



BIOLOGY

BOOKS - CHETANA BIOLOGY (MARATHI ENGLISH)

Heredity and Evolution

Exercise

1. _____ proved that except viruses, all living organisms have DNA as their genetic material.

A. Oswald Avery

B. Mclyn McCarthy

C. Colin MacLeod

D. All of these

Answer:



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2. Information about protein synthesis is stored in the _____.

A. mitochondria

B. DNA

C. RNA

D. ribosomes

Answer:



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3. _____ brings in the coded message from the DNA.

A. mRNA

B. tRNA

C. rRNA

D. Ribosomes

Answer:



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4. As per the message on mRNA, amino acids are supplied by tRNA. This is called as _____

A. Transcription

B. Translation

C. Translocation

D. Transportation

Answer:



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5. _____ is a gradual change occurring in living organisms over a long duration.

A. Evolution

B. Mutation

C. Variation

D. Heredity

Answer:



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6. The theory of natural selection was proposed by _____.

A. Mendel

B. Lamarck

C. Charles Darwin

D. Hugo de Vries

Answer:



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7. Carbon dating method measures the radio activity of C-14 and the ratio of _____ present in the organism's body.

A. C-12 to C-14

B. C-6 to C-7

C. C-14 to C-12

D. C-14 to O-16

Answer:



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8. Mammals have evolved from _____

A. aves

B. reptiles

C. amphibians

D. fishes

Answer:



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9. _____ is not a vestigial organ in man.

A. Appendix

B. Wisdom tooth

C. Body hair

D. Duodenum

Answer:



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10. _____ is pioneer of the modern genetics.

A. Johann Gregor Mendel

B. Hugo de Vries

C. Robert Hooke

D. Francis Jacob

Answer:



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11. _____ is the connecting link between annelida and arthropoda.

A. Lung fish

B. Peripatus

C. Petromzon

D. Duck billed platypus

Answer:



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12. Sometimes, any nucleotide of the gene changes its position which cause a minor change which is called_____.

A. Mutation

B. Translation

C. Transcription

D. Translocation

Answer:



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13. Carbon dating method is developed by

_____.

A. Johann Gregor Mendel

B. Dr har Govind Khurana

C. Oswald Avery

D. Williard Libby

Answer:



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14. _____ is not a vestigeal organ in human body.

A. Appendix

B. Coccyx

C. Duodenum

D. Wisdom teeth

Answer:



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15. The causality behind the sudden changes was understood due to ____ principle of Hugo de Vries.

A. Translocation

B. Transcription

C. Mutation

D. Translation

Answer:



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16. The proof for the fact that protein synthesis occurs through _____ was given by George Beadle and Edward Tatum.

A. mitochondria

B. nucleus

C. gene aminoacids

D.

Answer:



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17. Transfer of information from molecule of DNA to mRNA is called as _____ process.

A. Transcription

B. Translation

C. Translocation

D. Mutation

Answer:



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18. Evolution means _____

A. slow

B. fast

C. gradual development

D. sudden development

Answer:



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19. Vestigial organ _____ present in human body is the proof of evolution

A. ear

B. Appendix

C. tail

D. teeth

Answer:



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20. Find the odd one out:

Transcription, translation, translocation,
transpiration.



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21. Find the odd one out:

Appendix, muscles of ear pinna, wisdom teeth,
long neck of giraffe.



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22. Find the odd one out :

Coccyx, intestine, wisdom teeth, appendix.



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23. State whether the following statement True or False. Correct the false statements.

Complex proteins control various functions in the body of living organisms and their appearance too.



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24. State whether the following statements True or False. Correct the false statements.

Mutation may cause the genetic disorders like sickle cell anemia.



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25. State whether the following statements

True or False. Correc the false statements.

Muscles of ear pinna, which are useful to human, are useless in monkeys for movement of ear pinna.



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26. State whether the following statements

True or False. Correc the false statements.

Evolution is gradual change occuring in living organism over a long duration.



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27. State whether the following statements

True or False. Correc the false statements.

Waltor Sutton is the pioneer of modern genetics.





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28. State whether the following statements True or False. Correc the false statements.

Ostwald Avery, Mclyn McCarthy and Colin Macleod proposed amodel for process of protein synthesis with the help of DNA in bacterial cells



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29. State whether the following statements

True or False. Correc the false statements.

Information about protein synthesis is stored in the RNA.



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30. State whether the following statements

True or False. Correc the false statements.

Both the stands of DNA are used in the process of protein synthesis.





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31. State whether the following statements True or False. Correc the false statements.

The process of RNA synthesis is called translation.



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32. State whether the following statements True or False. Correct the false statement. First living material has been formed in the ocean.



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33. State whether the following statements True or False. Correct the false statements.
Appendix is useless to humans.



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34. State whether the following statements True or False. Correc the false statements.

Duckbill platypus is a connecting link between annelida and arthropoda.



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35. State whether the following statements True or False. Correc the false statements.

Geographical or reproductive isolation leads to speciation.



