



# BIOLOGY

## BOOKS - NAVNEET PUBLICATION

### HERIDITY AND EVOLUTION

#### Examples

1. Answer in short:

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. Answer in short:

Which are the components of DNA molecule?



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



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5. Answer in short:

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



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6. Disorders due to numerical changes in the chromosomes:



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7. Monogenic disorders caused due to mutations:



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8. Mention the polygenic disorders:



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**9. Answer in short:**

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



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**10. Answer in short:**

Are our wisdom teeth really useful for chewing the food?



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**11. Answer in short:**

Why did the huge animals like dinosaur become extinct?



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**12. Answer in short:**

Why are many species of animals and birds getting extinct?



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**13.** Which are the different organs in body of organisms?



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**14.** Answer in short:

Is each of the organs useful to organism?



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

Darwin has published a book titled.....

A. Natural selection

B. Mutation

C. Fall of a sparrow

D. Origin of species

**Answer: D**



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

A. genes

B. cells

C. tissues

D. amino acid

**Answer: A**



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3. Transfer of information from molecule of DNA to mRNA is called as \_\_\_\_\_ process.

A. translocation

B. translation

C. transcription

D. mutation

**Answer: C**



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

Evolution means.....

A. gradual development

B. exchanges

C. transcription

D. differentiation

**Answer: A**



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5. Vestigial organ \_\_\_\_\_ present in human body is the proof of evolution

A. alveoli

B. appendix

C. liver

D. heart

**Answer: B**



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

The age of material determined are published in the journal named.....

A. Evolution treatise

B. Origin of species

C. Radio carbon

D. Encyclopedia

**Answer: C**



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

A. transcription

B. translocation

C. translation

D. mutation

**Answer: D**





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

The....man evolved about 50 thousand years ago.

A. Cro Magnon

B. Neanderthal

C. Java man

D. Ramapithecus

**Answer: A**



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**9.** Choose the correct alternative and write its alphabet against the sub question number:

About 10 thousand years ago, .....started to practise agriculture.

A. Gorilla

B. Wise man

C. Ramapithecus



D. Australopithecus

**Answer: B**



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

.....can be considered as the first example of wise-man.

A. Australopithecus

B. Ramapithecus

C. Cro Magnon

D. Neanderthal man

**Answer: D**



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**11.** Choose the correct alternative and write its alphabet against the sub question number:  
  
.....is a connecting link between Annelida and Arthropoda.

A. Duck-billed platypus

B. Peripatus

C. Lung fish

D. Whale

**Answer: B**



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

Similarities in the initial stages indicate the ..... evidence.

A. Connecting links

B. anatomical

C. Embryological

D. Palaentological

**Answer: C**



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

The process by which the gene in the nucleotide suddenly changes its position is called .....

A. translation

B. translocation

C. mutation

D. transcription

**Answer: C**



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

.....is not the vestigial organ in the human body.

A. Appendix

B. Coccyx

C. canine

D. Wisdom teeth

**Answer: C**



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**15.** Write whether the following statements are true or false with proper justification for your answer:

It takes thousands of years for a useful structure to disappear.



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**16.** Write whether the following statements are true or false with proper justification for your answer:

Dr. Har Govind Khorana was awarded Nobel prize for his invention and publication in the journal Radio carbon.



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**17.** Write whether the following statements are true or false with proper justification for your



answer:

Mesozoic era was dominated by variety of mammals.



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**18.** Write whether the following statements are true or false with proper justification for your answer:

It seems that invertebrates have been slowly originated from vertebrates.



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**19.** Write whether the following statements are true or false with proper justification for your answer:

The decaying process of C-12 occurs continuously from the dead remains of living organisms.



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**20.** Write whether the following statements are true or false with proper justification for

your answer:

The theory of natural selection which mention 'Survival of fittest' is given by Lamarck.



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**21.** Write whether the following statements are true or false with proper justification for your answer:

Changes acquired during life time are transferred to next generation.



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**22.** Write whether the following statements are true or false with proper justification for your answer:

Each species grows in specific geographical conditions and has specific food, habitat, reproductive ability and period.



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**23.** Write whether the following statements are true or false with proper justification for

your answer:

Humans walking with upright posture were confined to Africa only during prehistoric period.



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**24.** Write whether the following statements are true or false with proper justification for your answer:

Industrial socety was established about 200 years ago.



