



BIOLOGY

BOOKS - NAVNEET PUBLICATION

LIFE PROCESSES IN LIVING ORGANISMS: PART-1

Examples

1. How are the food stuffs and their nutrient contents useful for body?



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2. What is the important of balanced diet for body?



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3. Which different functions are performed by muscles in body?



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4. What is the importance of digestive juices in digestive system?



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5. Which system is in action for removal of waste material produced in human body?



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6. What is the role of circulatory system in energy production?



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7. How are the various processes occurring in the human body controlled? In how many ways?



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8. What is the respiration? How does it occur?



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9. How many atoms of C,H and O are respectively present in a molecule of glucose?



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10. Which types of chemical bonds are present between all these atoms?



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11. In terms of chemistry what happens actually when a molecule is oxidized?



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12. Which type of cellular respiration performs complete oxidation of glucose?



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13. Which cell organelle is necessary for complete oxidation of glucose?



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14. From where do we obtain the lipids?



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15. Many times, you cannot eat hot food due to inflammation/ulceration in mouth.





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16. Some persons experience difficulty in night vision since their childhood or adolescence.



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17. What happens to the cells of injured tissue?



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18. Whether new cells are formed during healing of wound?



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19. Do the plants get injured when do we pluck the flowers? How are those wounds healed?



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20. How does the growth of any living organism occur? Does the number of cells in

their body increases? If yes, how?



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21. How the new individual of a species is formed from existing one of same species?



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22. What is the shape of chromosome? Give its name in the adjacent figure:



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Exercise

1. Choose the correct alternate and write its alphabet against the sub question number:

The process of glycolysis occurs in

A. cytoplasm

B. mitochondria

C. nucleus

D. cell membrane

Answer: A



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2. Choose the correct alternate and write its alphabet against the sub question number:

After complete oxidation of a glucose molecules,number of ATP molecules are formed.

A. 14

B. 28

C. 29

D. 38

Answer: D



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3. Choose the correct alternate and write its alphabet against the sub question number:

At the end of glycolysis, molecules are obtained.

A. malate

B. fumarate

C. lactate

D. pyruvate

Answer: D



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4. Choose the correct alternate and write its alphabet against the sub question number:

ATP is calledof the cell.

- A. energy currency
- B. combustion fuel
- C. storage of glucose
- D. protein depot

Answer: A



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5. Choose the correct alternate and write its alphabet against the sub question number:

Genetic recombination occurs inphase of prophase of meiosis-I.

A. leptotene

B. zygotene

C. pachytene

D. diplotene

Answer: C



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6. Choose the correct alternate and write its alphabet against the sub question number:

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

A. prophase

B. metaphase

C. anaphase

D. telophase

Answer: B



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7. Choose the correct alternate and write its alphabet against the sub question number:

For formation of plasma membrane,
molecules are necessary.

A. fatty acids

B. phospholipid

C. proteins

D. carbohydrates

Answer: B



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8. Choose the correct alternate and write its alphabet against the sub question number:

Our muscle cells perform _..... type of respiration during exercise

A. aerobic

B. anaerobic

C. cellular

D. all the above

Answer: B



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

A. sugar

B. glucose

C. glycogen

D. protein

Answer: C



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10. Choose the correct alternate and write its alphabet against the sub question number:

Chemically vitamin B₂ is.....

A. Riboflavin

B. Nicotinamide

C. Cyanacobalumine

D. Pantothetic acid

Answer: A



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11. Choose the correct alternate and write its alphabet against the sub question number:

Somatic and stem cells undergo type of division.

A. meiosis

B. mitosis

C. budding

D. cloning

Answer: B



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12. Choose the correct alternate and write its alphabet against the sub question number:

Protein located in bones

A. myosin

B. melanin

C. haemoglobin

D. ossein

Answer: D



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13. Choose the correct alternate and write its alphabet against the sub question number:

Which of the following vitamins is necessary for synthesis of $NADH_2$?

A. Vitamin B_2

B. Vitamin B_3

C. Vitamin B_5

D. Vitamin K

Answer: B



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14. Choose the correct alternate and write its alphabet against the sub question number:

In mitotic division, nuclear membrane completely disappears in..... phase.

A. telophase

B. prophase

C. metaphase

D. anaphase

Answer: C



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15. Choose the correct alternate and write its alphabet against the sub question number:

The spindle fibres start appearing from

Stage of karyokinesis

A. prophase

B. metaphase

C. anaphase

D. telophase

Answer: B



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16. Choose the correct alternate and write its alphabet against the sub question number:

..... cells divide by mitosis.