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36. State whether the following statements

True or False. Correc the false statements.

About 10 thousands years ago, wise man started to practice agriculture.



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37. Name the following.

First record of human like animal in the form of ape from East Africa.



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38. Name the following.

He called his concepts as principle of 'use or disuse of organs'



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39. Name the following.

Example indicating that mammals are evolved from reptiles and amphibians from fishes.



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40. Complete the analogy:

Similarities in characters: Morphological evidence :: Similarities in structure of bones and joints : _____.



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41. Complete the analogy:

Similarities in initial stages : _____ ::

Organisms remains preserved underground :

Paleontological evidences.





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42. Complete the analogy:

_____ : 1,50,000 years ago :: Cro-Magnon
man : 50,000 years ago.



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43. Complete the analogy:

_____ : 1,50,000 years ago :: Cro-Magnon
man : 50,000 years ago.



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44. Define the following :

Heredity



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45. Define the following :

Evolution



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46. Define the following :

Vestigial organs



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47. Define the following :

Carbon dating method



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48. Define the following :

Ancestry of acquired characters



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49. Define the following :

Central Dogma



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50. Define the following :

Transcription



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51. Define the following :

Triplet colon



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52. Define the following :

Translation



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53. Define the following :

Mutation



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54. Define the following :

Fossils



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55. Define the following :

Speciation



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56. Write short notes:

Connecting link



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57. Write short notes:

Embryology



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58. Define the following :

Speciation



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59. Write short notes:

Lamarckism



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60. Write short notes:

Dawin's theory of natural selection



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61. Write short notes:

Evolution



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62. Answer in short:

Which component of the cellular nucleus of living organisms carries hereditary characters?



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63. Answer in short:

What do we call to the process of transfer of physical and mental characters from parents to the progeny?



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64. Answer in short:

Which are the components of DNA molecule?



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65. Answer in short:

What is the function of the appendix of our digestive system?



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66. Answer in short:

Are our wisdom teeth really useful for chewing the food?



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67. Answer in short:

Why did the huge animals like dinosaur become extinct?



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68. Answer in short:

Why are many species of animals and birds getting extinct?



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69. Answer in short:

What objections were raised against Darwin's theory of natural selection?



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70. Answer in short:

Explain the meaning of genetic disorders and give names of some disorders.



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71. Answer in short:

Which are the different organs in body of organism?



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72. Answer in short:

Is each of the organs useful to organism?



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73. Human evolution began approximately 7 crore years ago.



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74. State whether the following statements

True or False. Correc the false statements.

Geographical or reproductive isolation leads to speciation.



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75. Study of fossils is an important aspect of study of evolution.



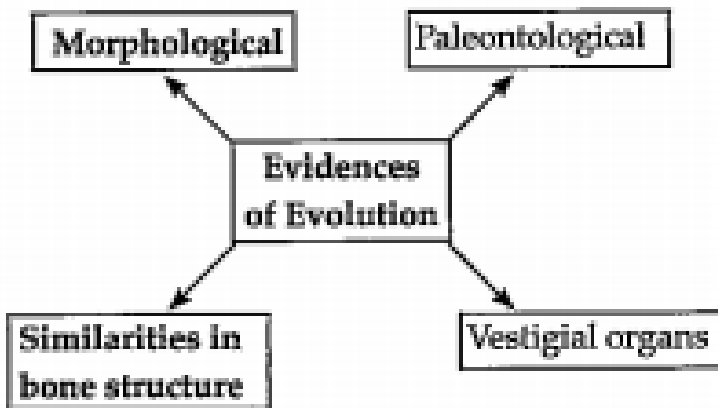
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76. There is evidence of fossil science among chordates.



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77. Complete the following Chart:



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78. Complete the flow chart by writing the answers for 'A' and 'B' and define them:

$DNA \xrightarrow{A} mRNA \xrightarrow{B}$ chains of Amino

Acids.



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79. Draw neat and labelled diagram of:

Transcription



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80. Draw neat and labelled diagram of:

Translaton and Translocation



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81. Draw neat and labelled diagram of:

Mutation



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82. Observe the figure and answer the questions given below:

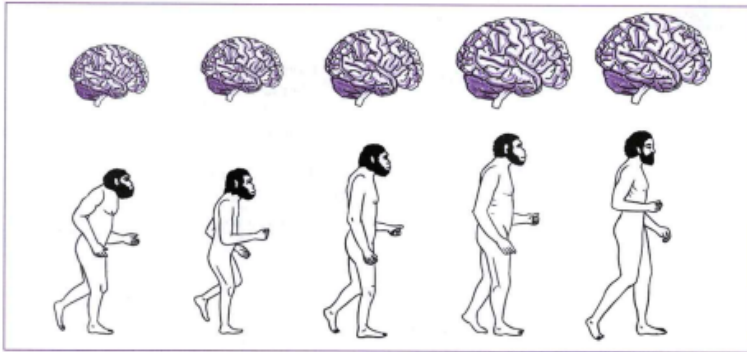


Fig. 1.5. Development of Human Brain



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83. What does the picture of the last man indicate to us and what was he called?

