doubtnut
India's Number 1 Education App

BIOLOGY

BOOKS - TARGET BIOLOGY (HINGLISH)

LIFE PROCESSES IN LIVING ORGANISMS PART - 1

Choose The Correct Alternative

1. Energy obtained from carbohydrates is _____ per gram of carbohydrate.

A. 2 Kcal

B. 4 Kcal

C. 8 Kcal

D. 9Kcal

Answer: B

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2. Which of the following molecules is NOT produced during glycolysis ?

A. $NADH_2$

B. ATP

C. $FADH_2$

D. H_2O

Answer: C

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3. Electron transfer chain operates only in the

_____

A. nucleolus

B. Golgi complex

C. mitochondria

D. cytoplasm

Answer: B

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4. Which of the following is NOT a step of anaerobic respriration ?

A. Glycolysis

B. Fermentation

C. TCA

D. Both (A) and (C)

Answer: C

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5. Excess carbohydrates are stored in the liver and muscles in the form of _____

A. amino acids

B. glycogen

C. fatty acids

D. nucleotides

Answer: B

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6. Amino acids are obtained after digestion of

A. carbohydrates

B. proteins

C. lipids

D. nucleic acids

Answer: B

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7. Which of the following is a protein present in bones ?

A. Myosin

B. Melanin

C. Hemoglobin

D. Ossein

Answer: D

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8. Excess lipids are stored in _____ tissue in the body .

A. nerve

B. bone

C. adipose connective

D. fluid connective

Answer: C

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9. Which of the following vitamins is essential for the synthesis of $NADH_2$?

A. Vitamin B_5

B. Vitamin C

C. Vitamin B_2

D. Vitamin K

Answer: A

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10. Somatic and stem cells undergo _____ type of division

A. meiosis

B. mitosis

C. budding

D. cloning

Answer: B

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11. Spindle fibers attach to which part of the chromosome ?

A. q-arm

B. p-arm

C. Centromere

D. Centriole

Answer: C

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12. Which of the following is the first phase of karyokinesis ?

A. Anaphase

B. Telophase

C. Metaphase

D. Prophase

Answer: D

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13. During, _____ the nuclear membrane completely disappears.

A. pachytene

B. metaphase

C. diplotene

D. telophase

Answer: B

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14. During metaphase this change occurs in the chromosomes

A. get coil shape

B. arranged parallel to the equatorial plane

C. get destroyed due to breaking

D. get folded

Answer: B

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15. In this stage of mitosis, the daughter chromosomes appear like bunch of bananas.

A. Prophase

B. Metaphase

C. Anaphase

D. Telophase

Answer: C

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16. In anaphase, the _____ split and the sister chromatids are pulled apart in opposite directions with the help of spindle fibers.

A. central plane

B. centrioles

C. centromeres

D. nucleolus

Answer: C

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17. Cell plate formation occurs during

A. karyokinesis in animal cells

B. cytokinesis in plant cells

C. karyokinesis in plant cells

D. cytokinesis in animal cells

Answer: B

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18. How many times will a cell have to divide mitotically to form 128 cells ?

A. 7

B. 14

C. 28

D. 32

Answer: A

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19. Which of the following is NOT a part of mitosis ?

A. Anaphase

B. Diplotene

C. Prophase

D. cytokinesis in animal cells

Answer: B

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20. A diploid cell means

A. n

B. 2n

C. 3n

D. 4n

Answer: B

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21. Identify the phase of mitosis in which onion root tips stained with iodine show daughter chromatids.

A. Metaphase

B. Prophase

C. Anaphase

D. All of the above

Answer: C

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Complete Theparagraph

1. Cell division by meiosis is completed through _____stages. Recombination

during meiosis occurs between _____ chromosomes._____ resembles the process of mitosis. During meiosis-I , two _____ daughter cells are formed, whereas during meiosis-II, _____ haploid cells are formed. All daughter cells formed through meiosisare genetically _____ with respect to present cells dueto genetic recombination.

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Name The Following

1. Nutrient obtained from milk and sweet potatoes.

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2. Energy currency of the cell.

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3. Other name for glycolysis

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4. The scientist who discovered the cyclical reactions of tricarboxylic acid cycle.

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5. Product of pyruvic acid fermentation in erythrocytes and muscle cells

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6. Common step of aerobic and anaerobic respiration.

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7. Protein of animal origin.

