

# Success Key Worksheet

Std: Class 10 (Eng. Medium)

Ch.1. Heredity and Evolution  
(Worksheet 1)

Time: 1 Hr.

Date:

Science and Technology -2

Marks: 20

**Q.1) Answer the following:**

**1) Find odd one out :**

Venation, Shape of seeds, Leaf petiole, Leaf shape.

1

**2) Write the correct co-relation :**

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

1

**3) State whether True or False.**

Industrial society was established about 200 years ago.

1

**4) Name the following :**

First living material formed in ocean.

1

**5) Answer the following in one sentence.**

What does the code for each amino acid consists of ?

1

**Q.2) Give Scientific reasons. (Any 2)**

4

1. Vertebrates have slowly originated from invertebrates.
2. Duckbill platypus shows relationship with mammals.
3. The vestigial organ appendix is still existent in human beings.

**Q.3) Attempt the Following:**

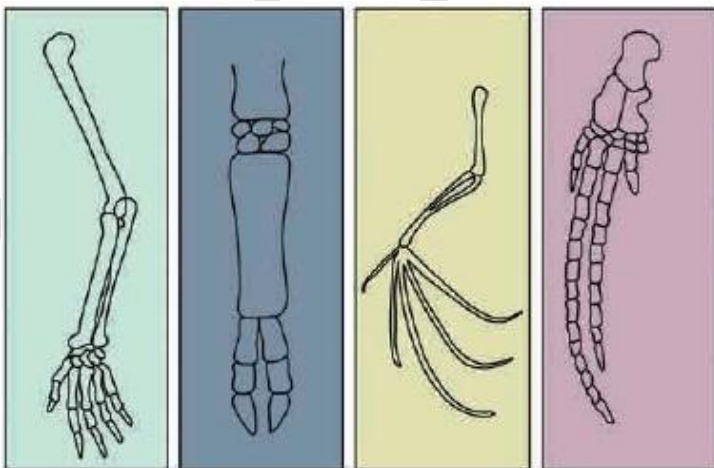
**1) Distinguish between :**

Ape and human.

2

**2) Observe the diagram and answer the following questions.**

2



Explain the anatomical evidences with the help of the given diagram.

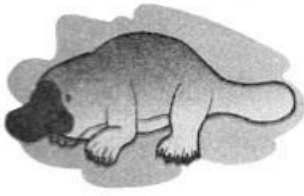
**3) Answer the following questions.**

2

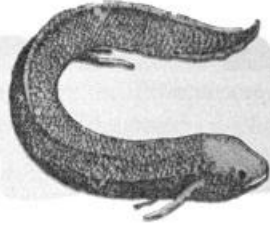
Explain Darwin theory of natural selection.

**Q.4) Observe the diagram and answer the following questions.**

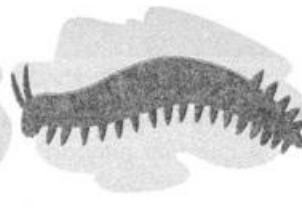
Write the answer to the questions by observing the figure below.



Duckbill Platypus



Lungfish



Peripatus

- Write the name of the animal 'A' in the figure.
- Write the name of the animal 'B' in the figure.
- Write the name of the animal 'C' in the figure.
- Which evolutionary evidence is illustrated by this figure.
- Write the definition of that evidence for evolution.

SUCCESS KEY

# Success Key Worksheet

Std: Class 10 (Eng. Medium)

Ch.1. Heredity and Evolution

Time: 1 Hr.

(Worksheet 1) Answer Key

Date:

Science and Technology -2

Max Marks: 20

**Q.1) Answer the following:**

**1) Find odd one out :**

Ans. Shape of seeds. (All others are morphological evidence in plants)

1

**2) Write the correct co-relation :**

Ans. Annelida

1

**3) State whether True or False.**

Ans. True

1

**4) Name the following :**

Ans. Protoplasm

1

**5) Answer the following in one sentence.**

Ans. The code for each amino acid consists of three nucleotides of 'triplet codon'.

