends on the degree of ( $\text{Fe}^{2+}$ ) saturation with oxygen.

- a) Both A and R are true and R is the correct explanation of A.      b) Both A and R are true but R is not the correct explanation of A.
- c) A is true but R is false.      d) A is false but R is true.

### Section B

17. You are given two slides having T.S. of roots and stems. How will you identify which slide is of root and which is of stem? [2]
18. How does a gap junction facilitate intercellular communication? [2]
19. Write short note on the function of Androgens [2]
20. Why there is a need to standardise the system of naming of living organisms? [2]
21.  $2\text{H}_2\text{O} \rightarrow 2\text{H}^+ + 4\text{e}^- + \text{O}_2\uparrow$  Based on the above equation, answer the following questions [2]
- i. Where does this reaction take place in plants?
- ii. What is the significance of this reaction?

OR

The entire process of photosynthesis consists of a number of reactions. Where in the cell do each of these take place?

- i. Synthesis of ATP & NADPH \_\_\_\_\_
- ii. Photolysis of water \_\_\_\_\_
- iii. Fixation of  $\text{CO}_2$  \_\_\_\_\_
- iv. Synthesis of sugar molecule \_\_\_\_\_
- v. Synthesis of starch \_\_\_\_\_

### Section C

22. Enlist the demerits of an artificial system of classification of plants. [3]
23. Define the following: [3]
- i. Parapodia
- ii. Mantle
- iii. Ctenidia
- iv. Radula
24. Proteins have a primary structure. If you are given a method to know which amino acid is at either of the two termini (ends) of a protein, can you connect this information to purity or homogeneity of a protein? [3]
25. Both growth and differentiation in higher plants are open. Comment. [3]
26. Explain about threshold stimulus. [3]
27. Distinguish between Plasma and Serum. [3]

OR

What is the significance of hepatic portal system in the circulatory system?

28. Write short note on neural coordination. [3]

### Section D

29. Read the following text carefully and answer the questions that follow:

[4]

The morphology of the mycelium, mode of spore formation, and fruiting bodies form the basis for the division of the fungi kingdom into various classes which include four sub-division Phycomycetes, ascomycetes, basidiomycetes, Deuteromycetes. Members of Phycomycetes are found in aquatic habitats and on decaying wood in moist and damp places or as obligate parasites on plants, ascomycetes are mostly multicellular. The asexual spores are conidia produced exogenously on the special mycelium called conidiophores. Basidiomycetes are mushrooms, bracket fungi or puffballs. They grow in soil, on logs and tree stumps and in living plant bodies as parasites. The basidiospores are exogenously produced on the basidium.

Classification of Fungi			
Phycomycetes (Lower Fungi)	Ascomycetes (Sac Fungi)	Basidiomycetes (Club Fungi)	Deuteromycetes (Fungi imperfecti)
Saprolegnia	Yeast	Agaricus	Cercospora
Rhizopus	Aspergillus	Polyporus	Collectotrichum
Mucor	Pencillium	Puccinia	Trichoderma
Albugo	Neurospora	Ustilago	Pyricularia
Pythium	Peziza	Lycoperdon	Fusarium

- Observed given table of Classification of Fungi and identify the class of fungi in which asexual spores are not found, vegetative reproduction occurs by fragmentation, and sexual organs are absent. (1)
- Where are Members of Phycomycetes found? (1)
- What is ascomycetes? What is the characteristic feature of ascomycetes and basidiomycetes? (2)

OR

Identify the figure given below. Also, mention its characteristics. (2)



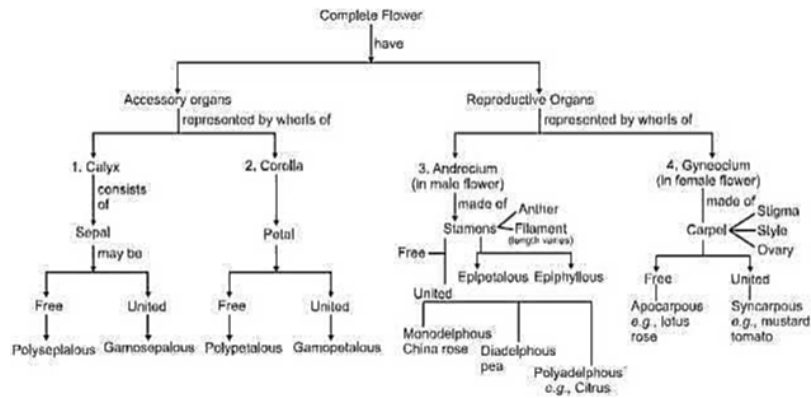
30. Read the following text carefully and answer the questions that follow:

[4]

Each flower normally has four floral whorls, viz., calyx, corolla, androecium and gynoecium. The gynoecium is the female reproductive part of the flower and is made up of one or more carpels. A carpel consists of three parts namely stigma, style and ovary. The ovary is the enlarged basal part. The style connects the ovary to the stigma. The stigma is usually at the tip of the style and is the receptive surface for pollen grains. After fertilisation, the ovules develop into seeds and the ovary matures into a fruit. The arrangement of ovules within the ovary is known as placentation. The placentation are of different types namely, marginal, axile, parietal, basal, central



and free central.



i. Observe the given flow chart and mention the male and female parts of the flower. Explain shortly. (1)

ii. What is aestivation? (1)

iii. Some statements mention given below observe this and find out incorrect statements and correct it? (2)

- Each ovary bears one or more ovules attached to a flattened, cushion-like placenta.
- In mustard one carpel is present which may be free.
- Ovary is the enlarged basal part, on which lies the elongated tube, the stigma.
- After fertilisation, the ovules develop into seeds and the ovary matures into a fruit.

**OR**

What is basal placentation give one example. (2)

### Section E

31. With the help of suitable diagrams describe mitosis. [5]

OR

Describe meiosis II with the help of suitable diagrams.

32. Explain glycolysis. [5]

OR

What is oxidative phosphorylation?

33. Is there a species or region specific type of plastids? How does one distinguish one from the other? [5]

OR

Describe the structure of the following with the help of labelled diagrams.

- Nucleus
- Centrosome

# Solution

## Section A

1. (a) The name of the author who first described the species.

**Explanation:**

In *Mangifera indica* Linn, the word 'Linn' indicates that this species was first described by Linnaeus. Hence, the correct option is the name of the author who first described the species.

- 2.

(d) Slightly acidic

**Explanation:**

The pH of urine under healthy conditions is slightly less than 7 so, slightly acidic in nature.

- 3.

(d) Fight against infectious organisms

**Explanation:**

Proteins are molecules made of amino acids. They also play a central role in biological processes. For example, transport molecules such as oxygen, keep us healthy as part of the immune system and transmit messages from cell to cell.

- 4.

(d) Both surface

**Explanation:**

Stomata distribution in monocot leaves is Amphistomatic i.e., stomata equally distributed on both the surfaces.

5. (a) The cell exchange  $O_2$ /  $CO_2$  directly with the air in the tubes.

**Explanation:**

Insects have a network of tubes (tracheal tubes) to transport atmospheric air within the body. These openings lead to the trachea. The cells exchange gases directly with the air in the spiracles present on the insect's body.

6. (a) By splitting water

**Explanation:**

By splitting water hydrogen ion ( $H^+$ ) is produced that maintain a continuous supply of electron.

7. (a) Distal convoluted tubule

**Explanation:**

Each nephron consists of Bowman's cup, tubules, and loops of Henle's. The filtration of blood occurs in glomerulus cells present in Bowman's cup. Some materials are added to the initial filtrate in the distal convoluted tubule.

- 8.

(b) 16

**Explanation:**

Young ones of frogs are called nymphs. When the ootheca ruptures, 16 nymphs come out.

- 9.

(c)  $GA_3$

**Explanation:**

$GA_3$  is used to speed up the malting process in the brewing industry.

- 10.

(c) Algae

**Explanation:**



Spirulina is a blue-green alga and It is one of the most potent nutrient sources of vitamins B-1(thiamine), B-2 (riboflavin), B-3(nicotinamide), B-6 (pyridoxine), B-9 (folic acid, vitamin C, vitamin D, vitamin A, and vitamin E. It is also a source of potassium, calcium, chromium, copper, iron, magnesium, manganese, phosphorus, selenium, sodium and zinc.

11.

(c) Cortical nephrons

**Explanation:**

The efferent arteriole emerging from the glomerulus forms a fine capillary network around the renal tubule called the peritubular capillaries. A minute vessel of this network runs parallel to Henle's loop forming a 'U' shaped vasa recta. Vasa recta are absent or highly reduced in cortical nephrons.

12.

(c) Medulla oblongata and pons

**Explanation:**

A specialized centre present in the medulla region of the brain called respiratory rhythm centre is primarily responsible for this regulation. In the pons region of the brain called pneumotaxic centre can moderate the functions of the respiratory rhythm centre.