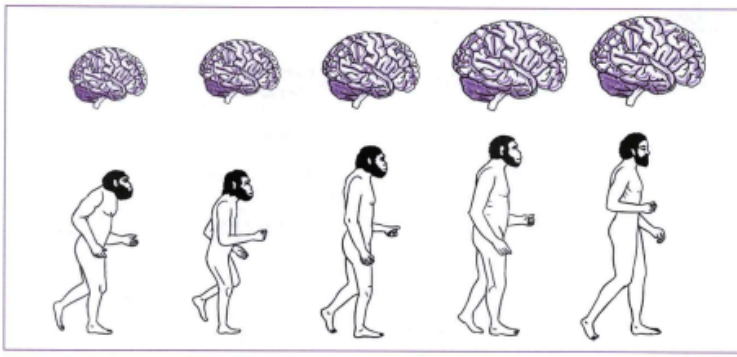


Fig. 1.5. Development of Human Brain



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84. What does the picture of the last man indicate to us and what was he called?

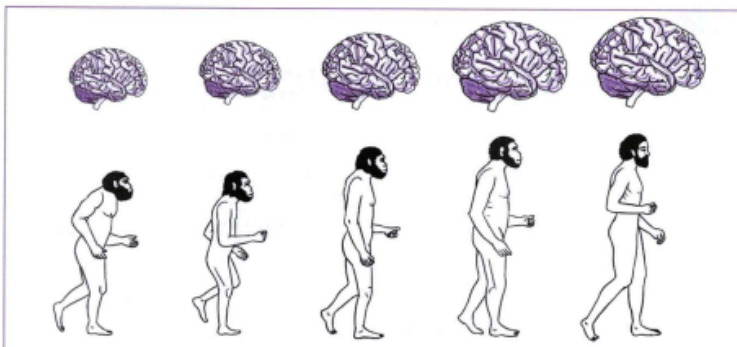


Fig. 1.5. Development of Human Brain



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85. How did the change happen from first man to the last man as shown in the picture?

