

#### **BIOLOGY**

#### **BOOKS - ARIHANT NEET BIOLOGY (HINGLISH)**

#### **EVIDENCES OF EVOLUTION**

#### **Check Point 11 1**

- 1. Homologous organs are
  - A. wings of insects and bat
  - B. gills of fish and lungs of rabbit
  - C. wings of bat and forelimbs of horse
  - D. wings of grasshopper and crow

#### Answer: C



was all wilders of least and

- 2. Which of the following represent phylogenetic homology
  - A. Penis of man and clitoris of woman
  - B. Pentadactyl limbs of air breathing vertebrates
  - C. Arm and leg of man
  - D. All of the above

#### **Answer: B**



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- 3. An example of divergent evolution is
  - A. placental mammal and marsupials
  - B. leaf of a plant and cladode of Ruscus
  - C. insect and bird wings

D.
Answer: B
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4. Analogous structure are
A. structurally
B. functionally
C. normally non-functional
D. Both (a) and (b)
Answer: B
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5. In adaptive convergence

A. separate lineages show similar morphology B. separate morphology have similar lineges C. enviroment factors do not play any role D. Both (a) and (c) Answer: A **Watch Video Solution** 6. Vestigial organs are those which are A. well-developed B. functionless C. reduced D. Both (b) and (c) Answer: D **Watch Video Solution** 

7. Which of the following is a vestigial organ
A. Wisdom tooth
B. claws
C. Scalp hair
D. All of these
Answer: A
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8. Which of the following is not a vestigial organ in humans
A. Ear pinna muscle
B. Nictitating membrane
C. Mammary glands in males

D. Knee bone
Answer: D
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9. Sudden appearance of an ancestral character is called
A. evolution
B. mutation
C. atavism
D. heredity
Answer: C
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10. An example, which best explains the atavism , is

A. leaves and stem of plants B. wisdom tooth C. vermiform appendix D. long, thick and dence hair Answer: D **Watch Video Solution** Check Point 11 2 1. In which of the following retrogressive metamorphosis played an important role for establishid phylogeny A. Lizard B. Mammals C. Both (a) and (b) D. Herdmania

#### **Answer: D**



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2. Which of the following is the correct sequnce during character development of animal according to von Baer's law

A. More general  $\,\,
ightarrow\,$  less general  $\,\,
ightarrow\,$  specialised

B. More general  $\,\,
ightarrow\,\,$  specialised  $\,\,
ightarrow\,\,$  less general

C. specialised  $\,\,
ightarrow\,$  less general  $\,\,
ightarrow\,$  more general

D. less general ightarrow specialised ightarrow more general

#### Answer: A



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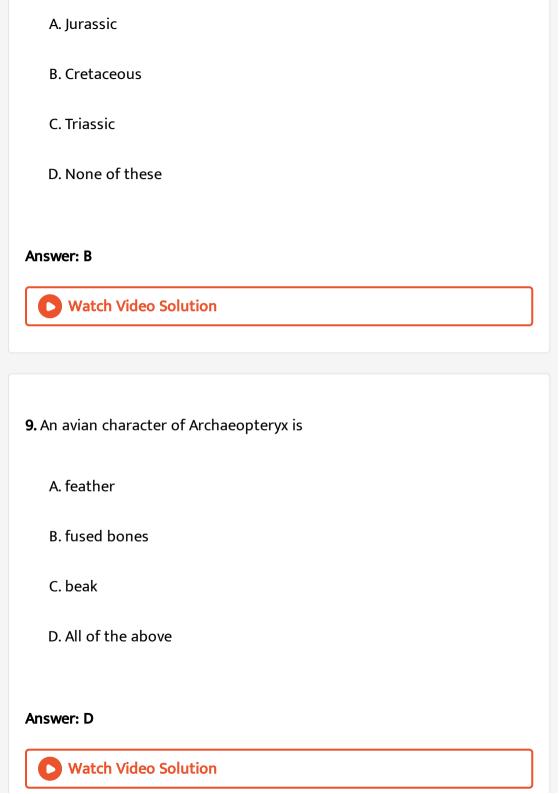
**3.** Which of the following is a connecting link between annelinds and arthropods

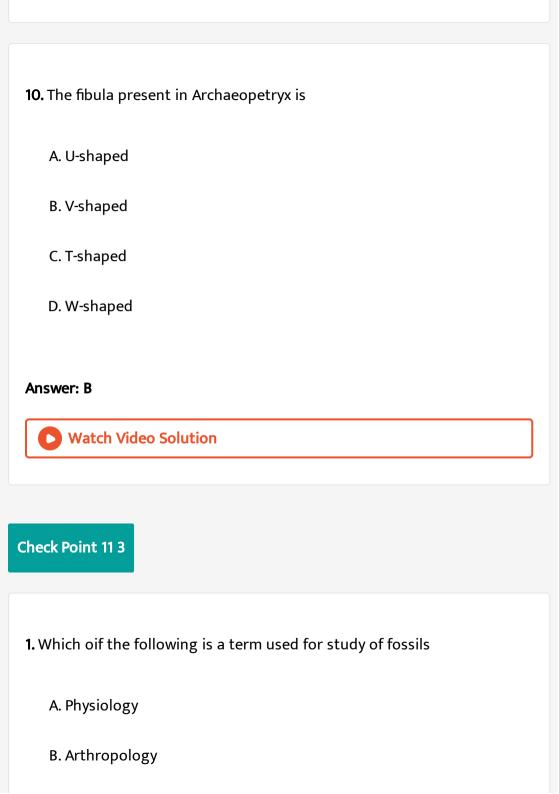
A. Peripatus
B. Euglena
C. Viruses
D. Noen of these
Answer: A
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4. The presence of shell and mantle in Neopllina is a character
A. chordate
B. molluscan
C. annelid
D. arthropod
Answer: B
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5. Connecting link between chordates and non-chordates is
A. Peripatus
B. Balanoglossus
C. Sphenodon
D. Tachyglosscus
Answer: B
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<b>6.</b> The reptilian character in Echidna is
A. presence of hairs
B. mammary glands
B. mammary glands  C. presence of cloaca

D. presence of vivipary
nswer: C
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Arrchaeopteryx is considered missing link because
A. it has pneumatic bones
B. it has feathers
C. it is a fossil organism
D. it has a long tail
nswer: C
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**8.** The fossil Archaeopteryx was found in the rocks of





D. Zoology
Answer: C
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2. Who is known as the father of palaentology
A. Baron Georges Cuvier
B. Leonardo da Vinci
C. Drawin
D. Mendal
Answer: B
Watch Video Solution

C. Palaeontology

3. Indroda dinosaur and fossil park is situated at A. Gujarat B. Himachal Pradesh C. Lucknow D. None of these Answer: A **Watch Video Solution** 4. The inorganic origin fossils which shows close resemblance with the forms of organic is a A. coprolite B. microfossil C. pseudofossil D. unusaul fossil

## Answer: C Watch Video Solution

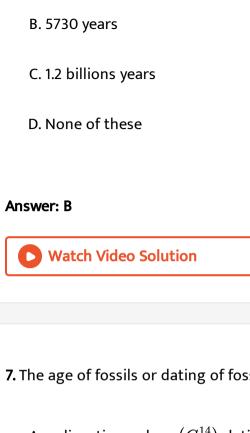
- **5.** Fossis are most likely to be found in
  - A. the continental shelves
  - B. unglaciated terrain
  - C. sedimentary rocks
  - D. igneous rocks