1

**Q.2) Give Scientific reasons. (Any 2)**

4

**1) Ans. i)** The carbon dating technique used to assess the age of fossils which is indicated that invertebrates were present on the earth much before the vertebrates.

ii) Fossils of invertebrates are found in lower layers of earth's strata. Which are very old and belong to the Palaeozoic era.

iii) The Cenozoic era showed the presence of mammals and birds. Their fossils were seen in upper strata of the earth's crust.

iv) It was also observed that vertebrates are more complex than invertebrates.

Therefore, it can be said that vertebrates have slowly originated from invertebrates.

**2) Ans. i)** The duck-billed platypus is a connecting link between mammals and reptiles.

ii) It shows similarity with mammals due to the presence of mammary glands and hairs.

Therefore, Duck-billed platypus shows relationship with mammals.

**3) Ans. i)** The organs which appear to have no function but are present in an organism's body are said to be vestigial.

ii) Such structures begin to degenerate, as per the principle of natural selection.

iii) These organs take thousands of years to disappear. Hence they may appear in different forms of disappearance in different animals.

Therefore, even though appendix is a vestigial organ, it is still existent in human being.

**Q.3) Attempt the following:**

**1) Distinguish between :**

2

Ans.

Ape	Human
i) Brain size of ape is similar	i) Brain size of human is larger
ii) Ape cannot walk upright	ii) Human can walk upright
iii) Ape is less intelligent compared in human	iii) Human is most intelligent than Ape.
iv) The forelimbs of the ape are longer than the hind limbs	iv) The forelimbs of humans are shorter than the hind limbs

**2) Observe the diagram and answer the following questions.**

2

- Ans.** 1. There is no superficial similarity between the given diagrams of human hand, cat's foreleg, patagium of bat and flipper of whale.
2. Similarly, use of each of these structures is different in respective animals.
  2. However, there is similarity in structure of bones and bony joints in organs of each of these animals.
  3. This similarity indicates that these animals may have common ancestor.

**3) Answer the following questions.**

2

**Ans.** Darwin theory of natural selection :

- i) Darwin published the theory of natural selection which preaches "The survival of the fittest".
- ii) "The survival of the fittest" means the organisms, which are fit for survival they evolves while the organisms which are not fit for survival they perish.
- iii) Darwin's theory of natural selection was widely accepted for long duration.
- iv) However, some objections were raised against the theory, such as
  - 1) Natural selection is not the only factor responsible for evolution.
  - 2) Darwin did not mention any explanation about useful and useless modifications.

**Q.4) Observe the diagram and answer the following questions.**

5

**Ans.** a) Duck-billed Platypus.

b) Lungfrsh

c) Peripatus

d) The evolutionary evidence illustrated in the given figure is connecting links.

e) Connecting links are some plants or animals that show morphological characters by which they can be related to two difference groups of organisms.

# Success Key Worksheet

Std: Class 10 (Eng. Medium)

Ch.1 Heredity and Evolution  
(Worksheet 2)

Time: 1 Hr.

Date:

Subject: Science and Technology -2

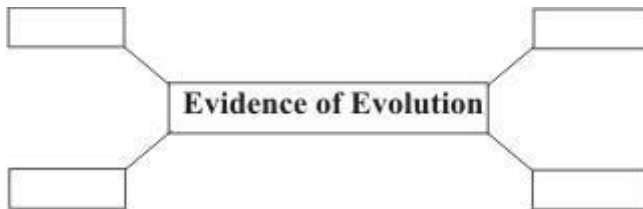
Max Marks: 20

**Q.1) Answer the following:**

- 1) Find odd one out : 1  
Transcription, Translation, Translocation, Mutation.
- 2) Write the correct co-relation : 1  
mRNA : Transcription : : t - RNA : \_\_\_\_\_.
- 3) State whether True or False. 1  
Mesozoic era was dominated by variety of mammals.
- 4) Name the following : 1  
Genetic disorder that is caused by mutation.
- 5) Answer the following in one sentence. 1  
Which is the famous book written by Charles Darwin?