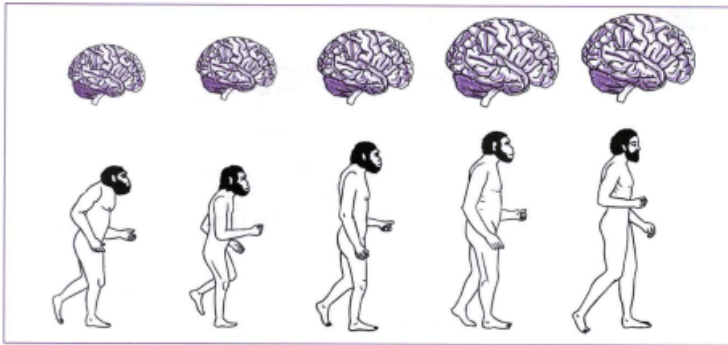


Fig. 1.5. Development of Human Brain



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86. Label parts 1 to 4

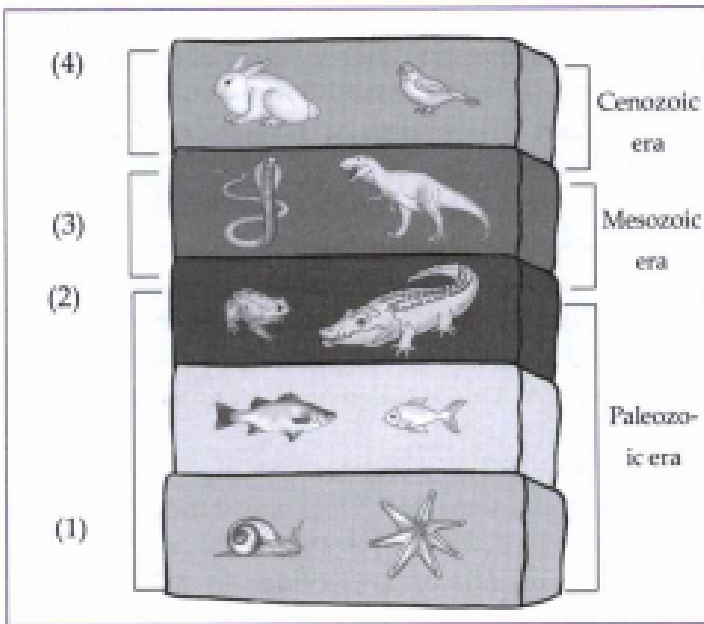


Fig. 1.6: Structure of ground level and fossils



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87. Label parts 1 to 4

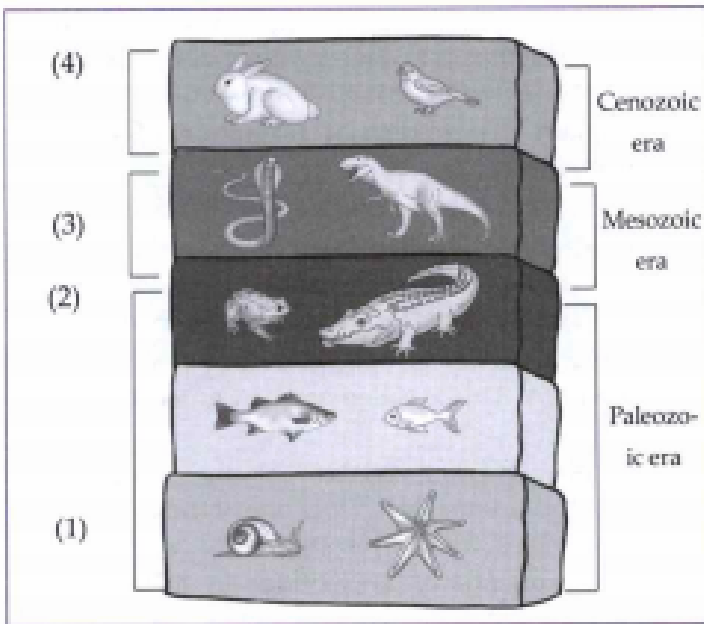


Fig. 1.6: Structure of ground level and fossils



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88. What is the evidence of evolution shown in the picture?

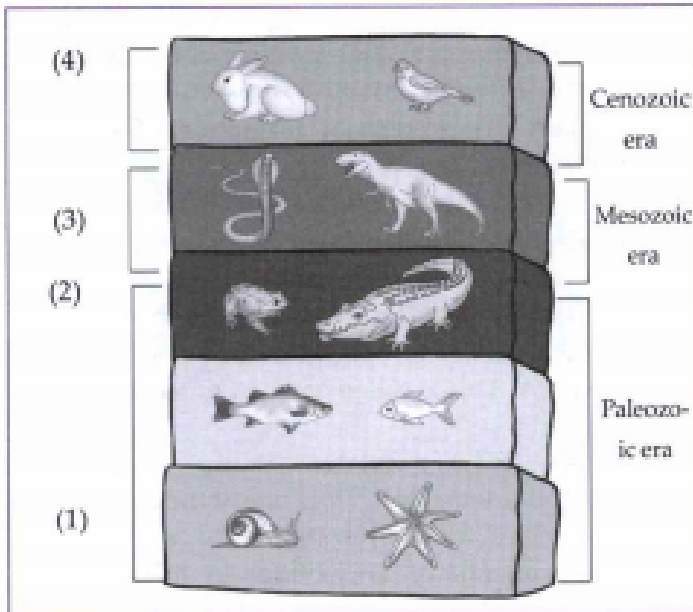


Fig. 1.6: Structure of ground level and fossils



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89. What is Carbon dating?

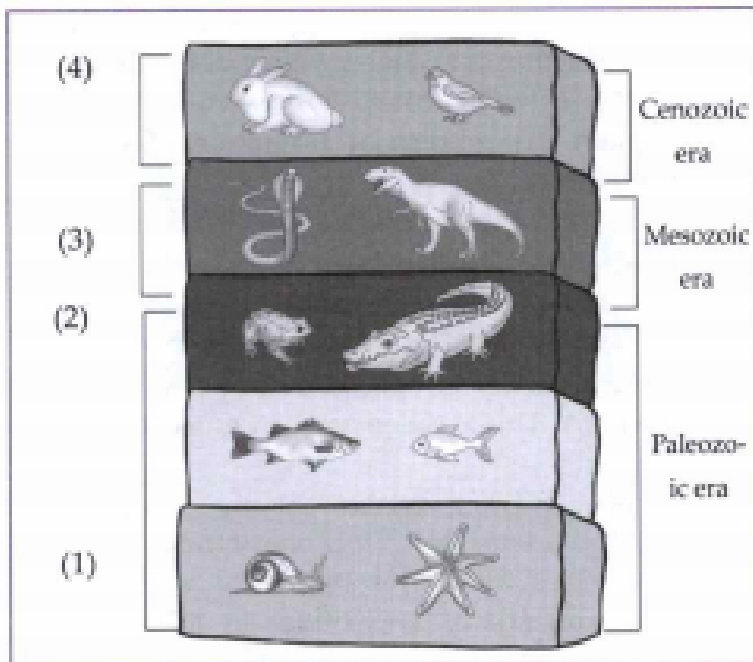
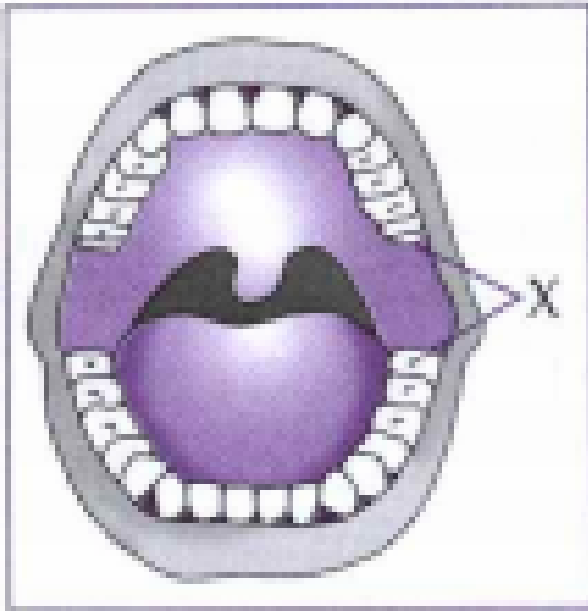


Fig. 1.6: Structure of ground level and fossils



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90.