#### **Answer: C**



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- 6. Half-life of carbon-14 is
  - A. 530 years



#### 7. The age of fossils or dating of fossils can be best estimated by

- A. radioactive carbon  $\left(C^{14}\right)$  dating method
- B. radioactive nitrogen method
- C. electron spin resonance method
- D. Both (a) and (c)

#### Answer: D



**8.** An 80000 years old fossil was recovered from igneous rock, then which of the following method would have been used to find its age

- A. Uranium-lead method
- B. Carbon-14 method
- C. Potassium -argon method
- D. Both (a) and (b)

#### **Answer: A**



- **9.** The correct order of the geologic eras , from mst anicent to most recent , is
  - A. Palaeozic, Coenozoic, Mesozoic
  - B. Precambrian, Mesozoic, Coenozoic, Palaeozoic
  - C. Palaeozoic, Mesozoic, Coenozoic

D. Coenozoic,Mesozoic
Answer: C
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10. Extreme specialisation and extinction of great reptilies occurred in the
epoch

A. Permian

B. Triassic

C. Jurassic

**Answer: D** 

D. Cretaceous

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A. Mesozoic-Jurassic
B. Mesozoic-Cretaceous
C. Archaezoic
D. Palaeozoic-Carboniferous
Answer: A
Watch Video Solution
12. Which animal evolved maximally in Palaeiocene epoch
12. Which animal evolved maximally in Palaeiocene epoch  A. Reptilies
A. Reptilies
A. Reptilies B. Fishes

11. The first flowering plants appeared in

# Answer: B Watch Video Solution

13. Archaeozoic era is considered as the age of

A. appalachian revolution

B. first great revolution

C. rocky mountain revolution

D. second great revolution

#### **Answer: B**



**Watch Video Solution** 

**14.** According to geological clock one second equals

A. 52000 years

- B. 3125000 years C. 187500000 years D. 1 billion years Answer: A **Watch Video Solution** 
  - **15.** In carboniferous period , all continents existed in the form of a single giant landmass called
    - A. pangea
    - B. ethiopia
    - C. nearctic
    - D. gondwana

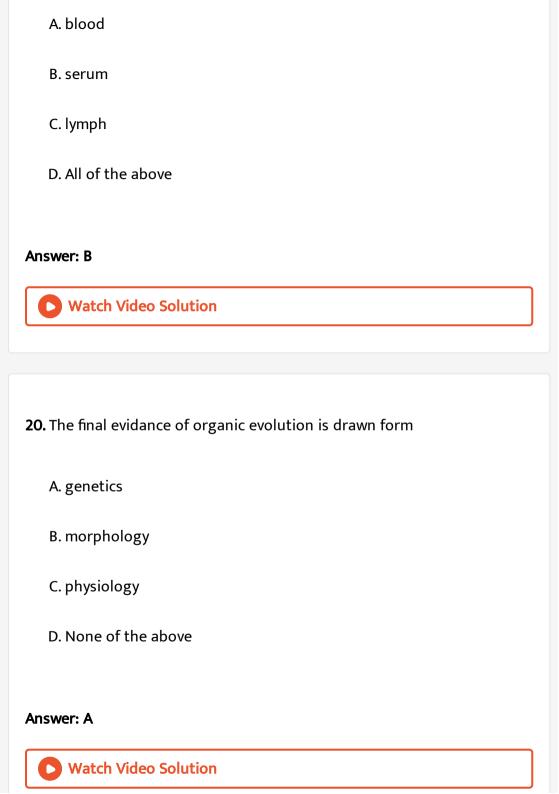
### Answer: A



<b>16.</b> Evidence form biochemistry and physiology can be seen form
A. metabolism
B. enzymes
C. hormones
D. All of these
Answer: D  Watch Video Solution
17. Which of the following types of blood group are found in apes
A. A-type
B. B-type
C. AB-type

## Watch Video Solution 18. A difference of how many amino acids is seen between haemoglobin of pig and human A. 10 B. 11 C. 12 D. 19 Answer: A Watch Video Solution 19. Serological tests are done using

**Answer: D** 



### Chapter Exercises Taking It Together Assorted Question Of The Chapter For Advanced Level Practice

- A. Lobefish
- B. Dodo fish
- C. Sea weed
- D. Chimpanzee

#### Answer: A



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2. Fossils are generally found in

A. sedimentary rocks

- B. Igneous rocks
- C. metamorphic rocks
- D. any type of rocks

#### **Answer: A**



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3. The humming bird, hawk and the humming moth illustrate

Or

What is common to whale seal and shark

- A. adaptive radiation
- B. homology
- C. convergent evolution
- D. divergent evolution

Answer: C



4. The epoch of representing first man -like apes in geological period is

A. Pliocene

B. Oligocene

C. Miocene

D. Pleistocene

#### **Answer: C**



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5. A fossil is a

A. laboratory preserved animal

B. dead animal of the past

C. stuffed animal

D.
Answer: C
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6. The featrue which enabled reptiels to dominate the land fauna for 100
million years, was
A. large size
B. heavy armour

C. large teeth

D. large eggs

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**Answer: B** 

7. Fossil of ammonites and trilobites can be deted to rocks of
A. Miocene
B. Permian
C. Pliocene
D. Oligocene
Answer: B
Watch Video Solution
8. As evident from records, which era had no life ?
A. Archaeozoic
B. Proterzoic
C. Palaeozoic
D. Goenozoic

# Answer: A Watch Video Solution

- **9.** During the days of dinosaurs , mammals had
  - A. already evolved
  - B. a size of cats and rabbits
  - C. height of evolution
  - D. not yet evolved

#### Answer: A



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- 10. Which is a vestigeal organ of python
  - A. Nose

C. Teeth
D. Hindlimbs
Answer: D
Watch Video Solution
11. Mammals in geological development of earth arose in period
A. Permian
B. Carboniferous
C. Jurassic
D. Oligocene and Eocene
Answer: C
Watch Video Solution

B. Scales

12. Which of the following is a living fossil?
A. Euglena
B. Limulus
C. Sycon
D. Balanoglossus
Answer: B
Watch Video Solution
13. Galapagos finches are associated with
13. Galapagos finches are associated with  A. Linnaeus
A. Linnaeus
A. Linnaeus B. Darwin

## Watch Video Solution 14. Which type of homology exists between arm and leg of man? A. Phylogenetic B. Sexual C. Serial D. None of these **Answer: C Watch Video Solution** 15. Who formulated the concept of analogy and homology? A. Sir Richard Owen

**Answer: B** 

C. Lamarck
D. Hulton
Answer: A
Watch Video Solution
<b>16.</b> The dating of rocks is done by calculating the ratio between
A. Uranium -lead
B. Potassium -argon
C. Rubidium -stontium
D. All of these
Answer: D
Watch Video Solution

B. Charles Darwin

## **17.** Flowering plants arise about A. 30 million years ago

- B. 140 million years ago
- C. 225 million years ago
- D. 345 million years ago

#### **Answer: B**



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#### 18. Dinosaurs are

- A. extict amphibians
- B. extinct reptiles
- C. Primitive mammals
- D. Living reptiles

## **Answer: B** Watch Video Solution 19. Flippers of seal are A. Fins B. Skin outgrowth/webs C. Forelimbs D. Hindlimbs **Answer: C** Watch Video Solution 20. Non-functional wings occur in A. emu, owl and dodo

C. kiwi,emu and ostrich D. Rhea ,eagle and cassowary **Answer: C Watch Video Solution** 21. Which of the following would be easily fossilized A. Heart B. Tooth C. Skin D. Liver Answer: B **Watch Video Solution** 

B. ostrich, kiwi and stork

22. Vestigal organ present in Greenland Whale is
A. forelimbs
B. Pelvic girdle
C. Hindlimbs
D. both (b) and ©
Answer: D
Watch Video Solution
23. Pouched mammals attained diversity in
A. Asia
B. South America
C. Australia

### Answer: C



**24.** Who observed that embroys never pass through adult stages of their ancestors

- A. von Baer
- **B.** Charles Darwin
- C. Ernst Haeckel
- D. Richard Owen

#### Answer: A

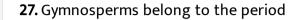


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25. Which are vestigial in humans?

