



BIOLOGY

BOOKS - CHETAN BIOLOGY (TAMIL ENGLISH)

HEREDITY AND EVOLUTION

Master Key Question Set 1

1. is a pioneer of the modern genetics.



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2. is the transfer of biological characters from one generation to another via genes.



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3. Each m RNA is made up of thousands of



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4. Vertebrates have slowly originated from

.....



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5. Is the connecting link between annelida and arthropoda.



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6. Darwin had published a book titled.....



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7. Man can be considered as the first example of wise man.



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8. Is produced as per the sequence of nucleotides on DNA.



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9. There is In RNA instead of thymine of DNA.



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10. The code for each amino acid consists of three nucleotides, called as.....



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11. a scientist of Indian origin discovered triplet codons for 20 amino acids.



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12. Ribosomes keeps moving from one end of mRNA to other end by the distance of one triplet codon. This is called as.....



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13. Sometimes, any nucleotides of the gene changes its position which cause a minor change which is called.....



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14. Carbon dating method is developed by.....



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15. Ape-like animals reached the South and North-East Asia and finally evolved into.....



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16. The first human-like animals with erect posture evolved about..... Years ago.



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17. First record of human-like animal as in the form ofape from East Africa.



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18. Human walking with erect posture was evolved about..... years ago.



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19. The Evolved about 50 thousand years ago.



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20. About years ago, wise-man started to practice agriculture.



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21. Complete the statements by choosing correct options from bracket.

(Gene, Mutation, Translocation, Transcription, Gradual development, Appendix)

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



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22. Complete the statements by choosing correct options from bracket.

(Gene, Mutation, Translocation, Transcription, Gradual development, Appendix)

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



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23. Complete the statements by choosing correct options from bracket.

(Gene, Mutation, Translocation, Transcription, Gradual development, Appendix)

Transfer of information from molecule of DNA to mRNA is called as..... Process.



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24. Complete the statements by choosing correct options from bracket.

(Gene, Mutation, Translocation, Transcription,
Gradual development, Appendix)

Evolution means..... .



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25. Complete the statements by choosing correct options from bracket.

(Gene, Mutation, Translocation, Transcription,
Gradual development, Appendix)

Vestigial organ..... Present in human
body is the proof of evolution.



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Find The Odd One Out

1. Transcription, Translation, Translocation, transpiration.



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2. Find the odd one out:



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3. Cocyx, intestine, wisdom teeth, appendix.

Find the odd one



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Match The Coloumns

Q.1. (A) 4. Match the following

Column 'A'		Column 'B'	
1)			
(1)	Walter Sutton	(a)	All living organisms have DNA (1944)
(2)	Ostwald Avery, Melyn Mccarthy and Colin MacLeod	(b)	Process of protein synthesis (1961)
(3)	Francois Jacob and Jack Monad	(c)	Triplet codons for 20 amino acids
(4)	Dr. Har Govind Khorana	(d)	Carbon dating
(5)	Willard Libby	(e)	Paired chromosomes in the cells (1902)
		(f)	Mutation

1.



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2.

Column 'A'		Column 'B'	
(1)	Aves and Mammals	(a)	Mesozoic era
(2)	Reptiles	(b)	Cenozoic era
(3)	Reptiles, amphibia, pisces	(c)	Paleozoic era



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State Whether The Following Statements True Or False Correct The False Statements

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



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2. Mutation may cause the genetic disorders like sickle cell anemia.



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



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4. Evolution is a gradual change occurring in living organisms over a long duration.



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5. Walter Sutton is the pioneer of modern genetics.



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6. Oswald Avery, Mclyn McCarthy and Colin Macleod proposed a model for process of protein synthesis with the help of DNA in bacterial cells.



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7. Information about protein synthesis is stored in the RNA.



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8. Both the strands of RNA synthesis is called translation.



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9. The process of RNA synthesis is called translation.



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10. Amino acids are supplied by tRNA.





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11. First living material has been formed in the ocean.