A. Somatic

B. Gametes

C. Stem

D. Both A and C

Answer: D



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17. Write whether the following statements are true or false:

Glucose is oxidized step by step in the cells during the process of respiration at the body level.



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18. Write whether the following statements are true or false:

In aerobic respiration, glucose is oxidized in three steps.



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19. Write whether the following statements are true or false:

Glycolysis is also called Embden-Meyerhof-Parnas pathway.





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20. Write whether the following statements are true or false:

Molecules of pyruvic acid formed in this glycolysis are converted into molecules of acetyl-co-enzyme A



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21. Write whether the following statements are true or false:

Excess of ATP molecules obtained from proteins are not stored in the body.



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22. Write whether the following statements are true or false:

Proteins of animal origin are called 'first class' proteins,



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23. Write whether the following statements are true or false:

The disease related with the deficient synthesis of insulin is heart disease.



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24. Match the columns:

| [1] Protein | Part of the body (July '19) |
|-----------------|-----------------------------|
| (1) Haemoglobin | (a) muscles (b) skin |
| (2) Ossein | (c) bones (d) blood |



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25. Match the columns:

| [2] Protein | Part of the body | |
|-------------|------------------|-----------|
| (1) Keratin | (a) muscles | (b) skin |
| (2) Myosin | (c) bones | (d) blood |



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26. Find the odd one out:

Progesterone, Estrogen, Testosterone, Insulin



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27. Find the odd one out:

Actin, Ossein, Myosin, Melanin



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28. Find the odd one out:

Lipids, Carbohydrates, Fatty acids, Proteins



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29. Find the odd one out:

Alcohol, Vinegar, Pyruvic acid, Lactic acid.



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30. Find the odd one out:

Tricarboxylic acid cycle, Citric acid cycle, Krebs cycle, EMP pathway



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31. Considering the relationship in the first pair, complete the second pair by using a word or group of words :

Process that occurs in the cytoplasm :

Glycolysis :: Process that occurs in the mitochondria



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32. Considering the relationship in the first pair, complete the second pair by using a word

or group of words :

Skin : Keratin :: Blood:



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33. Considering the relationship in the first pair, complete the second pair by using a word or group of words :

Energy obtained from protein: 4 kcal:: Energy obtained from fats / lipids:



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34. Considering the relationship in the first pair, complete the second pair by using a word or group of words :

Breakdown of glucose molecule : Glycolysis ::

Formation of glucose from proteins:



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35. Considering the relationship in the first pair, complete the second pair by using a word or group of words :

Condensation of chromosomes : Prophase ::

Formation of spindle fibres:



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36. Considering the relationship in the first pair, complete the second pair by using a word or group of words :

Division of nucleus : Karyokinesis :: Division of cytoplasm ::



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37. Write definition of Nutrition.



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38. Write definition of Nutrients.



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39. Write definition of Proteins.



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40. Define the following: Cellular respiration



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41. Define the following: Aerobic respiration



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42. Define the following: Glycolysis



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43. Define the following: Gluconeogenesis



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44. Define the following: Fermentation



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45. Name the following :

Products formed after complete oxidation of

acetyl part present in the molecule of acetyl-coenzyme-A.



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46. Name the following :

Place where electron transfer chain reaction take place.



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47. Name the following :

Two co-enzymes involved in cellular respiration.



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48. Name the following :

Scientist who discovered the TCA cycle.



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49. Name the following :

Steps of anaerobic respiration.



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50. Name the following :

Most abundantly found protein in nature.



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51. Name the following :

Molecules forming plasma membrane. OR

Which molecules are necessary for the formation of plasma membrane?



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52. Distinguish between Glycolysis and TCA cycle :



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53. Distinguish between Aerobic and anaerobic respiration :



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54. Mitosis and meiosis OR Explain the difference between mitosis and meiosis :



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55. Give scientific reasons:

Oxygen is necessary for complete oxidation of glucose.



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56. Give scientific reasons:

Krebs cycle is also known as citric acid cycle.



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57. Give scientific reasons:

Sometimes, higher plants and animals too perform anaerobic respiration.



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58. Give scientific reasons:

We feel exhausted after exercising.



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59. Give scientific reasons:

While performing exercise, we feel tired.



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60. Give scientific reasons:

Fibres are one of the important nutrients.



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61. Give scientific reasons:

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



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62. Answer the following questions in detail:

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



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63. Answer the following questions in detail:

Write the forms to which the following food materials are converted after digestion :

Milk



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64. Answer the following questions in detail:

Write the forms to which the following food materials are converted after digestion :

Potato



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65. Answer the following questions in detail:

Write the forms to which the following food materials are converted after digestion :

Oil



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66. Answer the following questions in detail:

Write the forms to which the following food

materials are converted after digestion :

Chapati.