A. Tail vertebrae B. Auricular muscles C. Scalp muscles D. All of these **Answer: D Watch Video Solution** 26. Many of the animals and plants found on exclusive isolated islands only are A. endemic B. exotic C. sympatric D. None of these Answer: A





- A. Jurassic
- B. Crustaceous
- C. Triassic
- D. None of these

#### **Answer: C**



- **28.** One of the following has rather recently become extinct.
  - A. Dinosaur
  - B. Dodo
  - C. Mammoth

D. Pterodactyl
Answer: B
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29. In horse, there has been an adaptartion of reduction of toes from five
to one on each foot, which is long and covered by a hoof. This toe is

A. First

B. Second

C. Fourth

D. Third

**Answer: D** 

<b>30.</b> Fossiles of mammoth were found in
A. Norway
B. Russia
C. Germany
D. Siberia
Answer: D
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<b>31.</b> Dinosaurs dominated the earth about
A. 10 million years ago
B. 50 million years ago
C. 108 million years ago

## **Answer: C Watch Video Solution** 32. First evidence of land plants came in A. Archaeizoic era B. Mesozoic era C. Palaeozoic era D. Coenozoic era **Answer: C**



**33.** Geological time scale was first developed by

A. Leonardo da Vinci

C. Giovanni Arduino D. Boltwood **Answer: C Watch Video Solution** 34. Which of these events occurred earliest in the history of earth? A. Formation of oxygen B. First human C. Colonisation of land by fungi D. Evolution of animals Answer: A **Watch Video Solution** 

B. George Cuvier

<b>35.</b> Evidence indicates that the microfossils already existed at least
A. 4.5 billion years ago
B. 3.5 billion years ago
C. 1.3 billion years ago
D. 1 million years ago
Answer: B
Watch Video Solution
<b>36.</b> The oldest fossiles found so far date back to the
A. Cambrian period
B. Archaean era
C. Phanerozoic era
D. Proterozoic era

#### Answer: D



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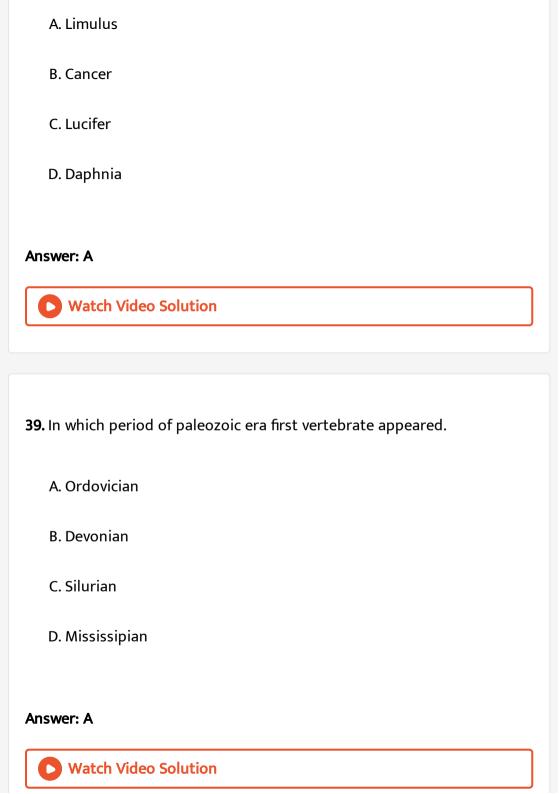
- 37. Our arm is homologous with
  - A. a seal flipper
  - B. an Octopus tentacle
  - C. monkey tail
  - D. Both (a) and (c)

#### **Answer: A**



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**38.** An aquatic living fossil, with ancient origin and many primitive characters which respires through book gills, is



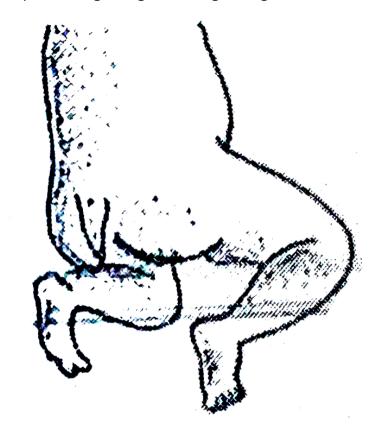
#### **40.** `Golden Age of Dinosaurs'/Age of reptiles was

- A. Mesozoic
- B. Coenozoic
- C. Palaeozoic
- D. Psychozoic

#### Answer: A



**41.** Identify the vestigial organ in the given figure .



A. Vermiform appendix

- B. Auricular
- C. Coccyx
- D. Plica semilunaris

**Answer: C** 



**42.** During phylogenetic study, which is sequenced?

A. rRNA

B. mRNA

C. Mitochondrial RNA

D. tRNA

#### Answer: A



**Watch Video Solution** 

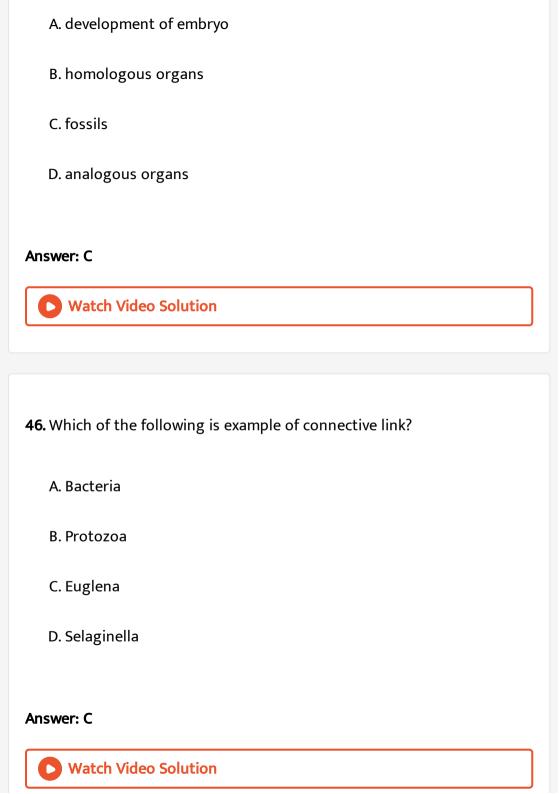
A. embryological characters

43. von Bear supports the theory of evolution on the basis of

B. gern layers

C. somatic variations

D. genetic variations
Answer: A
Watch Video Solution
<b>44.</b> Prototherians have evolved from
A. reptiles
B. birds
C. eutherians
D. amphibians
Answer: A
Watch Video Solution
<b>45.</b> Palaentological evidences for evolution refer to the



<b>47.</b> Origin of seed in land p	lants occured about
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- A. 160 million years ago
- B. 240 million years ago
- C. 285 million years ago
- D. 345 million years ago

#### **Answer: D**



**Watch Video Solution** 

48. The best way of direct dating fossils of recent origin is by

- A. radio -carbon method
- B. uranium- lead method
- C. potassium -argon method

D. Both (a) and (c)

**Answer: D** 



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**49.** Which of the following provides evidence for the process of evolution

?