**Q.2) Answer the following: (Any 3)**

- 1) Give Scientific reasons. 2  
Peripatus is said to be the connecting link between annelida and arthropoda.
- 2) Complete the following activity / chart. 2



- 3) Observe the diagram and answer the following questions. 2

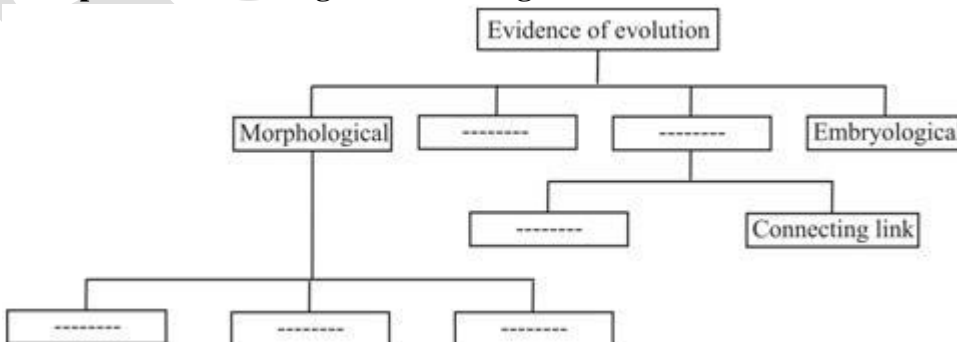


Write the similarities given in the images of animals.

- 4) Explain Darwin theory of natural selection 2

**Q.3) Answer the following:**

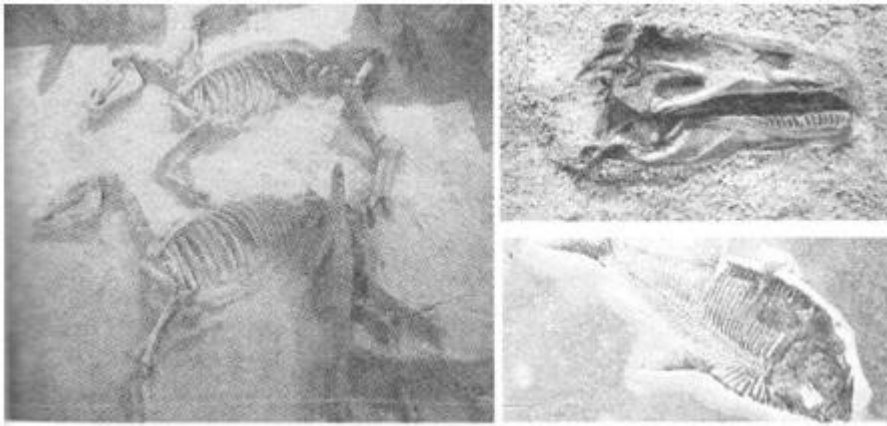
- 1) Complete the following chart/table/figure. 3



**2) Observe the diagram and answer the following questions.**

**3**

Observe the following images and answer the questions:



- a) Which evolutionary evidence are indicated in the given pictures?
- b) How are they formed?
- c) Which method is used to measure their age or their time?

**Q.12) Answer the following questions. (Any 1)**

**3**

- 1) Explain the importance of Anatomical evidence with examples.
- 2) Answer the following questions:
  - a) What do you mean by central dogma?
  - b) What is transcription?
  - c) What is meant by triplet codon?

# Success Key Worksheet

Std: Class 10 (Eng.& Semi)

Time: 1 Hr.

## Ch.1 Heredity and Evolution (Worksheet 2) Answer Key

Date:

Subject: Science and Technology -2

Max Marks: 25

### Q.1) Answer the following:

1) Find odd one out :

Ans. Mutation (All others are stages of protein synthesis)

1

2) Write the correct co-relation :

Ans. Translation

1

3) State whether True or False.

Ans. False. (Mesozoic era was dominated by variety of reptiles)

1

4) Name the following :

Ans. Sickle cell anaemia etc.

1

5) Answer the following in one sentence.

Ans. Charles Darwin wrote the book 'Origin of Species'.

1

### Q.2) Answer the following:

1) Give Scientific reasons.

2

Ans. i) Peripatus is the connecting links between two different groups - Annelida and Arthropoda.