13.

(b) Both A and R are true but R is not the correct explanation of A.

**Explanation:**

Trichonympha occurs as a symbiont in the intestine of termites. It secretes cellulose digesting enzyme  $\beta$ -glucosidases which convert cellulose into glucose. The digested food is shared by the termite. As termites feed on wood, they must need source which digest cellulose and provide them food. Hence without Trichonympha the termites starve and die.

14. (a) Both A and R are true and R is the correct explanation of A.

**Explanation:**

Both A and R are true and R is the correct explanation of A.

15.

(d) A is false but R is true.

**Explanation:**

It has been discovered that a substrate may be acted upon by a number of variants of an enzyme producing the same product. The multiple molecular forms of an enzyme occurring in the same organism and having a similar substrate activity are called isoenzymes or isozymes, e.g., lactic dehydrogenase has 5 isoenzymes in man.

16. (a) Both A and R are true and R is the correct explanation of A.

**Explanation:**

Oxygen diffuses into erythrocytes and combines loosely with the  $\text{Fe}^{2+}$  ions in the haemoglobin molecule to form oxyhaemoglobin. Each of four  $\text{Fe}^{+2}$  ions in the haemoglobin molecule can bind with one molecule of oxygen, so oxyhaemoglobin carries 1 - 4 molecules of oxygen according to its degree of saturation with oxygen.

**Section B**

17. Presence or absence of hair on the epidermis will give the clue. Those with hair are slides of root. Cuticles will be present on the slide of stem.

18. Gap junctions are fine hydrophilic channels between two adjacent animal cells. These are formed with the help of two protein cylinders; called connexions. Gap junctions allow small signaling molecules to pass from one cell to another and thus they facilitate intercellular communication. Movement through gap junctions is controlled by pH and  $\text{Ca}^{2+}$  concentration.

19. **Androgens.** Development of male accessory sex organs, spermatogenesis.

20. There are millions of living organisms in the world. Often, these organisms are known by their local names that vary from place to place, even within a country. Hence, the naming process of living organism is standardised in a way that a particular organism is known by the same name all over the world in the scientific community.

21. i. Lumen of the thylakoids.



ii.  $O_2$  is evolved during this reaction, moreover electrons are made available to PS-II continuously.

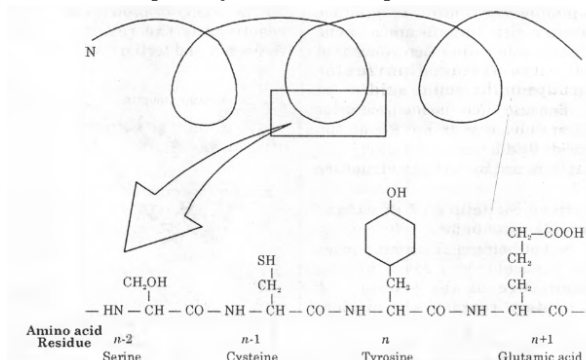
OR

- i. Synthesis of ATP and NADPH<sub>2</sub> takes place at the outer side of the thylakoid membrane.
- ii. Photolysis of water takes place at the Inner side of thylakoid membrane.
- iii. Fixation of carbon dioxide occurs at the stroma of the chloroplast.
- iv. Synthesis of sugar occurs in chloroplast.
- v. Synthesis of starch takes place in the cytoplasm

### Section C

#### 22. Demerits of Artificial System :

- i. Criteria used, though simple but arbitrary, are based on **random morphological characters/traits**.
  - ii. It **lacks the natural relationship** amongst the organisms.
  - iii. It fails to give an idea about the **origin and evolution of different species**.
  - iv. Many closely allied individuals were classified in separate groups and those with altogether different characters were placed in the same group.
23. i. **Parapodia**: These are paired jointed, leaf-like locomotory appendages of polychaetes (a group of annelids) The parapodia bear bristles, spines, and setae. They help in locomotion in water and on the sand.
- ii. **Mantle**: It is our outer soft fold of which covers the visceral hump of mollusks. It also secretes the outer shell in them.
- iii. **Ctenidia**: The respiratory organs (gill-like) present in Mollusca are termed as ctenidia.
- iv. **Radula**: It is a short chitinous curved structure having a row of teeth on both sides and is present in the buccal mass of Gastropods.
24. Yes. The sequence of amino acids or positional information in a protein which is a first amino acid, which is second and so on, is known as the primary structure of a protein.



Primary structure of a portion of a hypothetical protein. N and C refer to the two termini of every protein. Single letter codes and three-letter abbreviations for amino acids are also indicated.

