



BIOLOGY

BOOKS - TARGET BIOLOGY (HINGLISH)

HEREDITY AND EVOLUTION

Choose The Correct Alternative

1. Which of the following nitrogenous base is NOT present in DNA?

A. Thymine

B. Uracil

C. Adenine

D. Guanine

Answer: B



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2. Adenine can pair with which of the following nitrogenous base?

A. Cytosine

B. Uracil

C. Thymine

D. Both B and C

Answer: D



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3. RNA does not contain

A. deoxyribose

B. phosphate

C. Adenine

D. uracil

Answer: A



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4. Transfer of information from DNA to mRNA

is called as _____ process.

A. translocation

B. mutation

C. transcription

D. translation

Answer: C



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5. Which of the following types of RNA carries information from genes to the ribosome?

A. mRNA

B. tRNA

C. rRNA

D. All of the above

Answer: A



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6. The origin of the universe is explained by

A. Drawin's theory

B. Big-bang theory

C. Speciation

D. Lamarckism

Answer: B



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7. Which of the following is/are unicellular organism(s)?

A. Amoeba

B. Chlorella

C. Paramoecium

D. All of the above

Answer: D



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

A. intestine

B. appendix

C. liver

D. eye lens

Answer: B



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9. The appendix is useful in ruminants for digestion of which of the following compounds?

A. Fats

B. Cellulose

C. Proteins

D. Glycogen

Answer: B



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10. _____ is a connecting link between Annelida and Arthropoda.

A. Duck billed platypus

B. Peripatus

C. Lungfish

D. Whale

Answer: B



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11. Connecting links suggest that amphibians have evolved from

A. mammals

B. reptiles

C. fishes

D. aves

Answer: C



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12. Theory of inheritance of acquired characters is also known as

A. Lamarckism

B. Natural selection

C. Speciation

D. translation

Answer: A



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13. Modern man differ from Australipithecus in which of the following aspects?

A. Presence of tail

B. Use of hands for eating food

C. Increased brain size

D. All of the above

Answer: C



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Name The Following

1. Genetic disorder that is caused by mutation.



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2. First living material formed in ocean.



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3. Remnants and impressions of organisms that remain preserved underground.



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4. Method used in palaeontology and anthropology for determining the age fossils by measuring C-14 radioactivity.



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5. Plants and animals that show some morphological characters by which they are related to two different groups.



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6. Book published by Darwin explaining evolution through natural selection.



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True Or False

1. Francois Jascob and Jacques Monod proposed a model of the process of protein synthesis.



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



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



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4. Proteins are synthesised by DNA through RNA.



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5. During transcription, the sequence of nucleotides in mRNA is complementary to the DNA strand used for synthesis.



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6. tRNA has anticodon with complementary sequence to the codon on mRNA.



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7. mRNA is formed in the nucleus and transferred to the cytoplasm for translation.



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8. Gradual development of plants and animals from ancestors having different structural and functional organization is called evolution.



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9. Under changing environment sudden development of new tissues and organs occurs in living organisms.



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10. Fossils of invertebrates indicate they originated in the Cenozoic era.



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11. Appendix is a fully functional organ in ruminants.



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12. Reptiles and amphibians have evolved from mammals.



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13. Drawin's theory of natural selection explained evolution with respect to useful and useless modifications.



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14. Based on his observations of plants and animals, Darwin suggested that only the fittest organisms survive.



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15. According to Lamarck, the characters which are acquired by the organism during the life time are passed on to the next generation.



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16. Long neck of giraffe is an example of Lamarckism.



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17. Genetic variation is responsible for formation of new species from earlier ones.



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18. Geographical isolation leads to speciation.





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Odd One Out

1. Foreleg of ox, Ear pinnae of sheep,
Patagium of bat, Flipper of whale



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2. Coccyx, Intestine, Wisdom teeth, Appendix



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3. Cro-Magnon man, Aegytopithecus,
Australopithecus, Neanderthal man



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Complete The Analogy

1. DNA:Thymine:: RNA:_____



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2. RNA synthesis: _____ :: Protein synthesis: Translation



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3. _____: Sudden changes in genes :: Evolution : Gradual changes in specific characters.