View Text Solution

8. Protein present in skin

View Text Solution

9. The process by which plants produce amino acids from minerals.

View Text Solution

10. Flexible muscular protein

View Text Solution

11. Fat soluble vitamins.

View Text Solution

12. Process of conversion of excessof proteins into useful substances like glucose.

View Text Solution

13. Most abuntant protein found in nature.

View Text Solution

14. Molecules formed from fatty acids and essential for producing plasma membrane.

View Text Solution

15. The property of living organisms that helps in growth and restoration of emaciated body of multicellular organisms.

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16. Type of cells in which meiosis takes place.

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17. Step of nuclear division in mitosis.

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18. Process by which four haploid cells are formed from on diploid cell.

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True Or False

1. A molecule of glucose is completely oxidized in aerobic respiration.

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2. Oxidation of glucose is a type of cellular respiration.

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3. Muscle cells perform aerobic respiration while exercising.

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4. Aerobic respiration occurs via three steps namely Glycolysis, Fermentation and Electron Transfer Chain.

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5. In ATP,energy is stored in the bonds that join phosphate groups.

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6. Chemically, ATP is triphosphate molecule formed from aspartame ribonucleoside.

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7. Glycolysis and fermentation are two steps of anaerobic respiration.

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8. Seeds perform aerobic respiration in soil, if surmerged under water during germination.

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9. Substances formed by specific chemical bonds between fatty acids and alcohol are called proteins.

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10. 4 Kcal of energy is obtained per gram of lipid.

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11. Vitamins B and C are water-soluble vitamins.

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12. Each cell contains approximately 70% water by weight whereas blood plasma contains 90% of water.

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13. In telophase, the nucleolus reappears in wach daughter nucleus and the spindle fibers disappear completely.

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14. In mitosis, with the end of karyokinesis, cytokinesis begins and as a result two new daughter cells are formed.

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15. Meiosis takes place in both somatic cells and germ cells.

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16. Gamete production and spore formation occurs by meiosis.

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Odd One Out

1. $FADH(2)$, $NADH_2$, Glucose , ATP

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2. Zygotene , Diplotene, Metaphase, Pachyetene

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Complete The Analogy

1. TCA cycle : Mitochondria : : Glycolysis :_____

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2. Fermentation of yeast : Alcohol : : Fermentation in erythrocytes :_____

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3. Lipids : Fatty acids and glycerol : : Proteins :_____ .

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4. Blood : Hemoglobin : : _____ : Myosin

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5. Production of insulin : Amino acids : : Covering around axon of nerve cells : _____ .

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6. Nicotinamide : $NADH_2$: : Riboflavin : _____ .

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7. Karyokinesis : Nuclear division : : _____ : Cytoplasmic division.

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Answer The Following

1. What are the various system of the human body ?

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2. What are the main sources of energy in the human body ?

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3. Which cell organelle is responsible for harvesting cellular energy in human body ?

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4. What are autotrophs ?

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5. Give four example of nutrients obtained by comsumption of plant materials.

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6. Give examples of food materials that are a source of carbohydrates.

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7. What is the difference between body level and cellular level of respiration ?

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8. What are the two methods of cellular respiration ?

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9. Explain glycolysis in detail.

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10. Explain Krebs cycle with reaction.

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11. Explain how ATP is formed through the electron transport chain.

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12. Mention any four molecules synthesized during aerobic respiration.

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13. What is ATP composed of ?

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14. Explain the importance of ATP in a cell will a diagram.

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15. What is the first source of energy utilised by the body ?

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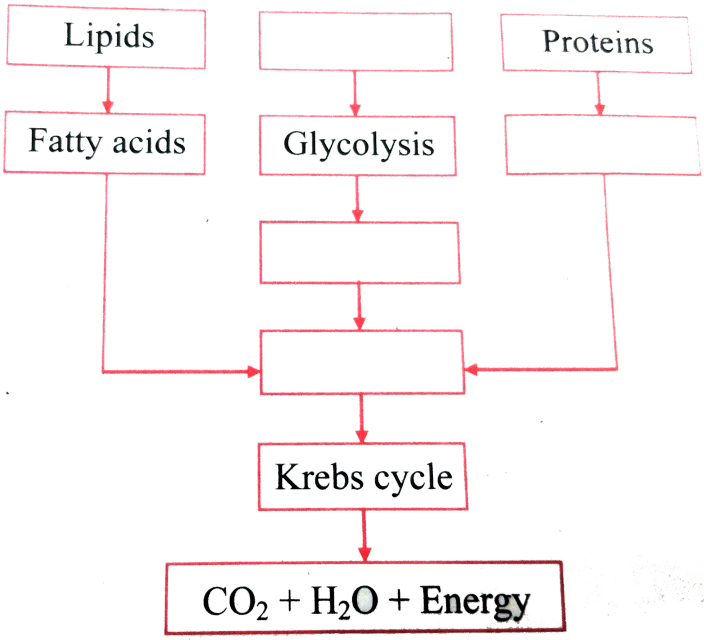
16. Complete the following chart and state which process of energy production it represents :