The difference in one amino acid will make the protein different from each other. The sequencing of a complete protein by sangers or Edman technique can tell us about the purity of a protein.

25. Theoretically growth and differentiation in higher plants are open. This means that there is no limit to the extent a plant part can grow. Once a cell loses its capacity to divide then it differentiates. Differentiation is the process by which a specialized tissues develop to perform different functions. For example, the job of phloem is to transfer food. Sometimes environment or a particular phase of growth can dictate a particular part to behave differently. This is the phase when redifferentiation occurs and the plant part takes on a new role. Thus, it can be said that development and differentiation are open to change under the given environmental conditions and demands of those conditions.
26. **Threshold stimulus**: Each skeletal muscle is made of many muscle fibres and each muscle fibre is supplied by a nerve. These nerves send nerve impulses to the muscle fibres. As a result of this, the muscle is stimulated and contraction of the muscle takes place. But for contraction muscle fibres requires a minimum strength of the nerve impulse. This is called the threshold stimulus.

27.	Plasma	Serum
	The liquid part of the blood is called plasma which is a solution in water of many compounds. It contains many organic and inorganic substances. In the plasma, digested food, $CO_2$ and excretory products are carried around the body.	It is the blood plasma from which the fibrinogen has been removed. It contains antibodies to overcome the toxic effect of micro-organisms.

OR



A unique vascular connection exists between the digestive tract and liver called the hepatic portal system. The hepatic portal vein carries blood from intestine to the liver before it is delivered to the systemic circulation. This ensures that the liver, which has the metabolic versatility to interconvert various organic molecules has first access to nutrients after the food is digested.

28. **Neural Coordination.** The functions of the organs/ organ systems in our body must be coordinated to maintain homeostasis. Coordination is the process through which two or more organs interact and complement the functions of one another. For example, when we do physical exercises, the energy demand is increased for maintaining an increased muscular activity. The supply of oxygen is also increased. The increased supply of oxygen necessitates an increase in the rate of respiration, heart beat and increased blood flow via blood vessels. When physical exercise is stopped, the activities of nerves, lungs, heart and kidney gradually return to their normal conditions. Thus, the functions of muscles, lungs, heart, blood vessels, kidney and other organs are coordinated while performing physical exercises. In our body the neural system and the endocrine system jointly coordinate and integrate all the activities of the organs so that they function in a synchronized fashion.

#### Section D

29. i. In basidiomycetes asexual spores are not found, vegetative reproduction occurs by fragmentation, and sexual organs are absent.
- ii. i. Aquatic habitats  
ii. On decaying wood
- iii.
  - Ascomycetes are commonly known as sac-fungi as they are produced in a sac-like structure known as ascus.
  - Dikaryon formation is the characteristic feature of ascomycetes and basidiomycetes.

OR

- Agaricus
  - Agaricus is a fleshy saprophytic fungus with over 300 species and contains both edible and poisonous species. It is found in wet and damp climates. It grows on wood and in humus-rich soil.
30. i. A. The **calyx** forms the outermost whorl of a flower, which contains sepals. They are green, leaf-like structures that cover and protect the flowers during the bud stage. When the sepals of a flower are free, they are called polysepalous, while fused sepals of a flower are called gamosepalous.
- B. The **corolla** of a flower is a layer that lies inside the calyx. It contains beautifully coloured petals, which help in attracting insects for pollination. When the petals are free, they are called polypetalous, while fused petals are called gamopetalous.
- C. The **androecium** or the stamen is the male reproductive part of a flower. It consists of two parts, the filament and the bilobed anther. The bilobed anther is the site for meiosis and the generation of pollen grains.
- D. **Gynoecium** represents the female reproductive part of a flower. It consists of an ovary. The ovary is connected by a long tube (called style) to the stigma. The ovary bears numerous ovules attached to the placenta.
- ii. The arrangement of sepals or petals in floral bud is called Aestivation.
- iii.
  - In mustard one carpel is present which may be free.  
**Correct statement:** Mustard has two carpels that are fused together.
  - Ovary is the enlarged basal part, on which lies the elongated tube, the stigma.  
**Correct statement:** The ovary is the enlarged basal part, on which lies the elongated tube, the style.

OR

**Basal placentation:** A single ovule is linked to the placenta, which develops at the base of the ovary. Marigold is an example.