- A. Radiometric dating
- B. The fossil record
- C. Molecular biology
- D. All of these

#### Answer: C



#### **50.** Fossils are dated by:

- A. stratigraphic position
- B. amount of calcium residue
- C. association with other animals
- D. radioactive carbon content

#### **Answer: D**



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#### 51. Evolution is best defined as

- A. inheritance of acquired characters
- B. descent by modifications
- C. spontaneous generation
- D. struggle for existence

# Answer: B Watch Video Solution

52. A male human having mammary glands is a case exhibiting

A. retrogressive evolution

B. mutation

C. atavism

D. metamorphosis

#### **Answer: C**



**Watch Video Solution** 

**53.** Homologous organs are

A. tails of birds, monkey and scorpion

B. stings of honeybee, scorpion and fangs of snake

C. wings of butterfly, flying fish and bird

 $\ensuremath{\mathsf{D}}.$  paddle of /legs of duck , hindlimbs of pig, hindlimbs of kangaroo

#### **Answer: D**



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**54.** The greatest evolutionary change enabling the land vertebrates to be completely free from water , was the development of

A. four legs

B. lungs

C. shelled eggs and internal fertilisation

D. four -chambered heart

#### **Answer: C**



55. The age of rock is calculated on the basis of

A. type of fossils present

B. number of strata present

C. amount of water content present

D. amount of lead present

#### **Answer: D**



**Watch Video Solution** 

**56.** Coenozoic era is known as

A. amphibians and lycopods

B. marine invertebrates

C. reptiles and gymnosperms

D. mammals and modern flora

#### **Answer: D**



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**57.** In some organisms , the existence of analogous structures (wings of insects and bat , jointed legs of insects and vertebrates )is due to the phenomenon of

- A. convergent evolution
- B. divergent evolution
- C. organic evolution
- D. genetic drift

#### Answer: A



B. rat and dog C. bacterium and protozoan D. starfish and cuttlefish Answer: A **Watch Video Solution 59.** Presence of gills in the tadpole of frog indicates that: A. frogs will have gills in future B. frogs evolved form gilled ancestors C. fishes were amphibious in the past D. fishes evolved from frog-like ancestors Answer: B

A. dogfish and whale

#### 60. Analogous organs arise due to

- A. divergent evolution
- B. artificial selection
- C. genetic drift
- D. convergent evolution

#### **Answer: D**



**Watch Video Solution** 

#### 61. Role of isolation in evolution is

- A. differentiation in species
- B. maintenance of species
- C. evolutionary divergence

D. extermination of species

**Answer: C** 



**62.** Identify the animal in the given figure. It is a connecting link between

- A. Euglena, animals and plants
- B. Virus, non -livings and livings
- C. Euglena, non -livings and livings
- D. Virus, animals and plants

#### **Answer: A**



- 63. In Miocene,
  - A. mammals reached a peak of evolution
  - B. reptiles reached a peak of evolution
  - C. gymnosperms were dominant
  - D. birds were dominant

#### **Answer: A**



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- 64. A living connective link which provides evidence for organic evolution
  - A. Archaeopteryx between the the reptiles and mammals
  - B. Lung -fish between pisces and reptiles
  - C. Duck billed platypus between the reptiles and mammals
  - D. Sphenodon between the reptiles and birds

#### Answer: C



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**65.** Being all mammals, whale, dolphins, bat, monkey and horse have some common character but they also show conspicuous differences. This is due to phenomenon of

A. normalisation B. genetic drift C. convergence D. divergence Answer: D **Watch Video Solution** 66. Homologous organs have A. same origin ,but different functions B. different origin ,but same functions C. neither same origin nor same functions D. different origin and different functions Answer: A **Watch Video Solution** 

<b>67.</b> Appearance of teeth in the embryo of a bird proves that	
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- A. ontogeny repeats phylogeny
- B. evolution has taken place
- C. birds have evolved from reptiles
- D. All of the above

#### Answer: D



body

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#### 68. Serial homology is exhibited by

- A. The organs of same individual occupying different levels of the
- B. The organs of different organisms with same function

- C. The organs of different organisms at same level

  D. All of the above
- **Answer: A**



**69.** Which one of the following terms would most correctly describes the relationship between the flight organs of animals like locust,bat, swallow,and flying fish?

- A. Atavism
- B. Analogous
- C. Homologous
- D. Vestigial

#### **Answer: B**



**70.** Which one of the following sets includes all homologous organs

A. Hindleg of pig , duck and kangaroo

B. Wings of bat , butterfly and birds

C. Sting of honeybee, scorpion and snake

D. Tail of rat, peacock and cockroach

#### **Answer: A**



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**71.** Appearance of ancestral characters in the new borns, such as tail, cervical fistula in man ,gill slits, etc. Are known as

A. homologous

B. Analogous

C. vestigial

Answer: D
Watch Video Solution
72. Which one is not a vestigial organ in man?
A. Wisdom tooth
B. Muscles of external ear pinna
C. Fossa ovalis
D. Ileum
Answer: D

D. atavism

**73.** Which one of the following sets of structure includes only analogous organs

- A. Hindlegs of horse , grasshopper and bat
- B. Hands of man, monkey and kangaroo
- C. Mandibles of cockroach, mosquito and honeybee
- D. Wings of butterfly, housefly and bat

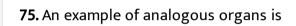
#### **Answer: D**



**74.** Development of similar habits in pouched and placental mammals found in similar habitals is called

- A. divergent evolution
- B. convergent evolution
- C. adaptive radiation

D. Macrocvolation		
Answer: B		
Watch Video Solution		



D macroevolution

- A. tubers of potato and sweet potato
- B. tubers of dahlia and sweet potato
- C. tubers of potato and jerusalem artichoke
- D. All of the above

# Answer: A



76. Flippers of Penguin and Dolphin are considered analogous through they are modified forelimbs because

A absence of certain bones

B. development from defferent lineages

C. structural differences

D. functional differences

#### **Answer: B**



**Watch Video Solution** 

77. In absolute dating, age of the rock/fossil is determined by

A. depth of rock

B. exposure of rock

C. decay of a radioisotope

D. rate of surface erosion of rock

# Answer: C



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78. There are few Eutherians in Australia because

- A. enviroment is unsuitable
- B. no invasion due to geographical isolation
- C. diseases killed most
- D. marsupials dominated over them

#### **Answer: B**



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**79.** In the developmental history of mammalian heart. It is observed that it passes through a two chambered fish like heart, three chambered frog

like heart and finally four chambered stage. To which hypothesis can this above cited statement be approximated?