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12. Appendix is useless to humans.



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13. Duckbill platypus is a connecting link between annelida and arthropoda.



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14. Geographical or reproductive isolation leads to speciation.



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



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Name The Following

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



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2. He called his concept as principle of 'use or disuse of organs'



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3. Example indicating that mammala are evolved from reptiles and amphibians from fishes.



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[Complete The Analogy](#)

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



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2. Similarities in initial stages:..... :: Organisms remains preserved underground : Paleontological evidences.



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3.: 1,50,000 years ago :: Cro-Magnon man : 50,000 years ago.



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4. 1,00,00,000 years ago :..... :: 40,000 years ago: Australopithecus.



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Choose And Write The Correct Option

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

A. Oswald Avery

B. Mclyn McClarty

C. Colin MacLeod

D. All of these

Answer:



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2.proposed a model for protein synthesis with the help of DNA in bacterial cells.

A. Johann Gregor Mendel

B. Walter and Sutton

C. Francois Jacob and Jack Monad

D. Hugo de Vries

Answer:



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3. Information about protein synthesis is stored in the RNA.

A. mitochondria

B. DNA

C. RNA

D. ribosomes

Answer:



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4. Brings in the coded message from the DNA.

A. mRNA

B. tRNA

C. rRNA

D. ribosomes

Answer:



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5. 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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6. 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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7. The theory of natural selection was proposed by.....

A. Mendel

B. Lamarck

C. Charles darwin

D. Hugo de Vries

Answer:



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8. Carbon dating method measures the radioactivity 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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9. Mammals have evolved from.....

A. aves

B. reptiles

C. amphibians

D. fishes

Answer:



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10.is not a vestigial organ in man.

A. Appendix

B. Wisdom tooth

C. Body hair

D. Duodenum

Answer:



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Define The Following

1. Heredity



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2. Define Evolution



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3. Vestigial organs



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4. Carbon dating method



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5. What is meant by Ancestry of acquired characters.



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6. Central Dogma



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7. Transcription



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8. Triplet codon



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9. Translation



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10. Translocation



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11. Mutation



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12. Fossils



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13. Speciation



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Write Short Notes

1. Connecting link



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2. Embryology



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3. Speciation



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4. Lamarckism



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5. Dawin's theory of natural selection



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6. Evolution



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[Answer In Short](#)

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



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



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3. Which are the compounds of DNA molecule?



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



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5. Are our wisdom teeth really useful for chewing the food?





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6. Why did the huge animals like dinosaur become extinct?



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7. Why are many species of animals and birds getting extinct?



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8. What objectives were raised against Darwin's theory of natural selection?



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



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10. Which are the different organs in body of organisms?



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11. Is each of the organs useful to organism?



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12. Observe the following images and note the similarities between given animal images and plant images.



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Read The Following Statements And Justify The Same In Your Own Words With The Help of Suitable Examples

1. Human evolution began approximately 7 crore years. Ago.



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2. Geographical or reproductive isolation leads to speciation.



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



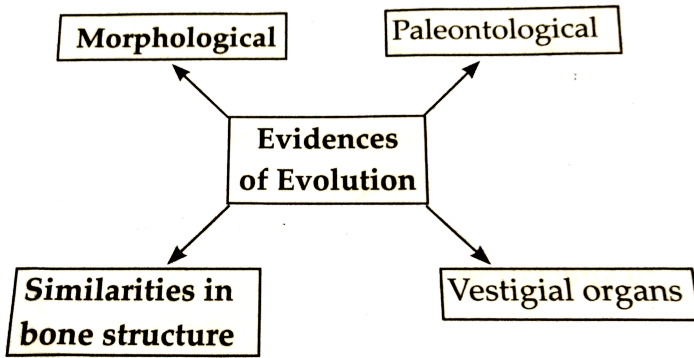
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4. There is evidence of fatal science among chordates.