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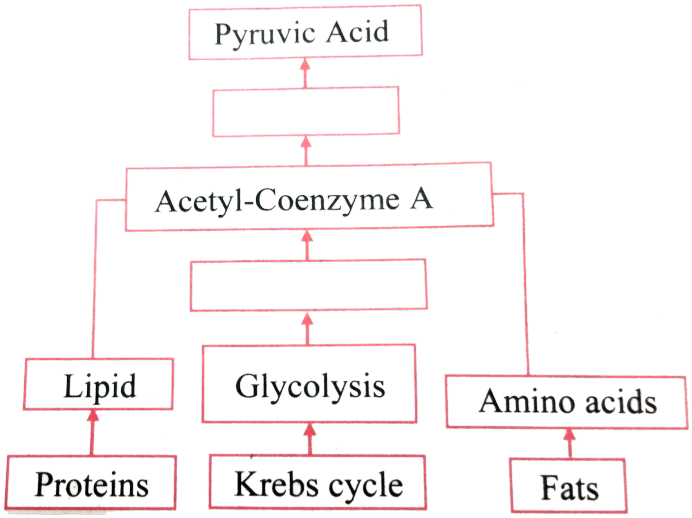
17. How energy is formed from oxidation of carbohydrates , fats and proteins ?Correct the diagram given below.



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18. What is fermentation ?

OR

Which type of respiration involves the process of fermentation ?

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19. Why we get tired on quick exercise ?

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20. How does the process of respiration occur in living organisms ?

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21. What is the fate of excess amino acids present in the body ?

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22. What are the products of digestion of lipids ?

View Text Solution

23. Give four examples of hormones produced by using fatty acids.

View Text Solution

24. Define vitamins.

View Text Solution

25. Write a short note on vitamins.

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26. What is cell division ? Mention the two types of cell division.

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27. With the help of suitable diagrams, explain mitosis in detail.

View Text Solution

28. What is the significance of mitosis ?

View Text Solution

29. With the help of suitable diagram,explain the five stages of prophase-I of meiosis.

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30. After complete oxidatin of a glucose molecule _____ number of ATP molecules are formed.

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31. At the end of glycolysis _____ molecules are obtained.

View Text Solution

32. Genetic recombination occurs in _____ phase of prophase of meiosis-I.

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33. All chromosomes are arranged parallel to equatorial plane of cell in _____ phase of mitosis.

View Text Solution

34. For formation of plasma membrane, _____ molecules are necessary.

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35. Our muscle cells perform _____ type of respiration during exercise.

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36. Write definitions.

i. Nutrition ii. Nutrients

iii. Proteins iv. Cellular respiration

v. Aerobic respiration vi. Glycolysis.

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37. How all the life processes contribute to the growth and development of the body ?

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Give Reason

1. Krebs cycle is also known as citric acid cycle.

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2. Oxygen is necessary for complete oxidation of glucose.

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3. Sometimes , higher plants and animals too perform anaeorbic respiration.

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4. Water is an essential nutrient.

View Text Solution

5. Fibers are one of the important nutrients.

View Text Solution

6. Cell division is one of the important properties of cells and organisms.

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Distinguish Between

1. Glycolysis and TCA cycle

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2. Aerobic and anaerobic respiration