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4. Morphological evidence: Similarity in position of eyes:: _____: Similarity in structure of bones.



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5. Peripatus: Connecting link:: Wisdom tooth:



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6. Survival of fittest: _____::Ancestry of
acquired characters: Lamarck



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7. First human like animal: _____::First wise
man: Neanderthal man



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Answer The Following

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

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2. How are the hereditary changes responsible for evolution?

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3. What is mutation?





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4. How are genes carried?



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5. Enlist the uses of the science of heredity.



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6. How do genes control the structure and functioning of the body?



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7. What do you mean by central dogma?



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8. What is transcription?



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9. Write a note an transcriptio.

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10. What is meant by triplet codon?

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11. What is translation?

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12. Explain the process of formation of complex proteins.



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13. What is translocation?



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14. Write a short note on evolution.



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15. Explain the process of formation of complex compounds from simple elements.



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



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17. What is morphological evidence of evolution?



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18. Define anatomical evidence.



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





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20. What are vestigial organs?



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21. 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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22. Define vestigial organs. Write any two names of vestigial organs in human body.



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23. What is paleontological evidence of evolution based on?



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



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25. What are connecting links?



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26. Write a short note on connecting link.



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27. Write a short note on embryology.



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28. Embryological evidences provide proof of evolution. Explain.



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29. How is embryological evidence of evolution studied?



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30. Write a short not on Darwin's theory of natural selection.



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31. Enlist the objections raised against Darwin's theory of natural selection?

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32. Write a short not on Kamarckism.

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33. Why was Lamarck's theory disproved?

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34. What is meant by ancestry of acquired characters?



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35. Define evolution.



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36. What is speciation?



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37. What is species?



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38. Write evolutionary history of modern man.



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Give Reasons

1. Morphological evidence suggest that dog, sheep and wold have a comon origin.



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2. Frelimb of bat and flipper of whale have different functions but indicate common ancestry.



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3. The vestigial organ appendix is still existent in human beings.



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4. Read the following statements and justify same in your own words with the help of suitable examples.

i. Human evolutions began approximatesly 7 crore years ago.



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5. ii. Geographical and reproductive isolation of organisms gradually leads to speciation.



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6. iii. Study of fossils is an important aspect of study of evolution.



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7. iv. There are evidences of fetal science among chordates.



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Distinguish Between

1. Transcription and Translation.



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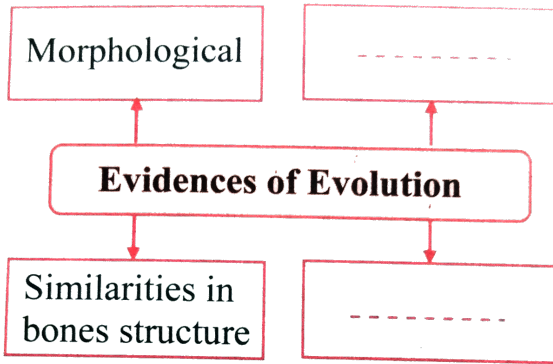
2. Lamarsckism and Natural selection



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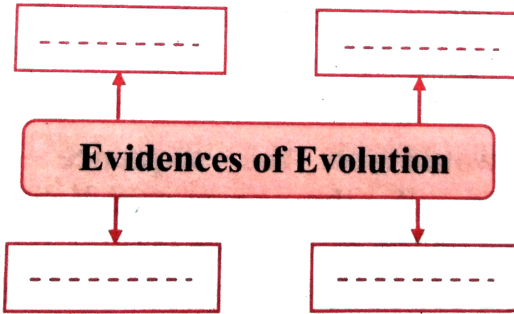
Complete The Given Chart Table

1. Complete the following diagram



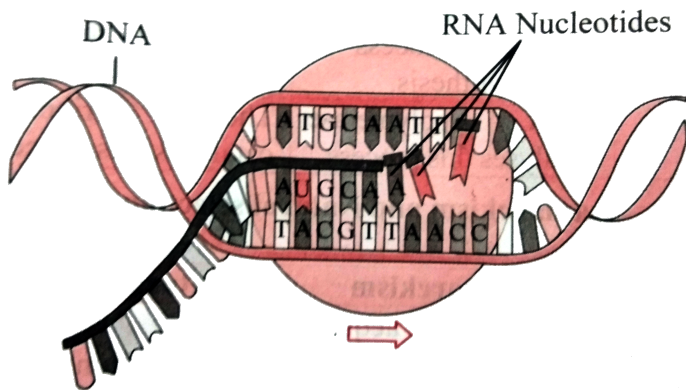
OR

Complete the following chart. [Mar 2019]