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Complete The Following Chart



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2. 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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Draw Neat And Labelled Diagrams Of

1. Transcription



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2. Translaton and Translocation



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3. Mutation

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Observe The Figure And Answer The Questions Given Below

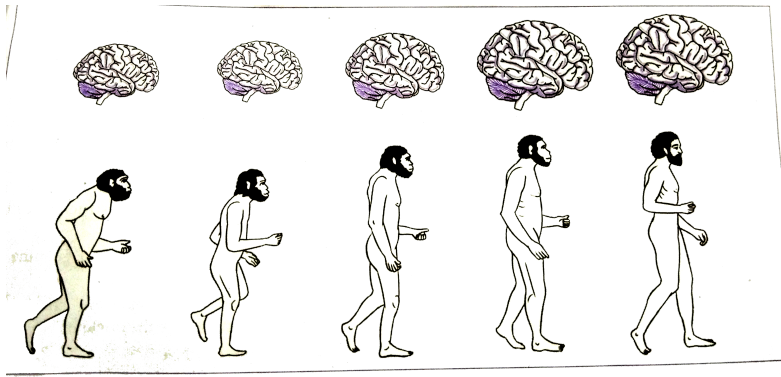


Fig. 1.5. Development of Human Brain

1.

(a) What is the picture about?

(b) What does the picture of the last man indicate to us and what was he called?

(c) How did the change happen from first man to the last man as shown in the figure?



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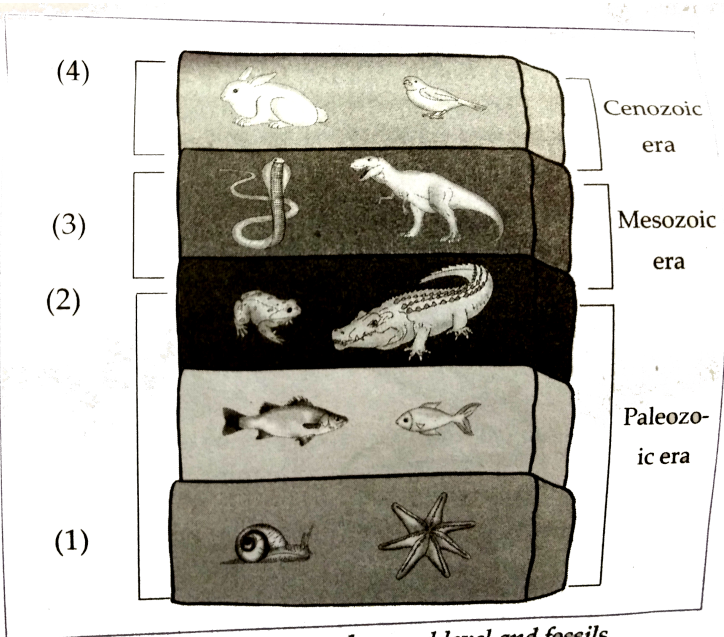


Fig. 1.6: Structure of ground level and fossils

2.

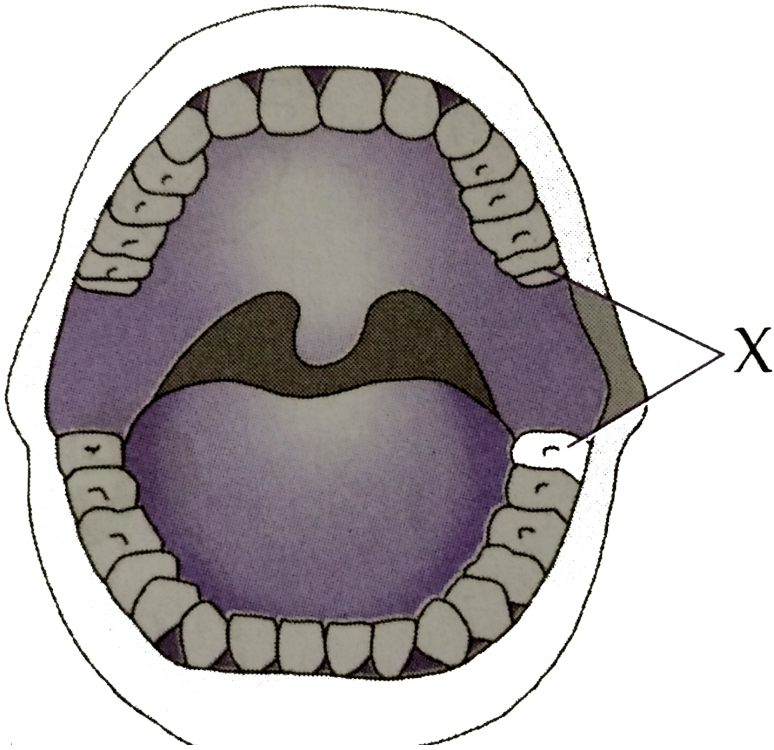
(a) Label parts 1 to 4.