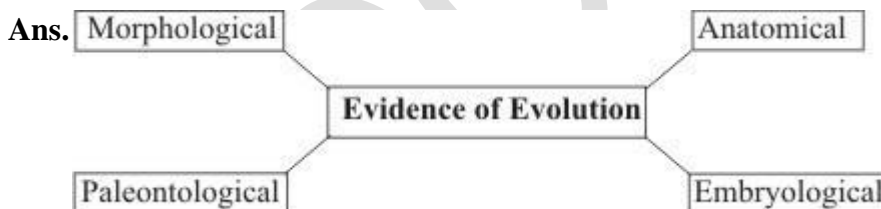
ii) It shows segmented body, thin cuticle, and parapodia - like organs. These characters are typical of Annelids.

iii) It also shows tracheal respiration and open circulatory system. These characteristic features of Arthropods.

Therefore, Peripatus is said to be the connecting link between Annelida and Arthropoda.

2) Complete the following activity / chart.

2



3) Observe the diagram and answer the following questions.

2

Ans. Various similarities like structure of mouth, position of eyes, structure of nostrils and ear pinnae and thickly distributed hairs on body are seen in the given images of animals.

4) Answer the following questions.

2

Ans. Darwin theory of natural selection:

i) Darwin published the theory of natural selection which preaches "The survival of the fittest".

ii) "The survival of the fittest" means the organisms, which are fit for survival they evolve while the organisms which are not fit for survival they perish.

iii) Darwin's theory of natural selection was widely accepted for long duration.

iv) However, some objections were raised against the theory, such as

1) Natural selection is not the only factor responsible for evolution.

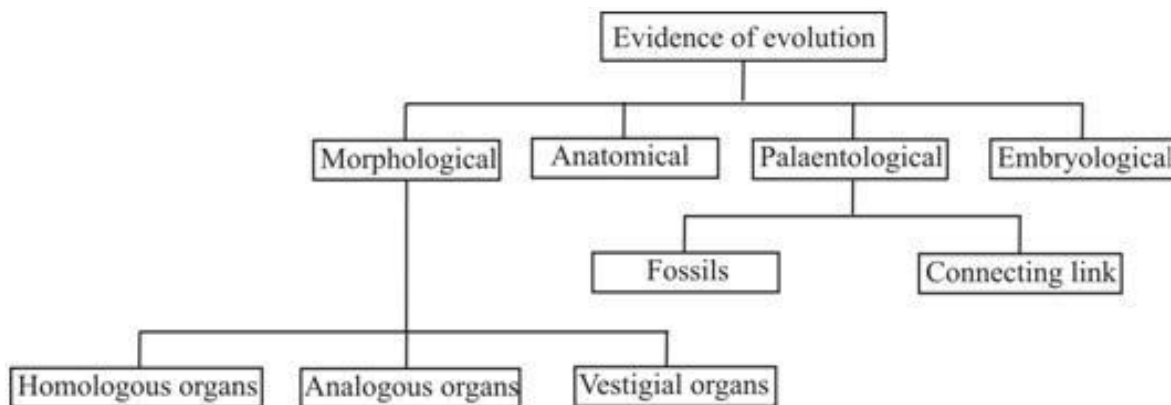
2) Darwin did not mention any explanation about useful and useless modifications.

**Q.3) Answer the following:**

**3**

**1) Complete the following chart/table/figure.**

**Ans.**



**2) Observe the diagram and answer the following questions.**

**3**

**Ans.** a) The picture indicates paleontological evidence of evolution.

b) Many organisms get buried due to disasters like earthquake, flood, and volcano so remnants and impressions of such organisms remain preserved underground and form fossils.

c) The carbon dating method is used to measure the age of fossils.

**Q.4) Answer the following questions. (Any 1)**

**3**

**1)Ans.** i) There are similarities in the structure and anatomy of different animal groups.

ii) eg. Human hands, forelimb of bull, potagium of bat flipper of whale are all similar in their internal anatomy.

iii) There is similarity in the bones and joints of all these specimens.

iv) External morphology does not show any similarity. Use of each of the organ is also different in different animals; structurally they may not be related.

v) However, the similarities in the anatomy are evidence that they may have a common ancestor.

vi) In this way, the anatomical evidence throws light on the process of evolution.

**2)Ans.** a) Synthesis of proteins by DNA through the RNA is called central dogma.

b) The process of mRNA synthesis as per sequence of nucleotides on DNA is called as transcription.

c) The code for each amino acid, consisting of three nucleotides, is called 'triplet codon'.