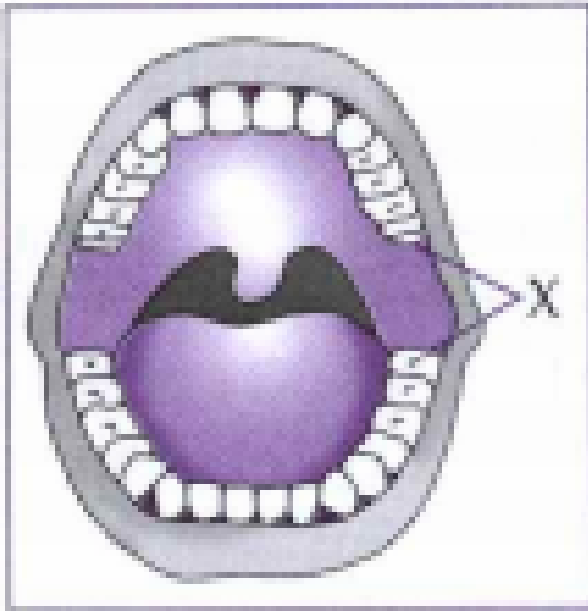
Identify

the part labelled as 'X'



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91.



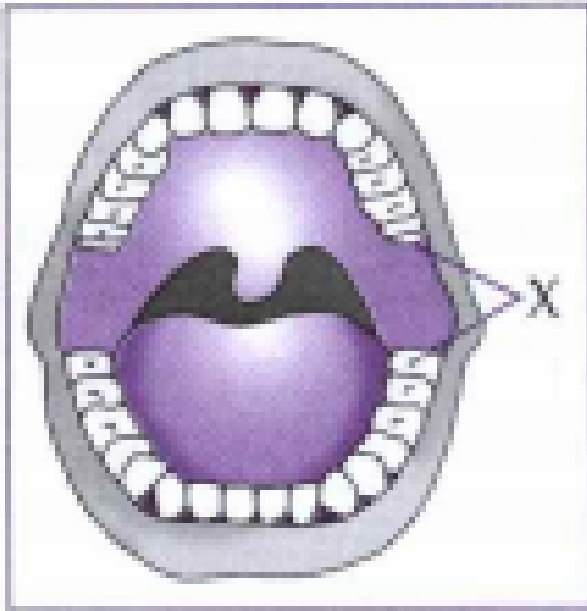
Identify

the part labelled as 'X'



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92.



Identify

the part labelled as 'X'



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93. Sketch and explain the structure of DNA and various type of RNA.



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94. How are the hereditary changes responsible for evolution?



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95. Explain the process of formation of complex proteins.



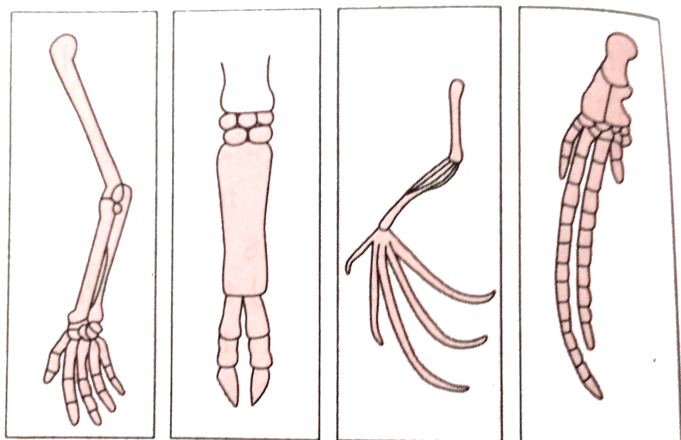
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96. Explain the theory of evolution and mention the proof supporting it.



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97. Observe the following diagram and explain the anatomical evidences with the help of the given diagram.



**Human
hand**

**Foreleg
of Ox**

**Forelimb
of Bat**

**Flipper
of Whale**



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98. Study of fossils is an important aspect of study of evolution.

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99. How did the change happen from first man to the last man as shown in the picture?