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25. Match the columns:

(1) Scientist	Discovery
(1) Johann Gregor Mendel	(a) Chromosomes of grasshopper
(2) Hugo de Vries	(b) DNA is genetic material
	(c) Pioneer of the modern genetics
	(d) Mutational theory



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## 26. Match the columns:

(2) Scientist	Discovery
(1) Walter, Sutton	(a) Mutational theory
(2) Mclyn McCarthy	(b) DNA is genetic material
	(c) Pioneer of the modern genetics
	(d) Chromosomes of grasshopper



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## 27. Match the columns:

(3) Evidences of evolution	Examples
(1) Morphological evidences	(a) Duck billed Platypus and Peripatus
(2) Anatomical evidences	(b) Remnants and impressions
	(c) Human hand and fore limb of bull
	(d) Shape and venation of leaf



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**28.** Match the columns:

(4) Evidences of evolution	Examples
(1) Palaeontological evidences	(a) Duck billed Platypus and Peripatus
(2) Connecting links	(b) Remnants and impressions
	(c) Coccyx and wisdom tooth
	(d) Human hand and fore limb of cat



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**29.** Find the odd one out:

Transcription, translation, translocation,  
transpiration.



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**30.** Find the odd one out:

Bones of the hands, structure of nostrils,  
position of eyes, structure of ear pinnae



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**31.** Find the odd one out:

Venation, shape of seeds, Leaf petiole, Leaf  
shape



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**32.** Find the odd one out:

Human hand, wing of cockroach, forelimb of  
bull, flipper of whale



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**33.** Identify the correlation between the first  
two words and suggest the suitable words in  
the fourth place:

mRNA: Transcription::tRNA:.....



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**34.** Identify the correlation between the first two words and suggest the suitable words in the fourth place:

Peripatus: Connecting link::Appendix:.....



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**35.** Identify the correlation between the first two words and suggest the suitable words in

the fourth place:

Open circulatory system: Arthropods::Thin  
cuticle and parapodia:.....



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**36.** Identify the correlation between the first  
two words and suggest the suitable words in  
the fourth place:

Between Annelida and Arthropda:

Peripatus:.....:Lung fish



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**37.** Identify the correlation between the first two words and suggest the suitable words in the fourth place:

Theory of natural selection: Charles Robert Darwin::Theory of inheritance of acquired characters:.....



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**38.** Identify the correlation between the first two words and suggest the suitable words in

the fourth place:

Survival of the fittest: Darwin::Acquired  
characters:.....



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**39.** Identify the correlation between the first  
two words and suggest the suitable words in  
the fourth place:

Wisdom teeth: Vestigial organs:: Lungs  
fish:.....



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**40.** Define the following :

Heredity



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**41.** Define the following :

Transcription



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**42.** Define the following :

Translation



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**43.** Define the following :

Translocation



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**44.** Define the following :

Mutation



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**45.** Define the following :

Species



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**46.** Name the following :

Three scientists who proved that except viruses, all living organisms have DNA as genetic material.



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**47.** Genetic disorder that is caused by mutation.



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**48.** Name the following :

Fish that can breathe with help lungs:



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**49.** Name the following :

Vestigial organs in human beings:



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**50. Name the following :**

Father of modern genetics:



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**51. Name the following :**

I am a connecting link between reptiles and mammals. Who am I?



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**52.** Distinguish between Transcription and Translation:



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**53.** Distinguish between Ape and Human:



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**54.** Give scientific reason:

Some of the characters of parents are seen in

their offspring.



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**55.** Give scientific reason:

Darwin's work on evolution has been a milestone.



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**56.** Give reasons why Peripatus is considered the connecting link between anelids and

arthropods.



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**57.** Give scientific reason:

Vertebrates have been slowly originated from invertebrates.



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**58.** Give scientific reason:

During human evolution the hands became



available for use.



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

Geographical and reproductive isolation of organisms gradually leads to speciation.



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**60.** Study of fossils is an important aspect of study of evolution.



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**61.** There is evidence of fatal science among chordates.



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

i. Human evolutions began approximately 7 crore years ago.



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**63.** Answer the following question:

Define heredity. Explain the mechanism of hereditary changes.





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**64.** Explain the process of formation of complex proteins.



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**65.** What do you mean by central dogma?



[Watch Video Solution](#)

**66.** Answer the following question:

What is transcription?



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**67.** What is meant by triplet codon?



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**68.** How are the hereditary changes responsible for evolution?



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**69.** Explain the theory of evolution and mention the proof supporting it.



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**70.** Answer the following question:

Explain with suitable examples importance of anatomical evidences in evolution.



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**71.** 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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**72.** Define vestigial organs. Write any two names of vestigial organs in human body.



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**73.** Answer the following question:

What do we call the degenerated or partially developed useless organs in living organisms?



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**74.** Answer the following question:

Define vestigial organs. Enlist such organs in human body. How the same organs are useful in other animals?