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67. Answer the following questions in detail:

On which two levels does respiration take place in living organisms?



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68. Answer the following questions in detail:

What is cellular respiration? What are its two types?



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69. Answer the following questions in detail:

Write main types of vitamins.



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70. Answer the following questions in detail:

Name water soluble vitamins.



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71. Answer the following questions in detail:

Name fat soluble vitamins.



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72. Answer the following questions in detail:

What are vitamins? State its two groups and six types.



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73. Answer the following questions in detail:

Why some living organisms have to perform anaerobic respiration?



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74. Answer the following questions in detail:

Give two examples of such living organisms.



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75. Two steps of anaerobic respiration



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76. Answer the following questions in detail:

Which molecules are formed after whole

oxidation of acetyl-co-enzyme A?



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77. Answer the following questions in detail:

Explain the glycolysis in detail



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78. Answer the following questions in detail:

Explain the Krebs cycle with reaction.



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79. Energy currency of the cell



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80. Answer the following questions in detail:

How is energy obtained during starvation or hunger?



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81. Why glycolysis is called as EMP pathway



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82. Answer the following questions in detail:

How are proteins obtained? What are the components of the proteins?



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83. Answer the following questions in detail:

Where and in which forms the amino acids formed after digestion of food are used in the body?



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84. Answer the following questions in detail:

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



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85. Answer the following questions in detail:

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



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86. Answer the following questions in detail:

How energy is formed from oxidation of carbohydrates, fats and proteins?



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87. Give explanations for the following statements :

After complete oxidation of a glucose molecules, 38 number of ATP molecules are formed.



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88. Give explanations for the following statements :

At the end of glycolysis, pyruvate molecules are obtained.



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89. Give explanations for the following statements :

Genetic recombination occurs in pachytene phase of prophase of meiosis-I.



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90. Give explanations for the following statements :

All chromosomes are arranged parallel to equatorial plane of cell in metaphase of mitosis.



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91. Give explanations for the following statements :

For formation of plasma membrane, phospholipid molecules are necessary.



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92. Give explanations for the following statements :

Our muscle cells perform anaerobic type of respiration during exercise



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93. Give explanations for the following statements :

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



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94. Use your brain power

Many players are seen consuming some food stuffs during breaks of the game. Why may be the players consuming these food stuffs?





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95. Use your brain power

Many times, we experience dryness in mouth.



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96. Use your brain power

Oral rehydration solution § (Salt-sugar. water)
is frequently given to persons experiencing
loose motions.



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97. Use your brain power

We sweat during summer and heavy exercise.



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98. What do you mean by diploid cell?



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99. What do you mean by haploid cell?



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100. Use your brain power

What do you mean by homologous chromosomes?



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101. Use your brain power

Whether the gametes are diploid or haploid?
Why?



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102. Use your brain power

How are the haploid cells formed?



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103. Use your brain power

What is the importance of haploid cells?



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104. complete the paragraph by choosing the appropriate words given in the brackets :

(gamete, crossing over, haploid, Meiosis-II, meiosis-I, diploid)

..... is just like mitosis. In this stage, the two haploid daughter cells formed in undergo division by separation of recombined sister chromatids and four daughter cells are formed. Process of production and spore formation occurs by meiosis. In this type of cell division, four haploid (n) daughter cells are formed from one cell. During this cell

division,occurs between the homologous chromosomes.



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105. complete the paragraph by choosing the appropriate words given in the brackets :

(external, inhalation, alveolar, breathing, respiration, exhalation)

Release of energy from the assimilated food is called Inhalation and exhalation is called When..... is done, air enters the

lungs. The oxygen from this air enters the blood while carbon dioxide from the blood exits from the blood, Through CO₂ is given out. This gaseous exchange occurs through membrane. This is called..... respiration. The RBCs carry oxygen to every cell.



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106. Read the paragraph and answer the questions given below :

Dietary fibre - found mainly in fruits, vegetables, whole grains and legumes — is probably best known for its ability to prevent or relieve constipation. But foods containing fibre can provide other health benefits as well, such as helping to maintain a healthy weight and lowering your risk of diabetes, heart disease and some types of cancer. Dietary fibre, also known as roughage or bulk, includes the parts of plant foods your body can't digest or absorb. Unlike other food components, such as fats, proteins or carbohydrates — which your body breaks down and absorbs —

fibre isn't digested by your body. Instead, it passes relatively intact through your stomach, small intestine and colon and out of your body.

Answer the question:

Which food items provide rich fibre content?