A. Biogentic law

B. Hardy -Weinberg law

C. Lamarck's principle

D. mendelian principle

#### Answer: A



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**80.** The fossils are dated by their presence in different layers of earth , the being condsidered is

A. stratigraphic position

B. amount of calcium residue

C. association with other animals

D. radioactive carbon content

#### Answer: A



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**81.** Sometimes ,the reinains of a dead animal escape destruction and become buried in sediment of ash or survives under heating ,crushing or folding .the sediments or rock becomes eleveted as a part of the land scape destructive erosion or dug by water or wind and the object becomes exposed or dug out and comes to the attention of a zoologist.Such a phenomenon leads to the formation of

- A. a new species
- B. a new animal
- C. a fossil
- D. no ,this is not possible

Answer: C

**82.** Palaeontology is the study of fossil and is in support of evolution . Such an evidence is

A. a complete evidence of evolution

B. an incomplete evidence of evolution

C. incomplete evidence in India and complete in Europe

D. The statement is wrong

#### **Answer: A**



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**83.** In justify that fossil 'A' is older to 'B' ,one of the following can be selected .

A. Fossil 'B' is in more deeper layers

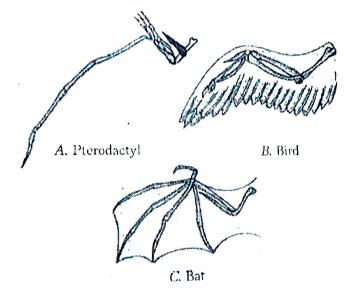
- B. Fossil 'B' shows homology and analogy with 'A'
- C. Fossil 'A' was found in more deeper sedimentation
- D. None of the above

#### **Answer: C**



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# 84. In the following figures, the given structures are



A. analogous

- B. homologous

  C. Both A and B are analogous
- D. Both B and C are homologous

#### **Answer: B**



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- 85. When did all the major subdivision of vascular plants arise on earth
  - A. 400 million years in devonian
  - B. 206 million years in jurassic
  - C. 445 million years in Ordovician
  - D. 540 million years in Carboniferous

# Answer: B



- **86.** Significance of study of evolution of horse is
  - A. That it provides incomplete record of evolution
  - B. That it provides discontinuous record of evolution
  - C. That it provides most complete record of evolution
  - D. no, it has not been possible to discover all fossils of ancestors of horse

#### **Answer: C**



- **87.** Current theories of prehiotic evolution are based on evidence for all of the following except the abiotic
  - A. Production of small organic molecules
  - B. production of liposomes
  - C. formation of oligopeptides

D. origin of DNA -protein interactions

#### **Answer: D**



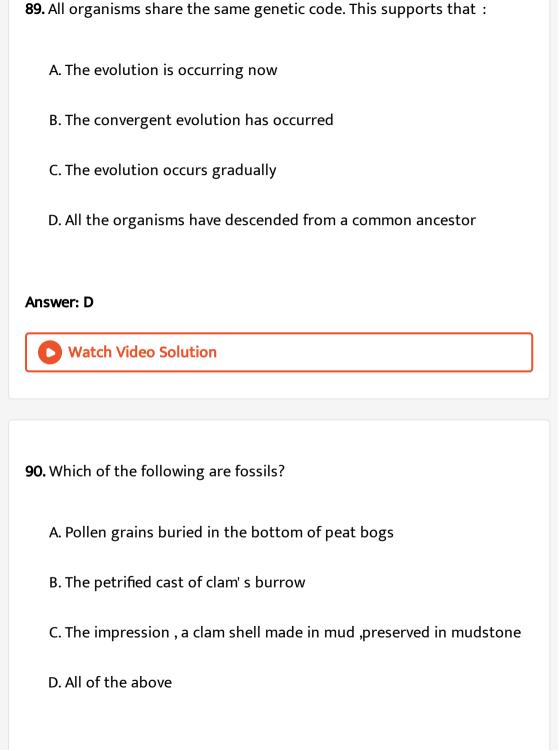
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**88.** A radioactive isotope has a half-life of 1.2 billion years . As measured by the presence of the isotope and its stable decay producy ,a rock originally contains 10g of the radioactive isotope and now contains 1.25 g . How many years old is the rock?

- A. 10000 years
- B. 12 billion years
- C. 3.6 billion years
- D. 0.3 billion years

#### Answer: C





### **Answer: D**



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**91.** In Africa ,there is a species of bird called the yellow -throated longclaw .It looks almost exactly like the meadowlark found in north America , but they are not closely related .This is an example of

- A. Uniformitarianism
- B. Artificial selection
- C. Gradualism
- D. Convergent evolution

## **Answer: D**



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**92.** Which of the following is examples of vestigial structure?

- A. Your functional tailbone

  B. Nipples on male mammals

  C. Sixth fingers found in some human

  D. Your knee cap

  Answer: D

  Watch Video Solution
- **93.** We would predict that two very distantly related spcies like blue birds and alligators probably share
  - A. most of the same DNA sequences
  - B. more DNA sequences than a blue bird and a duck
  - C. Relatively few DNA sequences
  - D. All the same DNA sequences

Answer: C

**94.** What is the supportive evidences for evolution from comparative anatomy?

A. All antelopes have four legs

B. Most animals have a head

C. Similar gene sequences code for similar proteins

D. Diverse species have homologous structures

#### **Answer: D**



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**95.** What is the supportive evidence for evolution from comparative embryology?

A. All plant seeds look alike

B. All embryos arise from the union of egg and sperm

C. Different species have different embryos

D. Different species develop along the patten set by their common ancestor

#### Answer: D



96. Haeckel's theory of recapitulation means that

A. The life history of an organism reflects its evolutionary history

B. All the organisms start as an egg

C. The progeny resembles with parents

D. The lost body parts are regenerated

# Answer: A



**97.** The bones of forelimbs of whale, bat, cheetah and man are similar in structure, because.

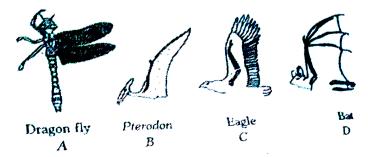
- A. one organism has given rise to another
- B. they share a common ancestor
- C. they perform the same function
- D. they have biochemical similarities

#### **Answer: B**



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98. The different wings of the different animals in the given figures are



- A. all homologous
  - B. all analogous
  - C. B, C and D are homologous and A is analogous to all
- D. B, C, D are analogous

#### Answer: C



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- 99. Fossilisation occurs ,where
  - B. animals are destroyed by environment

A. organisms are buried and preserved by natural processes

- C. animals are destroyed by scavengers
- D. animals are buried by natural processes

#### **Answer: A**



100. Evolution of horse from Hyracotherium involved

A. lengthening of limbs and increase in size

B. progressive loss of digits and lengthening of retained digits causing shifting of soft -footed to paddle -footed

C. increased complexity of molars and molarisation of premolars

D. All of the above

#### **Answer: D**



**Watch Video Solution** 

101. The oldest evidence of life on earth, although controversial, is

A. The fossilised remains of simple plants that are over 5 billion years

old

- B. 3.8 billion years old rocks with isotopes of carbon that seem to
  - represent the metabolic activity of the organisms
- C. The mineralised ramains of tiny animals
- D. The fossilised remains of cellular colonies dating from about 3 million years ago

#### **Answer: B**



- **102.** What is the strongest evidence that protobionts may have formed spontaneously?
  - A. The fossi record found in the stromatolites
  - B. The discovery of ribosomes, showing that prebiotic RNA molecules may have been autocatalytic

C. The production of organic compounds within a laboratory

apparatus simulating conditions on early earth

D. The relative case with which liposomes can be synthesised in laboratories

#### Answer: C



# Chapter Exercises Medical Entrances Special Format Questions Statement **Based Questions**

- 1. Consider the following statements.
- I. Neoteny. is reproduction of axolotl larva.
- II. Biogenetic law states that, 'Ontogeny is recapitulation of phylogeny'
- III. Virus is a connecting link hetvveen plants and animals.
- IV. Most of the enzymes catalysed biochemical reactions arc same from bacteria to man and. plants.