(b) What is the evidence of evolution shown in the picture?

(c) What is Carbon dating?



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3.

(a) Identify the part labelled as 'X'

(b) Name the type of organ shown in the given picture.

(c) State any two other examples of such organs in humans.



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Answer In Detail

1. Sketch and explain the structure of DNA and various types of RNA.



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2. How are the hereditary changes responsible for evolution?



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3. Explain the process of formation of complex proteins?



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



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5. Explain with suitable examples importance of anatomical evidences in evolution.



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6. Define fossil. Explain importance of fossils as proof of evolution.



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7. Write the evolutionary history of modern man.



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



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



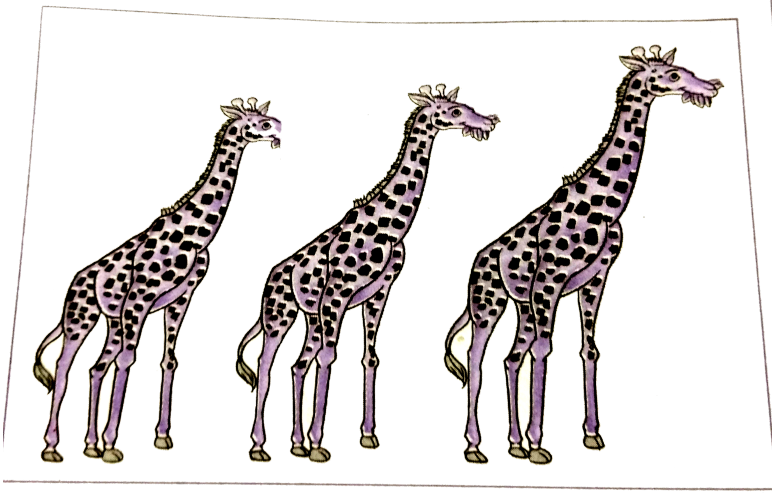
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10. Explain with the help of flow chart the theory of Evolution.



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Observe The Picture And Answer The Questions