#### Section E

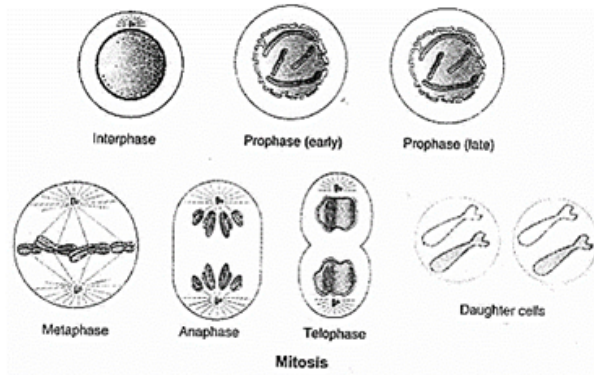
31. Mitosis is divided into the following four stages:

i. **Prophase**

- Condensation of chromosomal material starts. The chromosomal material becomes untangled during the process of chromatin condensation.
- The centriole, which had undergone duplication during S phase of interphase now begins to move towards opposite poles of the cell.



- At the end of prophase, Golgi complexes, endoplasmic reticulum, nucleolus and the nuclear envelope disappear.



## ii. Metaphase

- The metaphase is characterized by all the chromosomes coming to lie at the equator.
- One chromatid of each chromosome connected by its kinetochore to spindle fibres from one pole and its sister chromatid connected by its kinetochore to spindle fibres from the opposite pole.
- The plane of alignment of the chromosomes at metaphase is referred to as the metaphase plate.

## iii. Anaphase

- At the onset of anaphase, each chromosome arranged at the metaphase plate is split simultaneously and make the two daughter chromatids.
- They are now referred to as chromosomes of the future daughter nuclei and begin their migration towards the two opposite poles.
- As each chromosome moves away from the equatorial plate, the centromere of each chromosome is towards the pole and hence at the leading edge, with the arms of the chromosome trailing behind.

## iv. Telophase

This is the stage which shows the following key events:

- Chromosomes cluster at opposite spindle poles and their identity is lost as discrete elements.
- Nuclear envelope assembles around the chromosome clusters.
- Nucleolus, Golgi complex and ER reform.

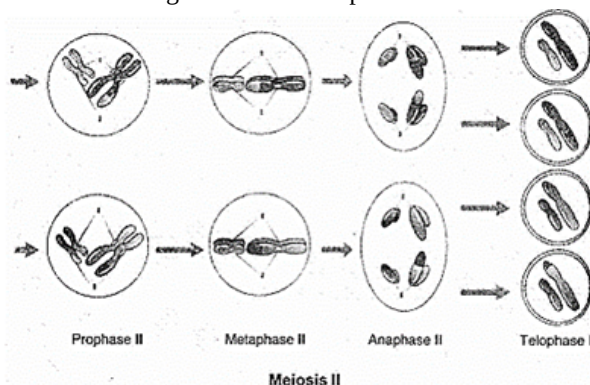
## v. Cytokinesis

Karyokinesis is followed by cell division to form two daughter cells. This process is called cytokinesis at the end of which cell division is complete.

OR

## Meiosis II

- Prophase II:** Meiosis II is initiated immediately after cytokinesis, usually before the chromosomes have fully elongated. In contrast to meiosis I, meiosis II resembles normal mitosis. The nuclear membrane disappears by the end of prophase II. The chromosomes again become compact.



- Metaphase II:** At this stage the chromosomes align at the equator and the microtubules from opposite poles of the spindle get attached to the kinetochores of sister chromatids.
  - Anaphase II:** It begins with the simultaneous splitting of the centromere of each chromosome (which was holding the sister chromatids together), allowing them to move toward opposite poles of the cell.
  - Telophase II:** Meiosis ends with telophase II, in which the two groups of chromosomes once again get enclosed by a nuclear envelope.
- Cytokinesis follows resulting in the formation of tetrad of cells i.e., four haploid daughter cells.