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**75.** Answer the following question:

Define vestigial organs. Enlist such organs in human body. How the same organs are useful in other animals?



**Watch Video Solution**

**76.** Answer the following question:

Define vestigial organs. Enlist such organs in human body. How the same organs are useful in other animals?



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**77.** Answer the following question:

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



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**78.** Answer the following question:

In which way is science of heredity useful these days?



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**79.** Answer the following question:

What is meant by carbon dating method?



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**80.** Write evolutionary history of modern man.



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**81.** Answer the following question:

Describe briefly the Darwin's theory of natural selection.



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**82.** Answer the following question:

What were the objections raised against Darwinism?



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**83.** Answer the following question:

Which book was published by Darwin to explain his theory?



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**84.** Answer the following question:

What were the objections raised against Darwinism?



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**85.** Answer the following question:

Explain in brief-Lamarck's principle of use or disuse or organs'.



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**86.** Answer the following question :

Give two examples of each of the following :

Homogeneous matter



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**87.** Answer the following question:

What are acquired characters?



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**88.** Write short notes:

Evolution



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**89.** Write short notes based upon the information known to you:

Theory of evolution.



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**90.** Write short notes:

Connecting link



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**91. Write short notes:**

Embryology



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**92. Write short notes:**

Darwin's theory of natural selection



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**93.** Write short notes:

Lamarckism



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**94.** By choosing appropriate words given in the bracket, complete the paragraph:

(translation, anticodon ,tRNA , mRNA, amino acids, triplet codon, transcription, DNA)

The '.....' formed in nucleus comes in cytoplasm.

It brings in the coded message from DNA. The

message contains the codes for amino acids. The code for each amino acid consists of three nucleotides. It is called as '....' each mRNA is made up of thousands of triplet codons. As per the message on mRNA '.....' are supplied by the '.....' For the purpose, tRNA has '.....' having complementary sequence to the codon on mRNA. This is called '.....'.



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**95.** By choosing appropriate words given in the bracket, complete the paragraph:

(cultural, agriculture, fire, brain, cro-magnon, homo sapiens, neanderthal)

Evolution of upright man continued in the direction of developing its..... For the period of about 1 lakh years and meanwhile discovered the .....Brain of man, 50 thousand years ago had been sufficiently evolved to the extent that it could be considered as member of the species .....Neanderthal man can be considered as the first example of wise-man.

The .....man evolved about 50 thousand years ago afterwards, this evolution had been faster than the earlier. About 10 thousand years ago, wise man started to practice the .....It started to rear the cattle-herds and established the cities.....development took place later.



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**96.** Read the paragraph and answer the questions given below:

With the help of RNA, the genes present in the form of DNA participate in the functioning of cell and thereby control the structure and functioning of the body. Information about protein synthesis is stored in the DNA and synthesis of appropriate proteins as per synthesized by DNA through the RNA. This is called 'Central Dogma'. mRNA is produced as per the sequence of nucleotides on DNA. Only one of the two strands of DNA is used in this process. The sequence of nucleotides in mRNA being produced is always complementary to the DNA strand used for synthesis. Besides,

there is uracil in RNA instead of thymine of DNA. This process of RNA synthesis is called 'transcription'.

Which part of the cell controls the structure and functioning of the body?



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**97.** Read the paragraph and answer the questions given below:

With the help of RNA, the genes present in the form of DNA participate in the functioning of

cell and thereby control the structure and functioning of the body. Information about protein synthesis is stored in the DNA and synthesis of appropriate proteins as per synthesized by DNA through the RNA. This is called 'Central Dogma'. mRNA is produced as per the sequence of nucleotides on DNA. Only one of the two strands of DNA is used in this process. The sequence of nucleotides in mRNA being produced is always complementary to the DNA strand used for synthesis. Besides, there is uracil in RNA instead of thymine of DNA. This process of RNA synthesis is called



'transcription'.

How is a specific protein synthesised in the cell?



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**98.** Read the paragraph and answer the questions given below:

With the help of RNA, the genes present in the form of DNA participate in the functioning of cell and thereby control the structure and functioning of the body. Information about

protein synthesis is stored in the DNA and synthesis of appropriate proteins as per synthesized by DNA through the RNA. This is called 'Central Dogma'. mRNA is produced as per the sequence of nucleotides on DNA. Only one of the two strands of DNA is used in this process. The sequence of nucleotides in mRNA being produced is always complementary to the DNA strand used for synthesis. Besides, there is uracil in RNA instead of thymine of DNA. This process of RNA synthesis is called 'transcription'.

What is the similarity between mRNA and DNA?