V. The composition and physiological .role of blood, lymph and tissue fluid are different in all vertebrates.

Choose the code with incorrect statements

- A. I and II
- B. II and III
- C. III and V
- D. Only IV

#### **Answer: C**



- **2.** Which of the following staten1ents about geological tirne scale are correct?
- I. Origi.p of first seed plant occurred in Carboniferous period.
- II. Angiosperms appeared in Cretaceous period.
- III. There was complete absence of living organisms in Azoic era.
- IV. Precambrian period cmnprises about 87% of the geological time scale

A. I and III B. II and IV C. Only III D. All of these Answer: D Watch Video Solution 3. Choose the true state1nents from the following: I. Birbal Sahni is called 'Father of Indian Palaeobotany. II. Pseudo-fossils are re.mains of plants and animals. III.  $C_{11}$  radioactive carbon method is used for dating not only for fossils, but also for archaeological remains IV. Coenozoic era is called 'nge of m, unmals and birds' A. I and III B. Only III

C. I, III and IV D. II, III and IV Answer: C **Watch Video Solution** 4. Which of the following is Lrue about Archaeopteryx? I. Jaws are modified into beak. II. Ta.ii is bony and long. III. Forelimbs are modified into wings. IV. Connecting link between birds and mammals. A. I, II and III B. III and IV C. II, III and IV

Answer: A

D. I and II

5	Fossi	lc	are	ctuc	انطا	for
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I. tracing evolutionary history of organisms.

II. studying extinct organisms.

III. establishing genetic relationships.

IV. DNA fingerprinting of new species only.

A. I and II

B. II and III

C. III and IV

D. I and III

#### **Answer: A**



# **6.** Match the following Columns

	Column I		Column II
A.	Euglena	1.	Connecting link between bony fishes and cartilaginous fishes
В.	Peripatus	2.	Connecting link between non-chordates and chordates
C.	Chimaera	3.	Connecting link between animals and plants
D.	Balanoglossus		Connecting link between reptiles and mammals
E.	Platypus	5.	Connecting link between Annelida and Arthropoda

	A	В	$\mathbf{C}$	D 4	${f E}$	
A.	1	2	3	4	5	
<b>D</b>	A	В	$\mathbf{C}$	D	${f E}$	
В.	3	5	1	$rac{\mathrm{D}}{2}$	4	
_	A	В	$\mathbf{C}$	D	${f E}$	
C.	2	5	1	D 4	3	
D.	A	В	$\mathbf{C}$	D 1	${f E}$	
	4	3	2	1	5	

# **Answer: B**



# 7. Match the following Columns.

# Column 1 Column 1 Column 11 A Atavism 1. Thorns of Bonguinvillea and tendrils of Coourbita. B. Vestigial organs 2. Leaf of a plant and cladede of Ruseus. C. Analogous organs 3. Pelvic girdle in python D. Hennelogous organs 4. Development of power of moving pinns in sense persons.

A. A B C D
A. 4 3 2 1
B. A B C D
C. A B C D

Answer: A



**8.** Match the following Columns.

Northead and	Column I		Column II
Α.	The collection of preserved remains of ancient organisms.	1.	Embryology
В.	A method for determining the age of natural material based upon the decay of radioactive elements.	2.	Molecular Biology
C.	The study of the physical form of organisms.	3.	Fossils record
D.	The study of how organisms develop from fertilised eggs.	4.	Radiometric dating
E.	The study of the biomolecules responsible for the development and patterns seen in organisms.	5,	Morphology

**Answer: C** 



9. Assertion: Ginkgo biloba is living fossil.

Reason: Organisms which have persisted and remain unchanged for the past several million years while their relative disappeared.

A. Both Assertion and Reason are true, but Reason is the correct explanation of Assertion

B. Both Assertion and Reason are true, but Reason is not the correct explanation of Asseration

C. Assertion is true, but Reason is false

D. Asseration is false, but Reason is true

# Answer: A



**Watch Video Solution** 

**10.** Assertion : Homologous organs have common ancestry and similar function.

Reason: Analogous organs have unlike origin and dissimilar function.

A. Both Assertion and Reason are true, but Reason is the correct explanation of Assertion

B. Both Assertion and Reason are true, but Reason is not the correct explanation of Asseration

C. Assertion is true, but Reason is false

D. Both Asseration and Reason are false

#### **Answer: D**



**Watch Video Solution** 

**11.** Assertion Third molars and hairs on body in humans are examples of atavism.

Reason Atavism is the reappearance of disappeared ancestral characters

A. Both Assertion and Reason are true, but Reason is the correct explanation of Assertion

B. Both Assertion and Reason are true, but Reason is not the correct explanation of Asseration

C. Assertion is true, but Reason is false

D. Asseration is false, but Reason is true

#### Answer: D



**Watch Video Solution** 

12. Asseration Aschaeozoic era contains abundant fossils

Reason Life originated in Palaeozoic era

A. Both Assertion and Reason are true, but Reason is the correct explanation of Assertion

- B. Both Assertion and Reason are true, but Reason is not the correct explanation of Asseration
- C. Assertion is true, but Reason is false
- D. Both Asseration and Reason are false

#### Answer: D



- 13. Asseration Petrified fossils contains hard parts of orginisms
- Reason Moulds and casts lack the remains of organisms
  - A. Both Assertion and Reason are true, but Reason is the correct
    - explanation of Assertion
  - B. Both Assertion and Reason are true, but Reason is not the correct
    - explanation of Asseration
  - C. Assertion is true, but Reason is false

D. Asseration is false, but Reason is true

#### **Answer: B**



**Watch Video Solution** 

**14.** Assertion: Comparative biochemistry provides a strong eviednce in favour of common ancestory of living beings.

Reason: Genetic code is universal.

A. Both Assertion and Reason are true, but Reason is the correct explanation of Assertion

B. Both Assertion and Reason are true, but Reason is not the correct

explanation of Asseration

C. Assertion is true, but Reason is false

D. Asseration is false , but Reason is true

Answer: B

**15.** Assertion: From evolutionary point of view, human gestation period is believed to be shortening.

Reason: One major evolutionary trend in humans has been the larger head undergoing relatively faster growth rate in the foetal stage.