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3. Telophase and prophase

View Text Solution

4. Mitosis and meiosis

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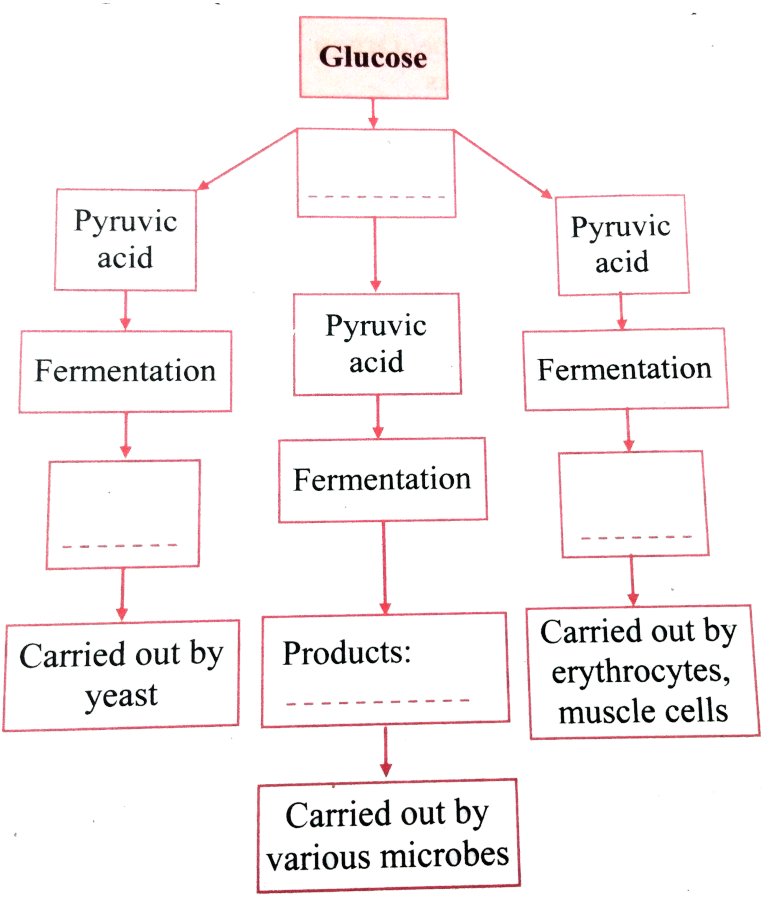
Complete The Given Chart Table

1. Complete the following chart.



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2. Complete the following chart by filling the names of proteins or respective cell types / organs in which they are produced.

	Cell type/ Organ	Protein
i.	----------	Insulin and trypsin
ii.	Cells	Various proteins of cell membrane and various enzymes
iii.	Pituitary glands	----------
iv.	----------	Actin and myosin
v.	----------	Hemoglobin and antibodies
vi.	----------	Melanin and keratin
vii.	Bones	----------

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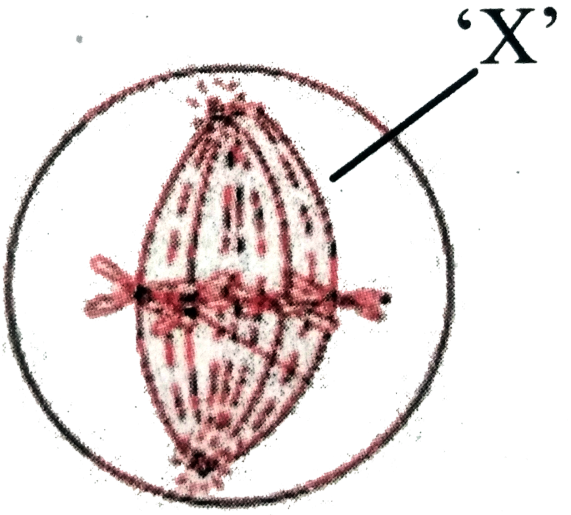
Questions Based On Diagram

1. Observe the given diagram . Identify the phase of mitosis and the part labelled as 'X' in the diagram.



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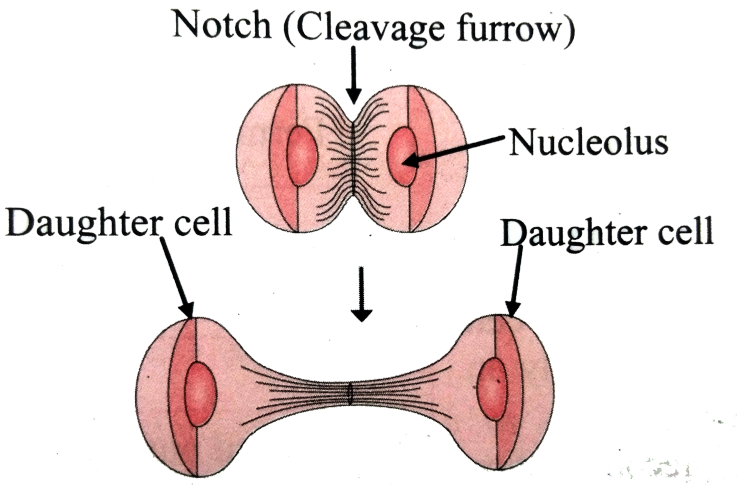
2. Observe the given diagram and explain the depicted process in your own words.