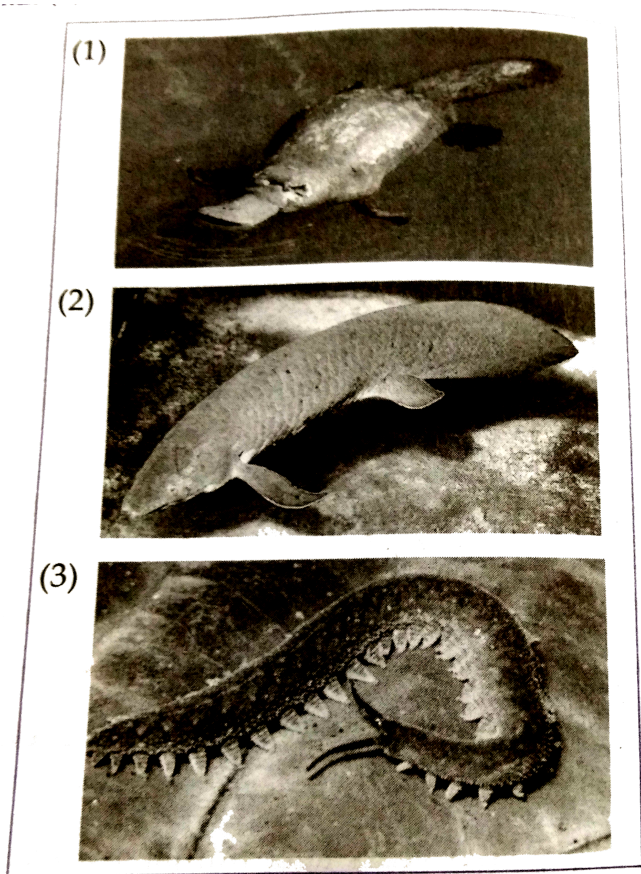
1. Lamarckism

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

(b) Name the scientist who proposed it.

(c) Give one example and explain the theory with its help.

Why was this theory disproved?



2. *Some animals with special characteristics*

(a) Observe the picture and identify each organisms.

(b) Explain their role in proving the process of evolution.



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Assignment 1

1. Fill in the blanks.

(a) The code for each amino acid consist of three nucleotides called.....

(b) Darwin had published a book titled.....



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



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3. Information about protein synthesis is stored in the RNA.

A. mitochondria

B. DNA

C. RNA

D. ribosomes

Answer:



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4.is not a vestigial organ in man.

A. Appendix

B. Wisdom tooth

C. Body hair

D. Duodenum

Answer:



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5. Geographical or reproductive isolation leads to speciation.



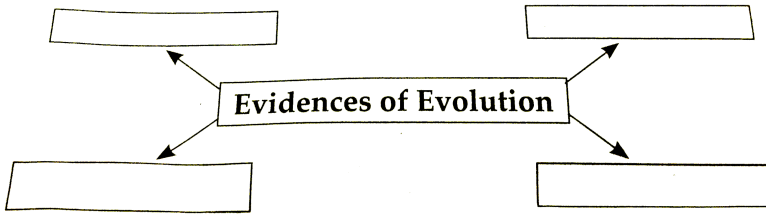
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6. Carbon dating method



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7. Complete the flow chart.



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8. Connecting link



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

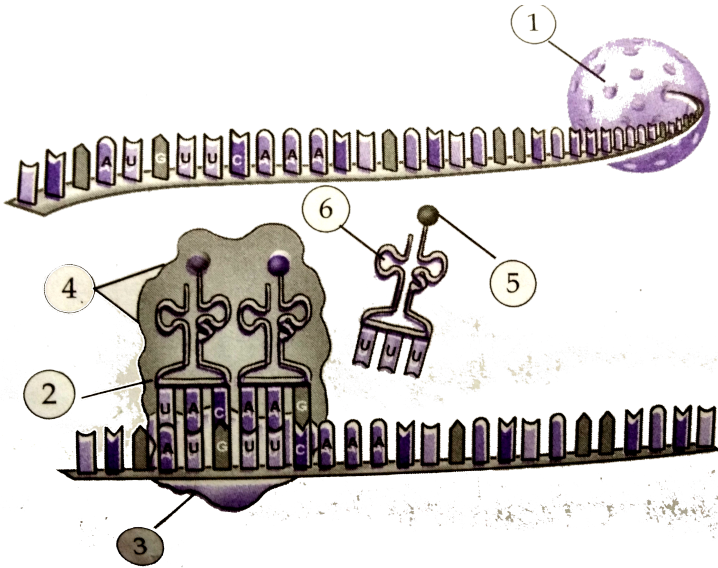


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10. Study of fossils is an important aspect of study of evolution.



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11.

(a) Identify 6 state its function. Label parts 1,2,3,4 & 5.

(b) Which two processes are shown in this diagram? Define them.

(c) Observe the diagram carefully and explain in brief.

12. Explain three evidences of evolution giving examples.



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