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

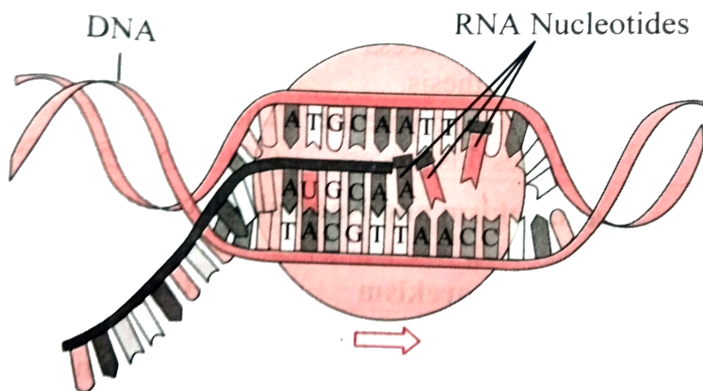


Identify the cellular process depicted in the diagram.



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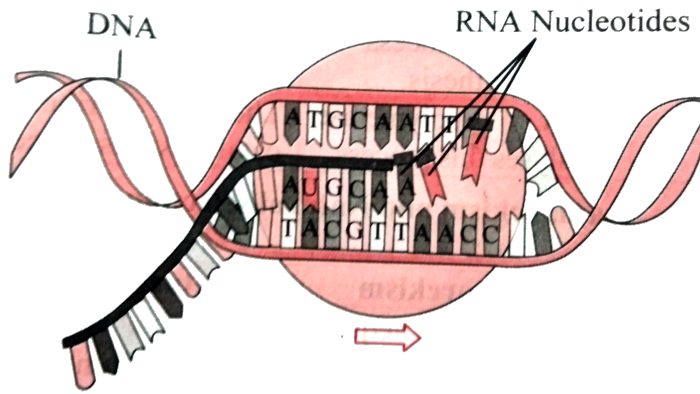
2. Observe the diagram and answer the questions given below it.



Which enzyme is required for this process?

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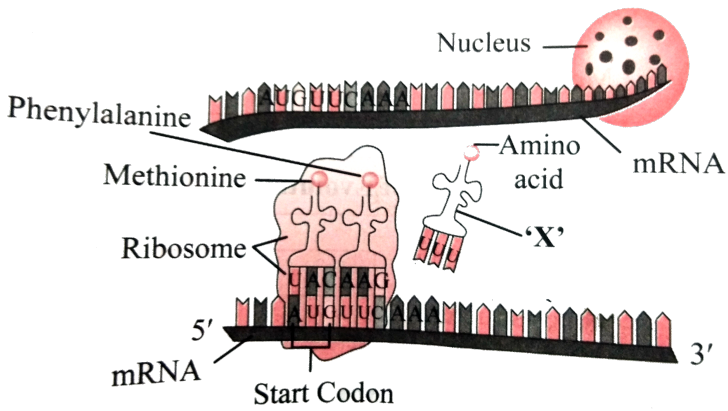
3. Observe the diagram and answer the questions given below it.



In which part of the cell does this process occur?

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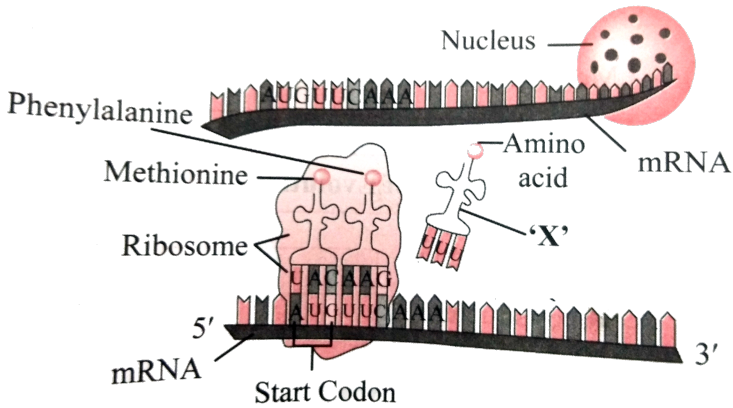
4. Observe the diagram and answer the questions given below it.