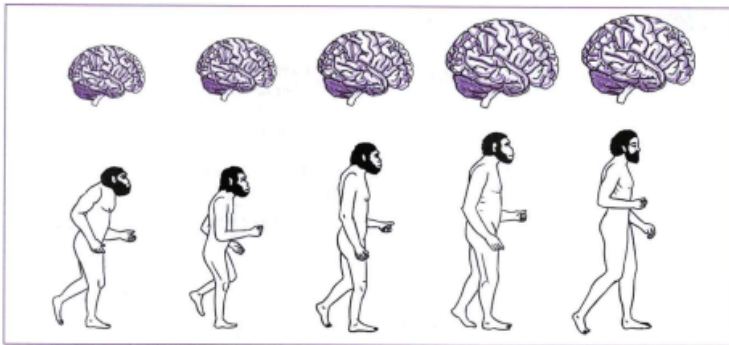


Fig. 1.5. Development of Human Brain

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100. Define vestigial organs. Write names of some vestigial organs in human body and write the names of those animals in whom same organs are functional.



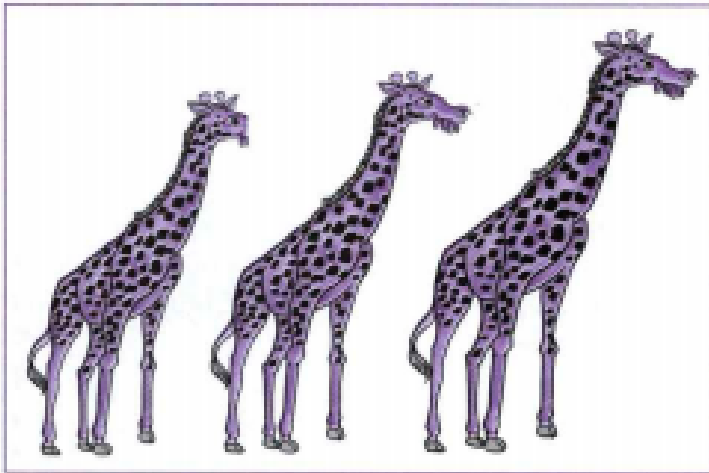
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101. Define heredity. Explain the mechanism of hereditary changes.



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102. Observe the picture and answer the questions:

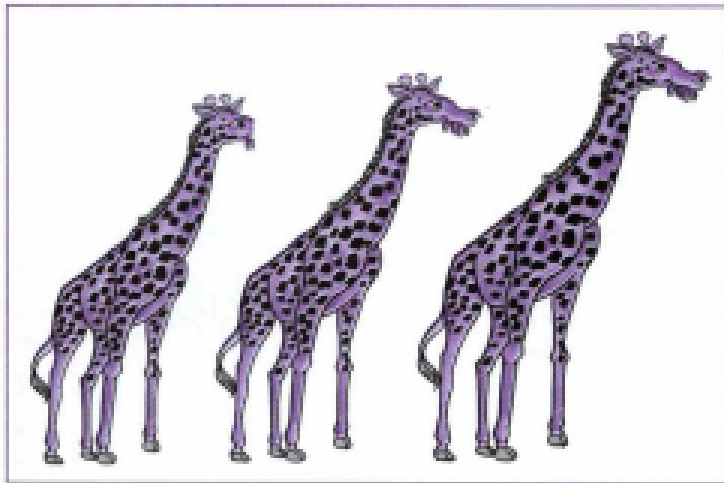


Why was this theory disproved?



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103. Observe the picture and answer the questions:

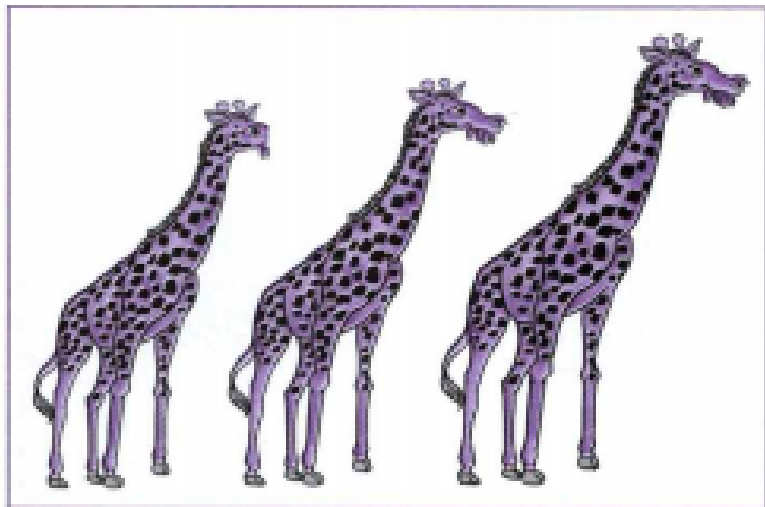


The picture depicts a theory of use or disuse of organs. Name it.