A. Both Assertion and Reason are true, but Reason is the correct explanation of Assertion

B. Both Assertion and Reason are true, but Reason is not the correct explanation of Asseration

C. Assertion is true, but Reason is false

D. Both Asseration and Reason are false

#### Answer: D



16. Asseration Amphibians have evolved from fishes

Reason Archaeopteryx is a fossil linking fishes and amphibians

A. Both Assertion and Reason are true, but Reason is the correct explanation of Assertion

B. Both Assertion and Reason are true, but Reason is not the correct explanation of Asseration

C. Assertion is true, but Reason is false

D. Asseration is false, but Reason is true

# Answer: C



**Watch Video Solution** 

**17.** Assertion During development, general characters appear before specialised characters.

Reason Embryos of different groups resemble with each other in early developmental stages

A. Both Assertion and Reason are true, but Reason is the correct explanation of Assertion

B. Both Assertion and Reason are true, but Reason is not the correct explanation of Asseration

C. Assertion is true, but Reason is false

D. Asseration is false, but Reason is true

# Answer: A



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**1.** Analogous structures are a result of

A. convergent evolution B. shared ancestry C. stabilising selection D. divergent evolution Answer: A **Watch Video Solution** 2. Which of the following structures is homologus to the wing of a bird? A. Wing of a moth B. Hindlimb of rabbit C. Flipper of whale D. Dorsal fin of a shark Answer: C **Watch Video Solution** 

- 3. The wings of a bird and the wings of an insect are
  - A. homologus structures and represent divergent evolution
  - B. analogous structures and represent convergent evolution
  - C. phylogenetic strutures and represent divergent evolution
  - D. homologus structures and represent convergent evolution

#### **Answer: B**



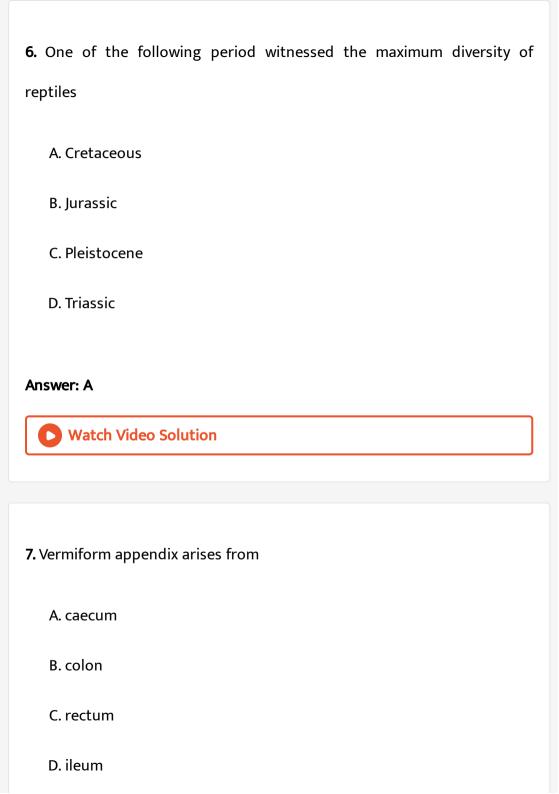
- 4. The formation of two species from one ancestral species is known as
  - A. convergent evolution
  - B. phyletic evolution
  - C. allapatry

D. divergent evolution				
answer: D				
Watch Video Solution				
Conecting link between fish and amphibia is				
A. Lungfish Protopterus				
B. Latiemeria				
C Saymouria and Spehencodom				

D. All of the above

Watch Video Solution

**Answer: A** 



#### Answer: A



**Watch Video Solution** 

- 8. How many years are considered in one minute in Geological clock
  - A. 190000 years
  - B. 187500000 years
  - C. 3125000 years
  - D. 52000 years

## **Answer: C**



**Watch Video Solution** 

**9.** Forelmbs of cat, lizard used in walking, forelimbs of whale used in swimming and forelimbs of bats used in flying are an example of

A. analogous organs B. adaptive radiation C. homologous organs D. convergent evolution **Answer: C Watch Video Solution** 10. Which one of the following are analogous structures A. Wings of bat and wings of pigeon B. Gills of prawn and lungs of man C. Thorns of Bougainvillea and tendrils of Cucurbita

# -

**Watch Video Solution** 

Answer: A

D. Flippers of dolphin and legs of horse

11. Choose the wrong statement

A. Louis Pasteur demonstrated that life comes only from pre-existing

B. SL , Miller observed that electric discharger in a flask containg

 $CH_4,\,H_2,\,NH_3$  and water vapour at  $800\,^\circ\,C$  formed amino acids

C. Flippers of penguins and dolphins are examples for homology

D. Homology indicates common ancestry

#### **Answer: C**



- 12. Choose the correct statement with reference to organic evolution.
- I. Flippers of whale and wing of bat exhibit analogy.
- II. Wing of butterfly ,and wing of bird exhibit homology.

III. Organs with dissimilar structure are called analogous organs. IV. Organs with similar structure and origin arc called homologius organs. A. I and II B. II and IV C. Land III D. III and IV **Answer: D Watch Video Solution** 13. Throns of Bougainvillea and tendrila of Cucurbita are example A. convergent evolution B. divergent evolution C. adaptive evolution D. coevolution

#### **Answer: B**



**14.** The process by which organisms with different evolutionary history evolve similar phenotypic adaptations in response to a common environmental challenge is called :

- A. natural selection
- B. convergenl evolution
- C. non-random evolution
- D. adaptive radiation

#### **Answer: B**



**15.** The eye of octopus and eye of cat show different patterns of structure, yet they perform similar function. This is an example of

A. homologous organs that have evolved due to divergent evolution

B. analogous organs that have evolved due to convergent evolution

C. analogous organism that have evolved due to divergent evolution

D. homologous organs that have evolved due to convergent evolution

#### **Answer: B**



**Watch Video Solution** 

16. Recapitulation theory was given by

A. Haeckel

B. Mishra

C. Weisman

D. Lamarck



## **Watch Video Solution**

**17.** Which one of the following options gives one correct example each of convergent evolution and divergent evolution

	Convergent evolution	Divergent evolution
(a)	Eyes of octopus and mammals	Bones of forelimbs of vertebrates
(b)	Thorns of Bougainvillia and tendrils of	Wings of butterflies and birds
(c)	Cucurbita  Bones of forelimbs of	Wings of butterfly and
	vertebrates	birds
(d)	Thorns of Bougainvillia and tendrils of	Eyes of Octopus and mammals
/ /	Cucurbita	

A.

Convergent evolution

Divergent evolution

Eyes of Octops and mammals

Bones of forlimbs of vertebrates

В.