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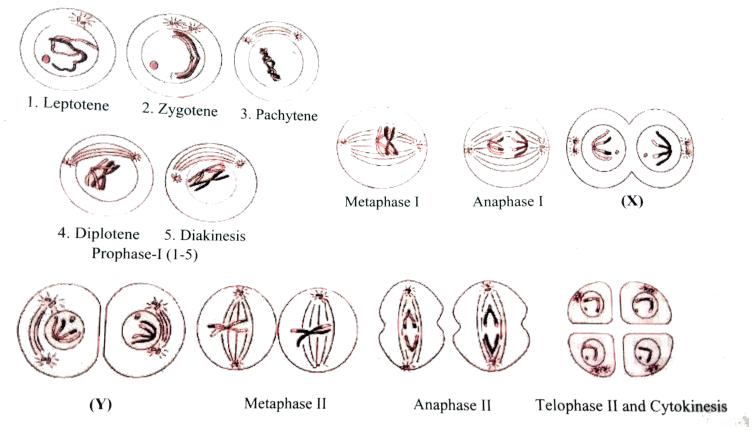
3. Observe the diagram and answer the questions given below it.



Identify the types of cell division shown in the figure.

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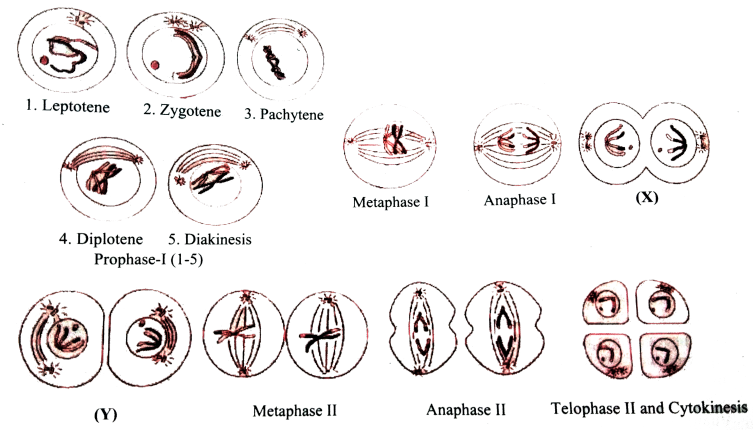
4. Observe the diagram and answer the questions given below it.



Identify the stages of cell division represented by X and Y .

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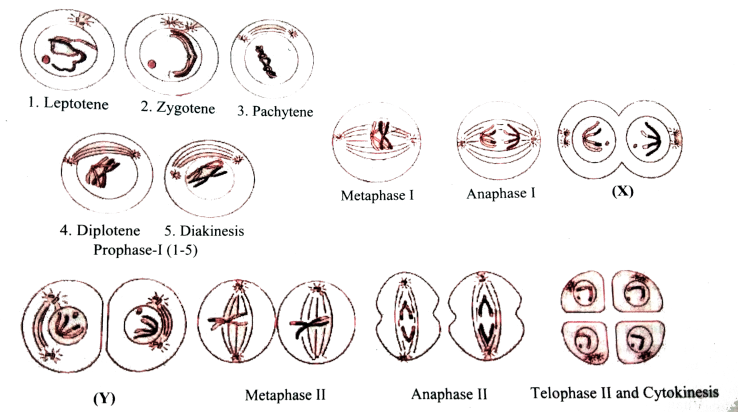
5. Observe the diagram and answer the questions given below it.



Which types of cells divide by the given process shown in the diagram?

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Questions Based On Paragraph

1. In eukaryotes, the process of division of a somatic parent cell into two daughter cells is known as mitosis. During the M or mitosis phase of a cell cycle, the chromosomes present in the nucleus are separated into two identical sets, which eventually form two daughter nuclei. This is followed by cytokinesis. Onion root tips are most commonly used to observe the different stages of mitosis in the laboratory. Each onion cell contains a total of eight chromosomes. DNA specific stains are used to visualise these

chromosomes in different phases of mitosis.

Name the stain that can be used to observe the different phases of mitosis.

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Considering the number of chromosomes in an onion cell is 8, what would be the number of chromosomes in each daughter cell after mitosis ?

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chromosomes in different phases of mitosis.

During which stage of mitosis are spindle fibers formed between centromers and centrioles?

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Why are onion root tips preferred for study of mitosis?

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5. In eukaryotes, the process of division of a somatic parent cell into two daughter cells is known as mitosis. During the M or mitosis phase of a cell cycle, the chromosomes present in the nucleus are separated into two identical sets, which eventually form two daughter nuclei. This is followed by cytokinesis. Onion root tips are most commonly used to observe the different stages of mitosis in the laboratory. Each onion cell contains a total of eight chromosomes. DNA specific stains are used to visualise these chromosomes in different phases of mitosis.

Mention are difference between mitosis occurring in onion root tip cell and human cheek cells.

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