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107. Read the paragraph and answer the questions given below :

Dietary fibre - found mainly in fruits,

vegetables, whole grains and legumes — is probably best known for its ability to prevent or relieve constipation. But foods containing fibre can provide other health benefits as well, such as helping to maintain a healthy weight and lowering your risk of diabetes, heart disease and some types of cancer. Dietary fibre, also known as roughage or bulk, includes the parts of plant foods your body can't digest or absorb. Unlike other food components, such as fats, proteins or carbohydrates — which your body breaks down and absorbs — fibre isn't digested by your body. Instead, it

passes relatively intact through your stomach, small intestine and colon and out of your body.

Answer the question:

Enlist the advantages of fibres in diet.



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108. Read the paragraph and answer the questions given below :

Dietary fibre - found mainly in fruits, vegetables, whole grains and legumes — is

probably best known for its ability to prevent or relieve constipation. But foods containing fibre can provide other health benefits as well, such as helping to maintain a healthy weight and lowering your risk of diabetes, heart disease and some types of cancer. Dietary fibre, also known as roughage or bulk, includes the parts of plant foods your body can't digest or absorb. Unlike other food components, such as fats, proteins or carbohydrates — which your body breaks down and absorbs — fibre isn't digested by your body. Instead, it passes relatively intact through your stomach,

small intestine and colon and out of your body.

Answer the question:

Are fibres digested in the body?



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109. Read the paragraph and answer the questions given below :

Dietary fibre - found mainly in fruits, vegetables, whole grains and legumes — is probably best known for its ability to prevent

or relieve constipation. But foods containing fibre can provide other health benefits as well, such as helping to maintain a healthy weight and lowering your risk of diabetes, heart disease and some types of cancer. Dietary fibre, also known as roughage or bulk, includes the parts of plant foods your body can't digest or absorb. Unlike other food components, such as fats, proteins or carbohydrates — which your body breaks down and absorbs — fibre isn't digested by your body. Instead, it passes relatively intact through your stomach, small intestine and colon and out of your

body.

Answer the question:

Which is the path through which fibres pass in the digestive tract?



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110. Read the paragraph and answer the questions given below :

Dietary fibre - found mainly in fruits, vegetables, whole grains and legumes — is probably best known for its ability to prevent

or relieve constipation. But foods containing fibre can provide other health benefits as well, such as helping to maintain a healthy weight and lowering your risk of diabetes, heart disease and some types of cancer. Dietary fibre, also known as roughage or bulk, includes the parts of plant foods your body can't digest or absorb. Unlike other food components, such as fats, proteins or carbohydrates — which your body breaks down and absorbs — fibre isn't digested by your body. Instead, it passes relatively intact through your stomach, small intestine and colon and out of your

body.

Answer the question:

What is a roughage?



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111. Diagram-based questions :

Draw a neat diagram of the structure of chromosome and label the parts :

Centromere



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112. Diagram-based questions :

Draw a neat diagram of the structure of chromosome and label the parts :

p-arm



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113. Diagram-based questions :

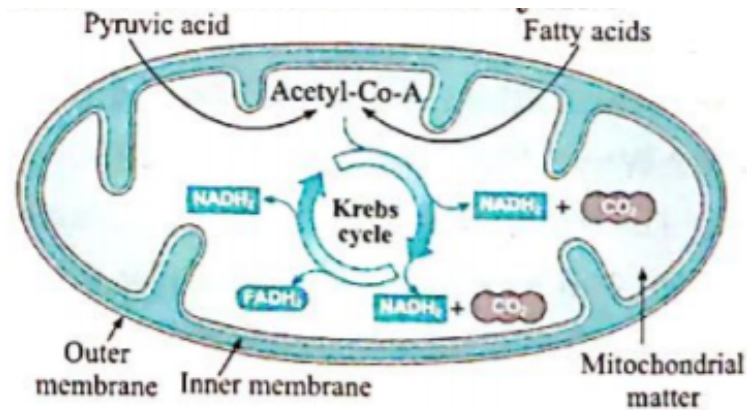
Sketch and label the diagram to show ATP-the energy currency of the cell.