Identify the molecule labelled as X in the given diagram.

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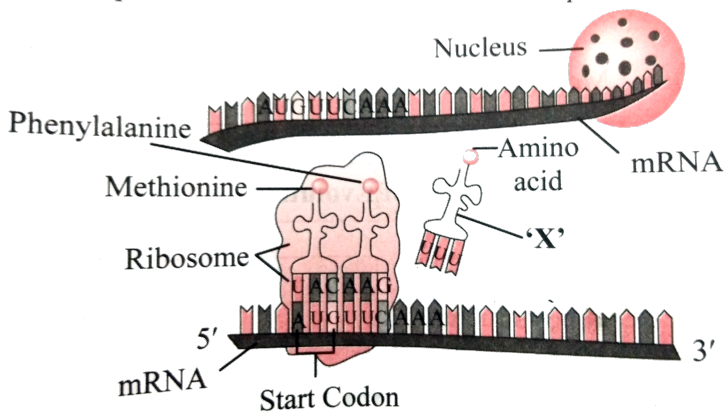
5. Observe the diagram and answer the questions given below it.



What would be the sequence on the anticodon, if the corresponding codon sequence on the mRNA is GAU?

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

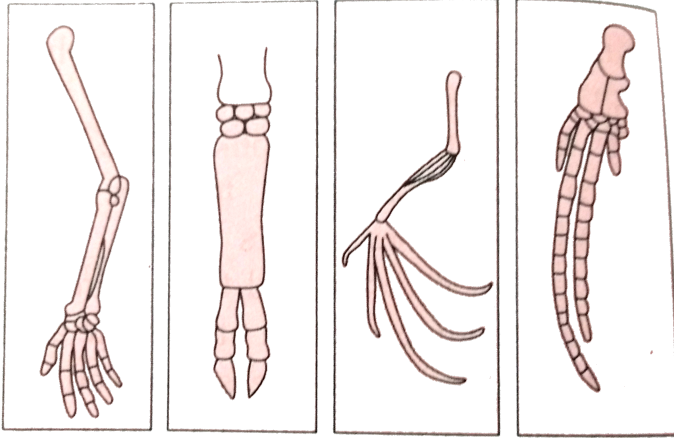


During the process of translation, the amino acids are bound by which bond?

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

given diagram.



**Human
hand**

**Foreleg
of Ox**

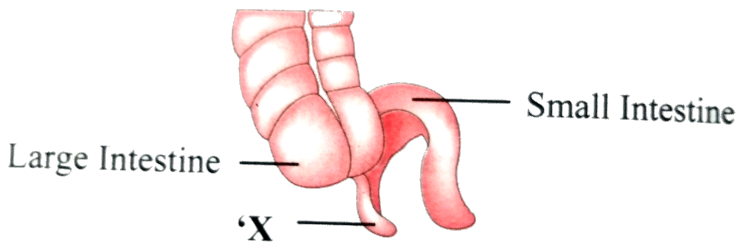
**Forelimb
of Bat**

**Flipper
of Whale**



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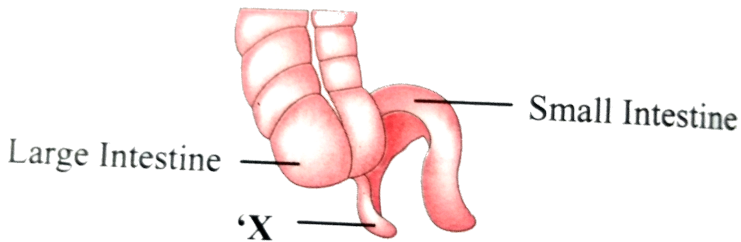
8. Carefully observe the given diagram and answer the following questions.



Identify the part labelled as X.

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9. Carefully observe the given diagram and answer the following questions.

