

KIRAN TUTORIALS

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Std 10 (English)**Science And Technology - II****Date 29-09-20****Time 1HRS****Chapter 2.00****Marks 20****Q.1 Multiple Choice Questions****2**

- 1 Cytokinesis is the division of
 a. cell b. cytoplasm c. cell wall d. nucleus

Ans Option b.

- 2 The exchange of respiratory gases occur by the in the plants.
 a. Air pores b. Stomata c. Lenticels d. Diffusion

Ans Option d.**Q.2 Find the odd one out****2**

- 1 Rickets, Night blindness, Beriberi , Anemia

Ans Anemia is the odd one out as it an iron deficiency while rest are deficiency related to Vitamins.

- 2 Amitosis, Mitosis, Meiosis, Anaphase

Ans Anaphase is the odd one out as it one of stages of cell division while rest are types of cell division.**Q.3 Match the pair****2**

	Column "A"		Column "B"
i.	Anaphase	a.	Chromosomes become arranged in a plane at the equator.
ii.	Prophase	b.	Daughter chromosomes move to opposite poles of the cell
		c.	Chromosomes become visible and centrioles moves to opposite poles of the cell.
		d.	Chromosomes lose their distinctiveness and gradually become transformed into chromatin network.

Ans	i.	Anaphase	Daughter chromosomes move to opposite poles of the cell.
	ii.	Prophase	Chromosomes become visible and centrioles moves to opposite poles of the cell.

	Column "A"		Column "B"
i.	Telophase	a.	Chromosomes become arranged in a plane at the equator.
ii.	Metaphase	b.	Daughter chromosomes move to opposite poles of the cell
		c.	Chromosomes become visible and centrioles moves to opposite poles of the cell.
		d.	Chromosomes lose their distinctiveness and gradually become transformed into chromatin network.

Ans	i.	Telophase	Chromosomes lose their distinctiveness and gradually become transformed into chromatin network.
	ii.	Metaphase	

Q.4 State True or False**2**

1 Excess of proteins is converted into glucose through the process of gluconeogenesis.

Ans True

2 Asexual reproduction is accomplished through mitosis.

Ans True

Q.5 Write Short Notes**4**

1 Write short note on Energy from Proteins.

- Ans**
- Proteins are the macromolecules formed by bonding together many amino acids.
 - Proteins of animal origin are called as 'first class' proteins.
 - Amino acids are obtained after digestion of proteins.
 - Those amino acids are absorbed in the body and transported up to each organ and cell via blood.
 - From these amino acids, organs and cells produce various proteins necessary for themselves and the whole body.
 - Excess of amino acids obtained are not stored in the body. They are broken down and the ammonia formed is eliminated out of the body.

2 Explain Kreb's cycle with reaction.

- Ans**
- The cyclical reactions of tricarboxylic acid cycle were discovered by Sir Hans Kreb. Hence, this cyclical process is also called as Kreb's cycle.
 - In tricarboxylic acid cycle, both the molecules of acetyl-CoA formed in glycolysis, enter the mitochondria.
 - Cyclic chain of reactions called as tricarboxylic acid cycle is operated on it in the mitochondria.
 - Acetyl part of acetyl-CoA is completely oxidized through this cyclical process and molecules CO_2 , H_2O , NADH_2 , FADH_2 are derived.

Q.6 Distinguish between(Any One)**2**

1 Glycolysis and TCA cycle

Ans	Glycolysis	TCA cycle
i.	Glycolysis refers to the series of chemical reactions in which a glucose molecule is converted into pyruvic acid molecules	TCA cycle refers to the series of chemical reactions in which pyruvate is converted to acetyl-Co-A and is completely oxidized into CO_2 and water.
ii.	It is the first step of the cellular respiration.	It is the second step of the cellular respiration.
iii.	It occurs in the cytoplasm	It occurs in the mitochondria
iv.	It occurs both in aerobic and anaerobic respiration.	It occurs in aerobic respiration.

v.	It consumes two ATP molecules.	It consumes no ATP molecules.
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2 Aerobic and Anaerobic Respiration

Ans

	Aerobic Respiration	Anaerobic Respiration
i.	Aerobic respiration takes place in the presence of oxygen.	Anaerobic respiration takes place in the absence of oxygen.
ii.	End products are carbon dioxide and water	End products may be alcohol or lactic acid.
iii.	Considerable amount of energy is released. - 38 ATP molecules	Less amount of energy is released. - 2 ATP molecules
iv.	It involves glycolysis, TCA cycle & electron transport chain reaction.	It involves only glycolysis & fermentation

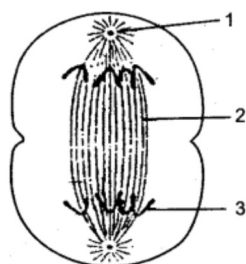
Q.7 Answer the following in detail (Any One)

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- 1
 - i. What do you mean by cell-cycle ?
 - ii. Why gametes have a haploid number of chromosomes ?
 - iii. What is cytokinesis ?
 - iv. What is the importance of meiosis in creating variations ?

- Ans
- i. Every cell capable of cell division process through different stages or phase in a cyclic manner. It is called the cell-cycle.
 - ii. The gametes are produced as a result of meiosis hence they have haploid number of chromosomes and after fertilization a diploid zygote can be obtained.
 - iii. During cell division karyokinesis is followed by the division of cytoplasm. It is called cytokinesis. Cytokinesis is the division of cytoplasm.
 - iv. During meiosis, the exchange of chromosomal material takes place between the non-sister chromatids forming new combinations
 - v. These new combinations give rise to variations which result in the evolution of species and even in the origin of new species.

- 2 The diagram below represents a stage during cell division. Study the same and answer the questions.



- i. Name the labelled parts 1, 2 and 3 ?
- ii. Identify the above stage and give a reason to support your answer ?
- iii. Give an example of this type of cell division in the body ?
- iv. Name the stage prior to this stage ?

- Ans
- i. 1. Centriole 2. Spindle fibers 3. Chromatids
 - ii. Anaphase. The daughter chromosomes are reaching to the opposite poles of the cell.
 - iii. It is Mitosis and this type of cell division is seen in the somatic cells of the body.
 - iv. Metaphase is the phase prior to this stage.

Q.8 Fill in the blank and rewrite the completed statements**1**

1 The process of gamete production and spore formation occurs by

Ans The process of gamete production and spore formation occurs by **meiosis**.