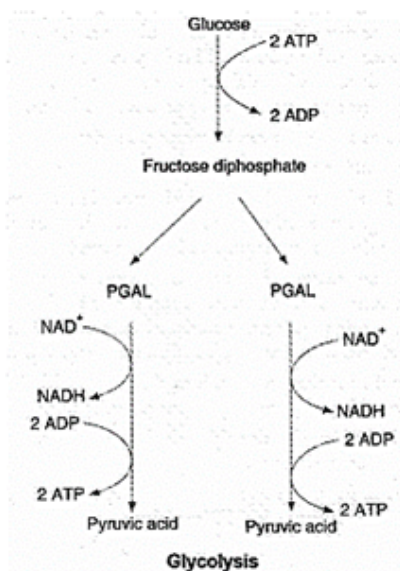
### 32. Glycolysis

- The term glycolysis has originated from the Greek words, glycos for sugar, and lysis for splitting. The scheme of glycolysis was given by Gustav Embden, Otto Meyerhof, and J. Parnas, and is often referred to as the EMP pathway.
- Glycolysis occurs in the cytoplasm of the cell and is present in all living organisms.
- In this process, glucose undergoes partial oxidation to form two molecules of pyruvic acid. In plants, this glucose is derived from sucrose.
- Sucrose is converted into glucose and fructose by the enzyme invertase, and these two monosaccharides enter the glycolytic pathway.
- Glucose and fructose are phosphorylated to give rise to glucose-6-phosphate by the activity of the enzyme hexokinase.
- This phosphorylated form of glucose then isomerises to produce fructose -6-phosphate.
- Subsequent steps of metabolism of glucose and fructose are the same.
- The various steps of glycolysis are depicted in the following figure:

In glycolysis, a chain of ten reactions, under the control of different enzymes, takes place to produce pyruvate from glucose.

#### Utilization of ATP During Glycolysis:

- During the conversion of glucose into glucose-6-phosphate
- During the conversion of fructose-6-phosphate to fructose-1, 6-diphosphate.



OR

- Oxidative phosphorylation is a metabolic pathway that uses energy released by the oxidation of nutrients to produce adenosine triphosphate (ATP).
- Although the many forms of life on earth use a range of different nutrients, almost all carry out oxidative phosphorylation to produce ATP, the molecule that supplies energy to metabolism.
- This pathway is an efficient way of releasing energy, compared to alternative fermentation processes such as anaerobic glycolysis.
- During oxidative phosphorylation, electrons are transferred from electron donors to electron acceptors such as oxygen, in redox reactions. These redox reactions release energy, which is used to form ATP.
- In eukaryotes, these redox reactions are carried out by a series of protein complexes within mitochondria, whereas, in prokaryotes, these proteins are located in the cells' inner membranes. These linked sets of enzymes are called electron transport chains.

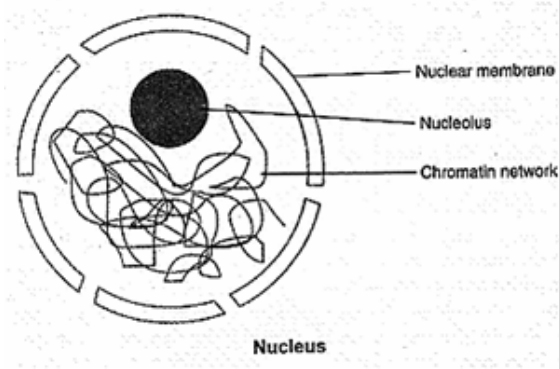
### 33. Plastids are both region or species-specific. These are as follows

- Proplastids:** These are colourless, rounded but amoeboid plastid precursors, found in meristematic and newly formed cells of plants. It has a double membrane envelope that surrounds a colourless matrix, containing DNA, ribosomes and reserve food. A few vesicles and lamellae also occur in the matrix.
- Leucoplasts:** These are colourless plastids that occur in non-green plant cells commonly near the nucleus. They are as follows
  - Amyloplasts** These leucoplasts store starch, e.g., the tuber of potato, grain of rice and wheat.
  - Elaioplasts** These store fats, e.g., rose.
  - Aleuoplasts** They are protein storing plastids, e.g., castor endosperm.
- Chromoplasts:** These are non-photosynthetic coloured plastids which synthesise and store carotenoid pigments. They appear, orange, red or yellow in colour. These mostly occur in ripe fruits (tomato and chillies) carrot roots, etc.



iv. **Chloroplasts:** These are photosynthetic plastids, which are green in colour and found in the leaves of all green plants. They have lamellae organised in the form of grana.

OR



- i. **Nucleus:** Nucleus is a double membrane structure, with minute pores in the membrane. The pores work like channels for passage of substances. The fluid-filled in the nucleus is called nucleoplasm. There is usually one nucleolus inside the nucleus. Sometimes many nucleoli can be found. There is a fine network of a thread like chromatins inside the nucleus. During the resting stage of a cell, structures inside the nucleus cannot be seen. They become visible only during cell division.
- ii. **Centrosome:** In chromosome, there is one primary constriction, which contains two centromeres. These centromeres comprise the centrosome. Centrosome plays an important role during cell division.