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104. Observe the picture and answer the questions:

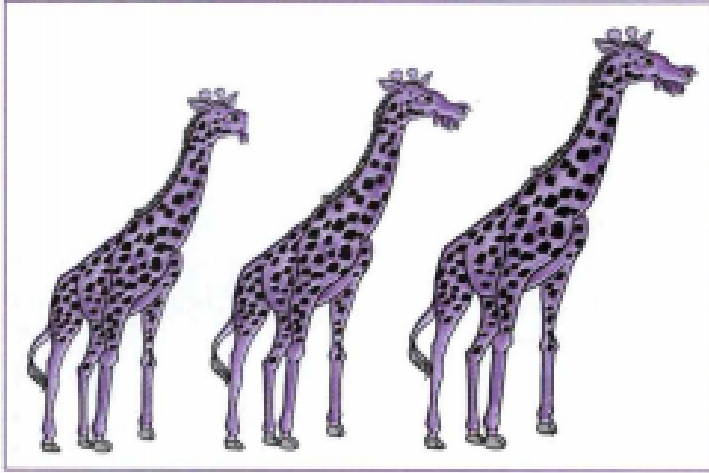


Give an example and explain the theory with its help.



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105. Observe the picture and answer the questions:



Why was this theory disproved?



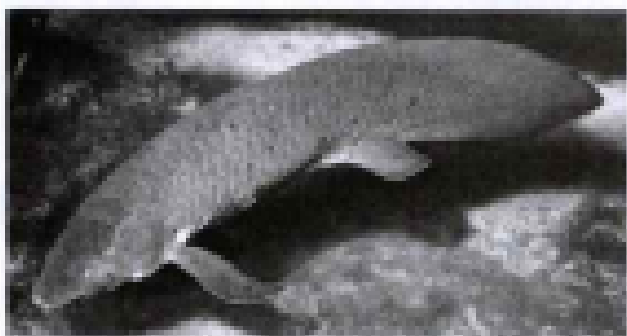
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106.

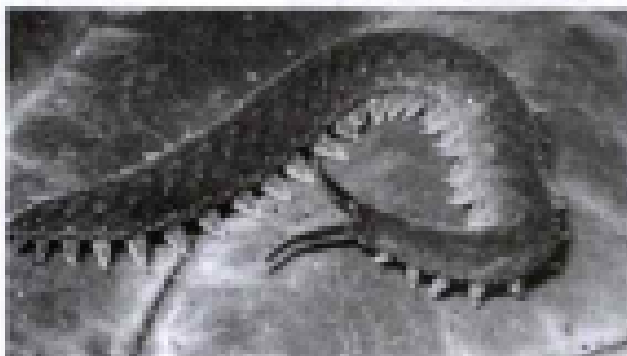
(1)



(2)



(3)



Observe the picture and identify each organisms.



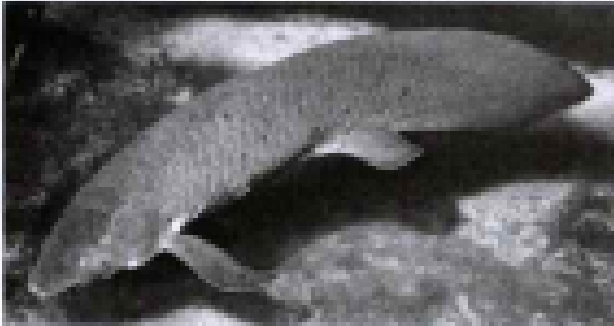
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107. Explain their role in proving the process of evolution.

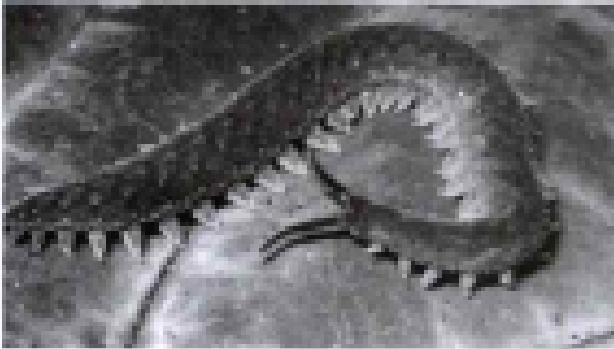
(1)



(2)



(3)



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108. Choose the correct option and rewrite the complete statement:

Information about protein synthesis is stored in the _____

A. mitochondria

B. DNA

C. RNA

D. ribosomes

Answer:



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109. _____ is not a vestigial organ in man.

A. Appendix

B. Wisdom tooth

C. Body hair

D. Duodenum

Answer:



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110. Answer the following:

Example indicating mammals are evolved from reptiles.



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111. State whether the following statements

True or False. Correc the false statements.

Geographical or reproductive isolation leads to speciation.