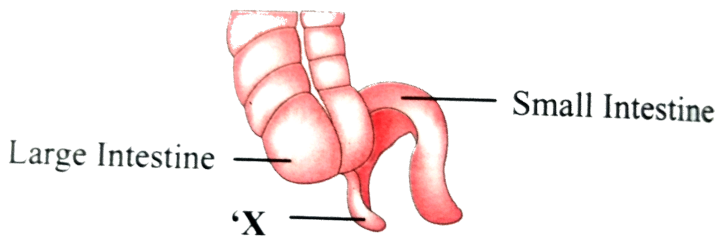


What type of organ is shown in the given diagram?



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10. Carefully observe the given diagram and answer the following questions.

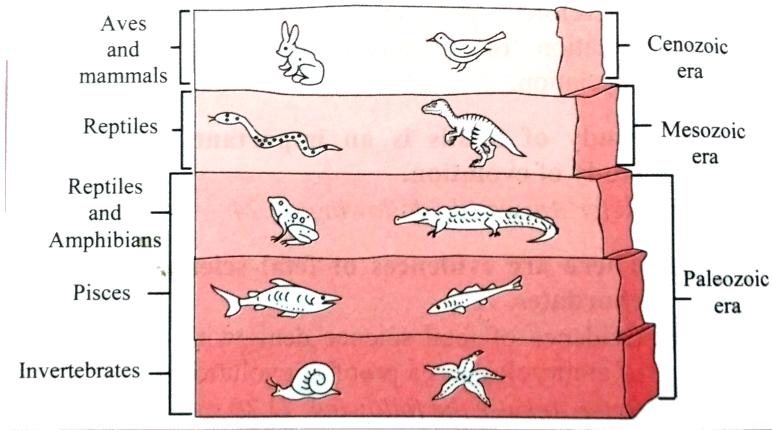


Mention any other two examples of such organs in humans.



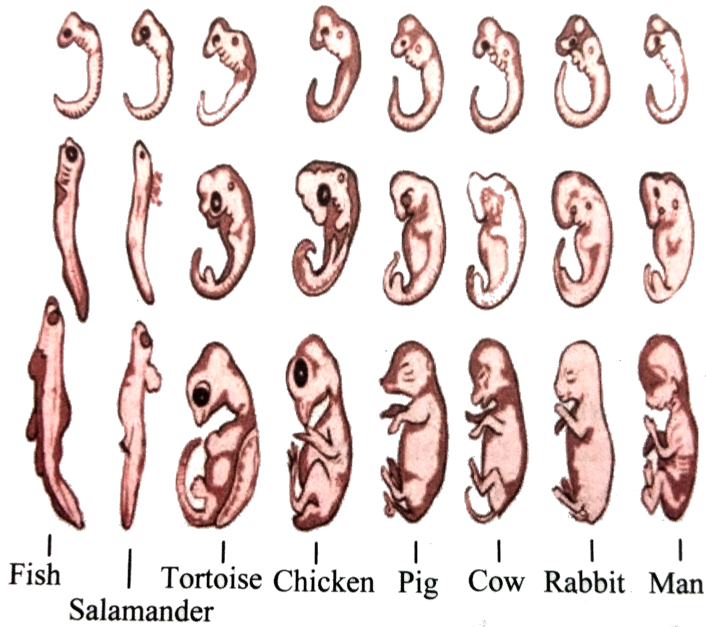
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11. Explain the given diagram.



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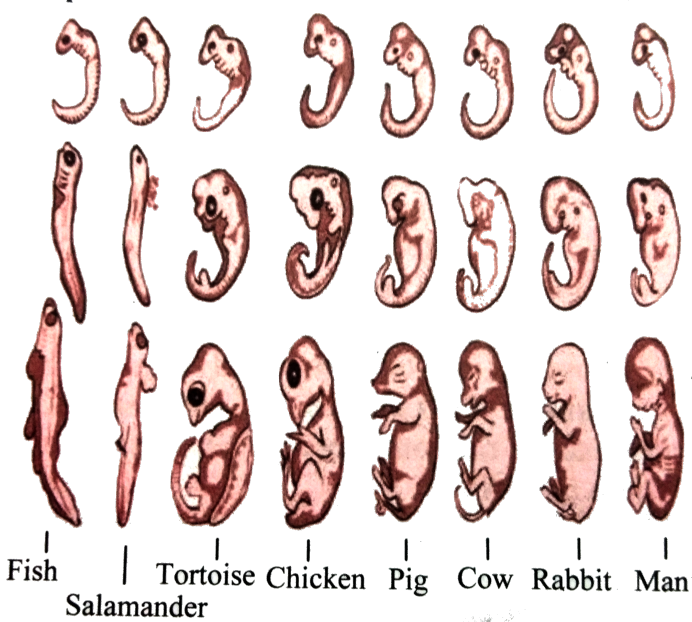
12. Observe the given figure and answer the questions.