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114. Diagram-based questions :

Mitochondria and Krebs cycle



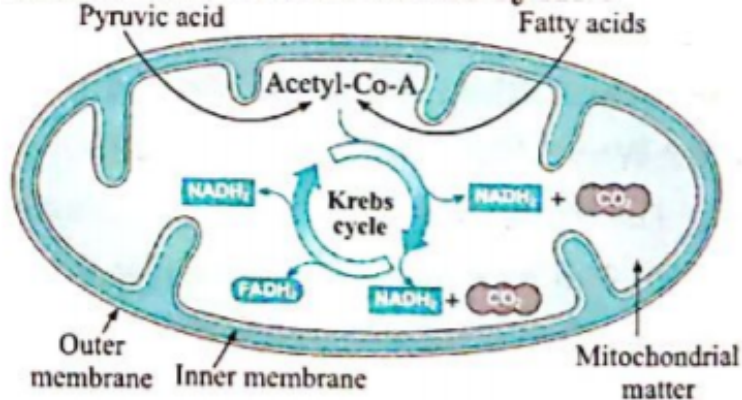
Which co-enzymes are shown in the diagram?



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115. Diagram-based questions :

Mitochondria and Krebs cycle



Which chemical reaction takes place in the mitochondria? Which molecules are produced in this reaction?



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116. Diagram-based questions :

Which peculiarity do you observe in the figure

of Metaphase -I of meiosis?



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117. Diagram-based questions :

What is the important difference between
Telophase-I and Telophase -II of meiosis?



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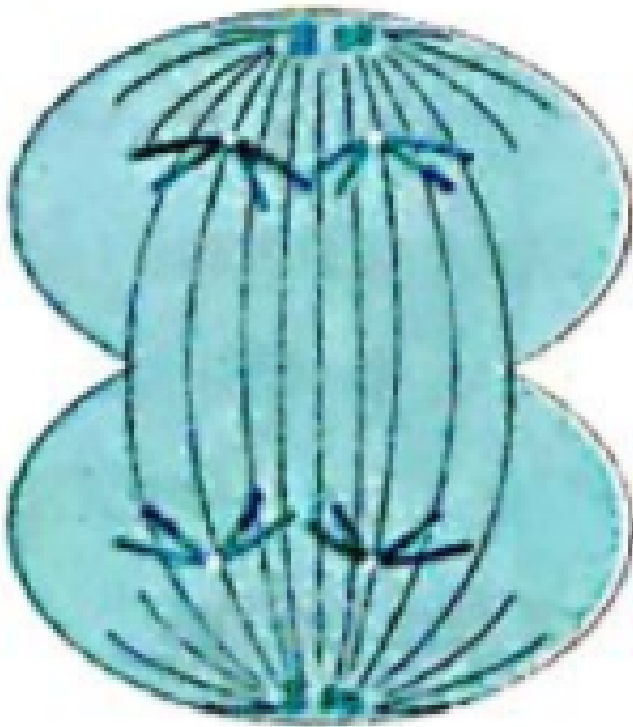
118. Label the diagram below. Which phase of
cell division is seen in the diagram given

below?



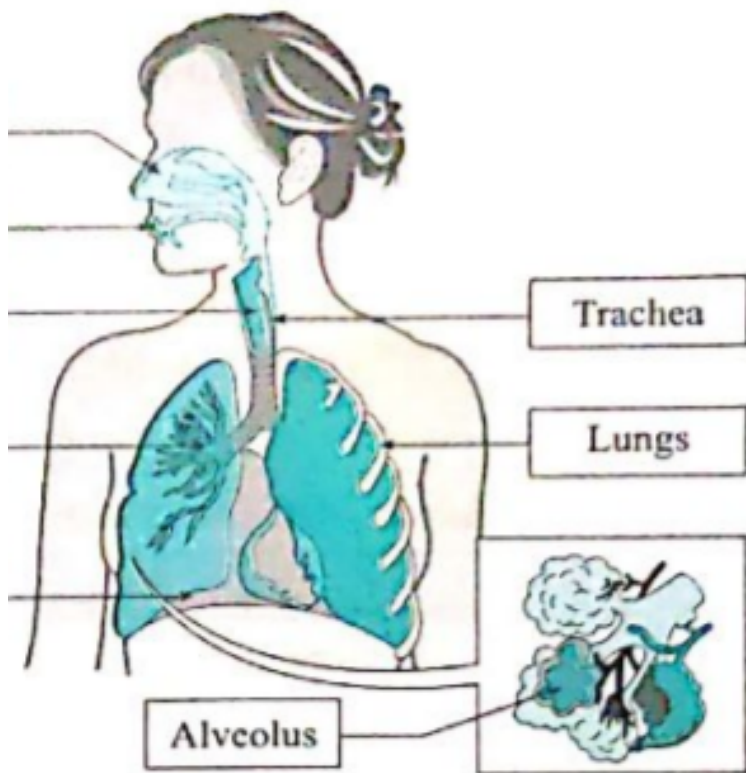
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119. State the characteristics of step of cell division shown in figure



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120. Observe and label the diagram :



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