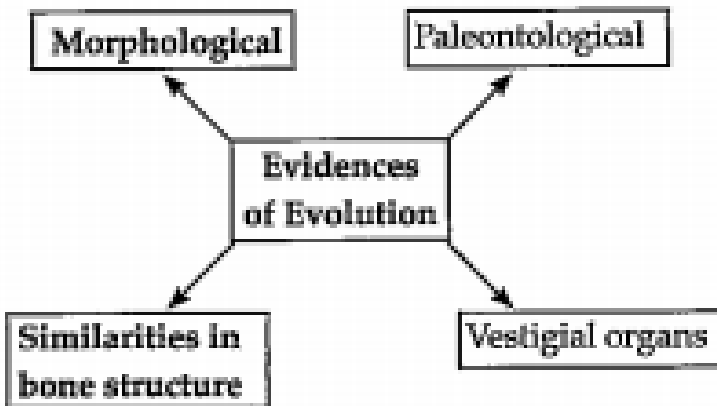
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112. Define the following :

Carbon dating method

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113. Complete the following Chart:



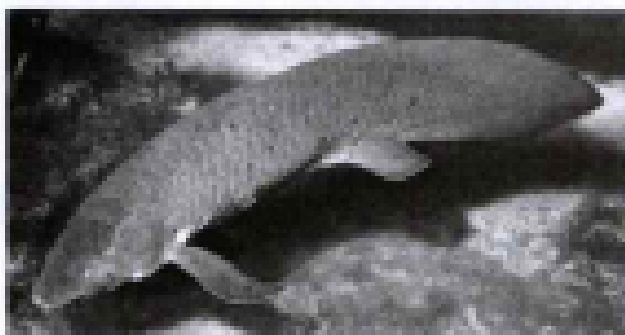
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114.

(1)



(2)



(3)



Observe the picture and identify each organisms.



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115. With the help of diagram explain different types of RNA.



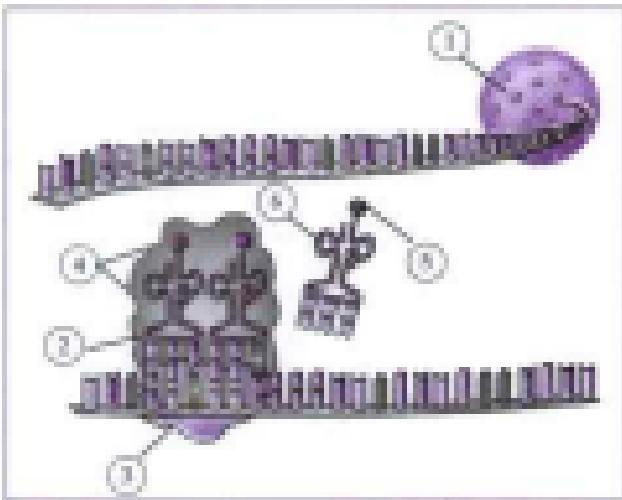
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116. Study of fossils is an important aspect of study of evolution.



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117.



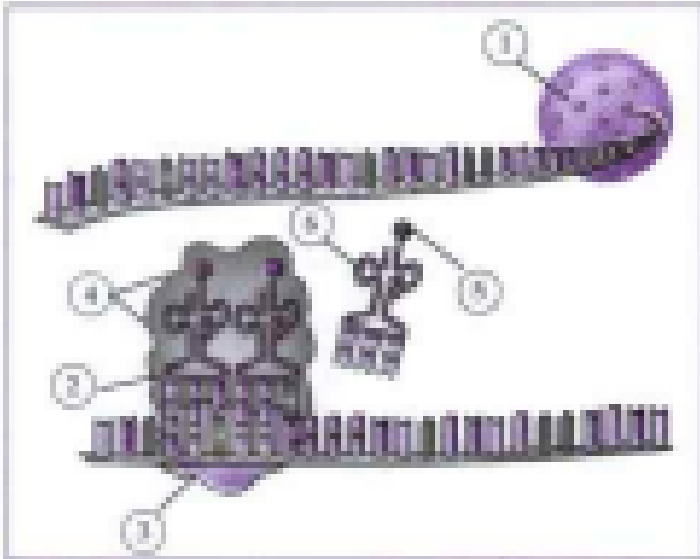
Identify

6 state its function. Label parts 1,2,3,4 & 5.



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118.



Which

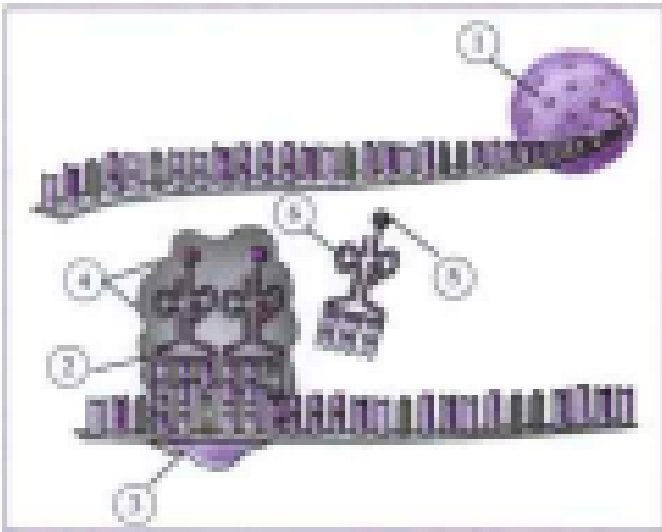
two processes are shown in this diagram?

Define them.



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119.



Observe the diagram carefully and explain in brief.



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120. Explain three evidences of evolution giving examples.



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