Identify the evidence of evolution shown in the given diagram.

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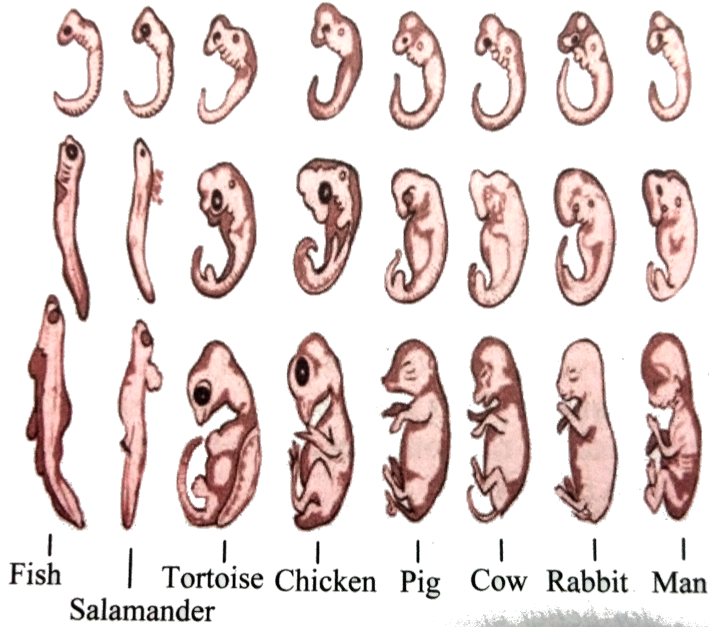
13. Observe the given figure and answer the questions.



How is this evidence used as a proof of evolution?

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14. Observe the given figure and answer the questions.



Mention any two other evidence of evolution.

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Questions Based On Paragraph

1. Information about protein synthesis is stored in the DNA. Proteins are synthesized by DNA through RNA. This is also known as the central dogma of life. The nucleotide sequences of the mRNA produced are complementary to the DNA strand that is used as the template for synthesis. This process of synthesis of RNA from DNA is known as transcription. The code for each amino acid consists of three nucleotides (triplet codon) that are present on the mRNA. The tRNA has an anticodon sequence

complementary to the codon on the mRNA. During translation, the code on mRNA is read and respective amino acids brought by tRNA are joined together by peptide bonds. Based on the given paragraph, answer the following question:

- i. If 3'-AACGT-5' is a sequence of the template DNA strand, what would be the nucleotide sequence of the corresponding mRNA synthesized from it?
- ii. What is the difference in nitrogenous bases of DNA and RNA?
- iii. Which enzyme would be required for the

synthesis of RNA from DNA during transcription?

iv. How many amino acids can the following mRNA sequence code for ?

5'-UUCAGCCGUGUCAUU-3'

v. What is the function of mRNA in translation?



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Apply Your Knowledge

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



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



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3. Which are the components of the DNA molecule?



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



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



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



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



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



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



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10. Internet is my friend.

Collect the information from internet about Big-bang theory related with formation of stars and planets and present it in your class.



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



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12. Is each of the organs useful to organism?



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13. USE of ICT.

Collect the information of geological dating

and present it in the classroom.



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14. Use of ICT.

Find how the vestigial organs in certain animals are functional in others. Present the information in your class and send it to others.



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Internet Is My Friend

1. Collect the pictures and information of various species of monkeys from internet



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Project

1. Make a presentation on human evolution using various computer softwares and arrange a group discussion over it in the classroom.



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2. Read the book- Pruthvivar Manus Uparach written by Late. Dr. Sureschandra Nadkarni and note your opinion on evolution.



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