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**99.** Read the paragraph and answer the questions given below:

With the help of RNA, the genes present in the form of DNA participate in the functioning of cell and thereby control the structure and functioning of the body. Information about protein synthesis is stored in the DNA and

synthesis of appropriate proteins as per synthesized by DNA through the RNA. This is called 'Central Dogma'. mRNA is produced as per the sequence of nucleotides on DNA. Only one of the two strands of DNA is used in this process. The sequence of nucleotides in mRNA being produced is always complementary to the DNA strand used for synthesis. Besides, there is uracil in RNA instead of thymine of DNA. This process of RNA synthesis is called 'transcription'.

Give one difference between RNA and DNA.



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**100.** Read the paragraph and answer the questions given below:

With the help of RNA, the genes present in the form of DNA participate in the functioning of cell and thereby control the structure and functioning of the body. Information about protein synthesis is stored in the DNA and synthesis of appropriate proteins as per synthesized by DNA through the RNA. This is called 'Central Dogma'. mRNA is produced as per the sequence of nucleotides on DNA. Only

one of the two strands of DNA is used in this process. The sequence of nucleotides in mRNA being produced is always complementary to the DNA strand used for synthesis. Besides, there is uracil in RNA instead of thymine of DNA. This process of RNA synthesis is called 'transcription'.

Define central dogma.



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**101.** Diagram based question:

What is the sequence of nucleotides present on the strand of the DNA?



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**102.** Diagram based question:

which enzyme is taking part in the above process of transcription?



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**103.** Diagram based question:

Which is the initiation codon? Where is it present?



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**104.** Diagram based question:

What are the types of RNA present inside the ribosome? Which triplet codon is present on it?



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**105. Diagram based question:**



Observe the picture and answer the following questions:

Which evidence of evolution is shown in the picture?



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**106.** Diagram based question:



Observe the picture and answer the following questions:

what can be proven with this proof?



107. Diagram based question:



Observe the picture and answer the following questions:

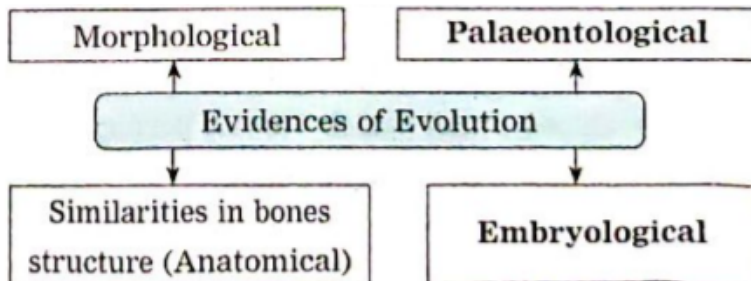
Give one more example of evidence of evolution.



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**108.** Diagram based question:

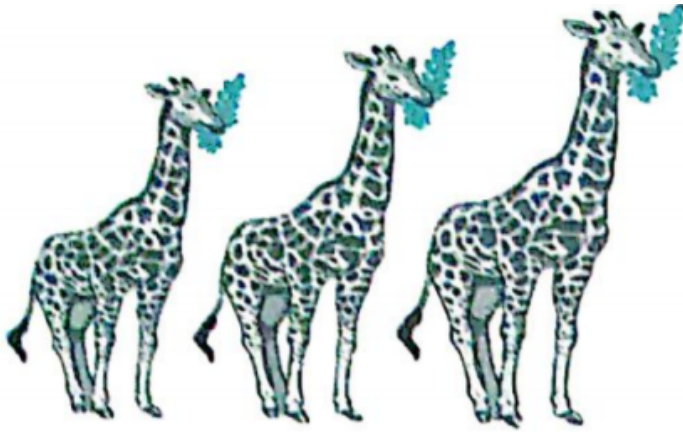
Complete the following diagrams:



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**109.** Diagram based question:

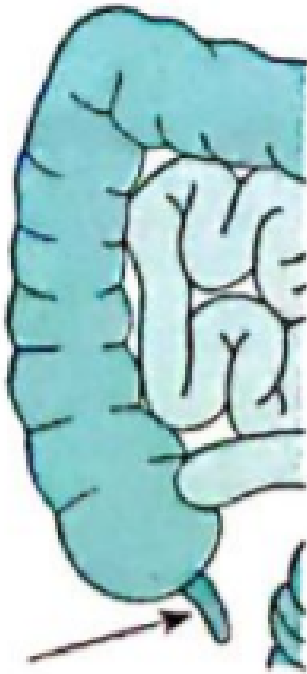
Which concept/theory do you remember after seeing this picture of Giraffes? Describe it is brief.



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**110.** Diagram based question:

Define the evidence of evolution shown in the figure.



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