Convergent evolution

Divergent evo

Thorms of Bougainvillea and tendrils of Cucurbita

Wings of butte

C. Convergent evolution Divergent evolution Bones of forlimbs of vertebrates Wings of butterfly and birds D. Convergent evolution Divergent evol Thorns of Bougainvillea and tendrils of Cucurbita Eyes of Octopi Answer: A **Watch Video Solution** 18. Evolution of different species in a given area starting from a point and spreading to other geographical areas A. adaptive radiation B. natural selection C. migration D. divergent evolution Answer: A



19. Sequence of which of the following is used to know the phylogeny?

A. mRNA

B. rRNA

C. tRNA

D. DNA

## Answer: B



20. Similarities between organisms of different genotypes due to

A. microevolution

B. macroevolution

C. convergent evolution

D. divergent evolution
nswer: C
Watch Video Solution
<b>1.</b> The evolutionary history of an organism is known as
A. ancestry
B. palaeonotology
C. ontogeny
D. phylogeny
inswer: D
Watch Video Solution

**22.** Biogenetic law as given by Haeekel states that

- A. ontogeny recapitulates phylogeny
- B. phylogeny recapitulates onotogeny
- C. onotogeny and phylogeny go together
- D. there is no relationship between phylogeny and onotogeny

#### Answer: A



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- **23.** An evolutionary pattern characterised by a rapid increase in number and kinds of closely related species is called
  - A. convergent evolution
  - B. divergent evolution
  - C. adaptive radiation
  - D. parallel evolution

Answer: C



**24.** Evolutionary convergence is characterised by

A. development of dissimilar characteristics in closdy related groups

 $\ensuremath{\mathsf{B}}.$  replacement of common characteristics in differentiation groups

C. development of a common set of characteristics in groups of different ancestry

D. development of characteristics by random mating

#### **Answer: C**

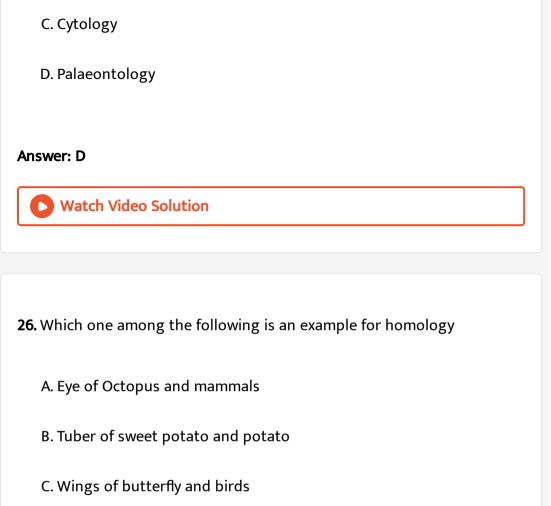


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25. Study of fossils is called

A. Organic evolution

B. Herpetology



D. Flippers of penguins and dolphins

**Watch Video Solution** 

**Answer: C** 

27. Homologous organs indicate			
A. convergent evolution			
B. parallel evolution			
C. common descendent			
D. natural selection			
Answer: C			
Watch Video Solution			
28. Fossilished faecal materials are known as			
28. Fossilished faecal materials are known as  A. coprolites			
A. coprolites			

## Answer: A



**Watch Video Solution** 

**29.** Wings of birds and wings of flies perform similar functions so they are examples of

- A. homologous organ
- B. analogous organ
- C. evolutionary organ
- D. paralogous organ

## **Answer: B**



**Watch Video Solution** 

30. Analogous structures are

- A. anatomically different, but performing similar functions
- B. anatomically similar, but performing different functious
  - C. anatomically similar and functioning similarly
- D. anatomically different and foncioning differently

#### Answer: A



**Watch Video Solution** 

- 31. Darwin's finches are a good example of
  - A. industrial rnelanism
  - B. connecting link
  - C. adaptive radiation
  - D. convergent evolution

## Answer: C



<b>32.</b> Peripatus is a connecting link between :			
A. Ctenophora and Pbtyhelminthes			
B. Mollusa and Echinodermata			
C. Annelida and Arthropoda			
D. Coelenterata and Porifera			
Answer: C			
Watch Video Solution			
33. echidna and ornithorhtnchus are the connecting links between			
A. amphibians and aves			

C. reptiles and mammals

**35.** Connecting link between annelida and mollusca is

A. Peripatus B. Lepidosiren C. Neopilina D. Protopterus **Answer: C Watch Video Solution** 36. Convergent evolution is shown by A. homologous organs B. aonlogous organs C. vestigial organs D. All of these **Answer: B Watch Video Solution** 

**37.** Ontogeny recapitulates phylogeny is narrated in which of the evidences for organic evolution ?

A. Palaeontological evidence

B. Physiological evidence

C. Embryological evidence

D. Anatomical evidence

## **Answer: C**



**38.** Thorn of Bougainvillea and tendril of Cucurbita are examples of :

A. analogous organs

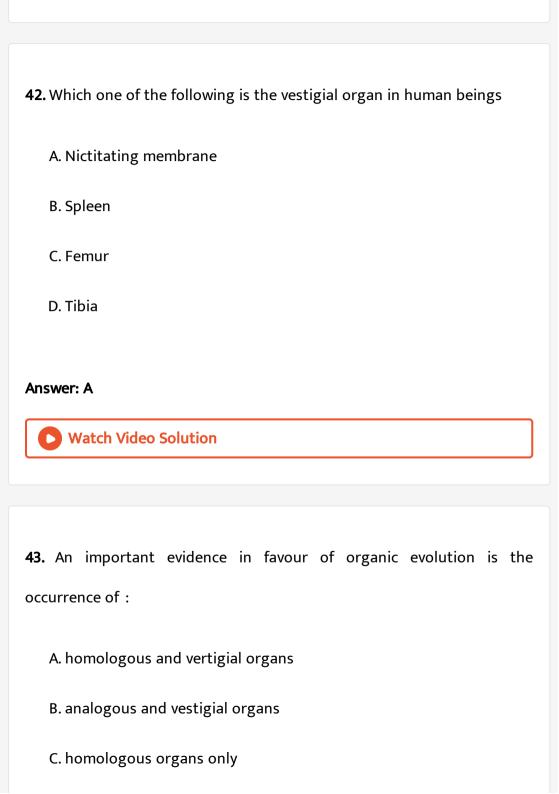
B. homologous organs

C. vestigial organs

D. retrogressive evolution
nswer: C
Watch Video Solution
<b>9.</b> A baby has been born with a small tail. It is a case exhibiting
A. retrogressive evolution
B. mutation
C. atavism
D. metamorphosis
nswer: B
Watch Video Solution

**40.** Which of the following is not a vestigial organ in man  $\,?\,$ 

A. Tail vertebrae B. Nails C. Nictitating membrane D. Vermiform appendix Answer: A Watch Video Solution **41.** Which of the following is the most evident source of evolution A. Fossils B. Morphology C. Embryo D. Vestigial organs Answer: A **Watch Video Solution** 



Answer: A			
Watch Video Solution			
<b>44.</b> Which of the following sets contain only homologous organs			
A. Whale's flipper, horse's forelimb, human hand			
B. Wings of butterfly, crow and insect			
C. Horse's forelimb, insect wing, human hand			
D. Vermiform appendix, body hair and patella			
Answer: A			
Watch Video Solution			
<b>45.</b> The evolutionary history of an organism is known as			

D. homologous and analogous organs

A. Phylogeny **B.** Ancestry C. Palaeontology D. Ontogeny Answer: A **Watch Video Solution** 46. When two species of different genealogy come to resemble each other as a result of adaptation, the phenomenon is termed A. diveigent evolution B. microevolution C. coevolution D. convergent evolution Answer: D



- **47.** What is common of Whale, Seal and Shark?
  - A. Seasonal migration
  - B. Thick subcutaneous fat
  - C. Convergent evolution
  - D. Homeothermy

## **Answer: C**



- 48. The finches of Galapagos islands provide an evidence in favour of
  - A. special creation
  - B. evolution due to mutation
  - C. retrogressive evolution

D. biogeographical evolution	

#### **Answer: D**



**Watch Video Solution** 

- 49. Adaptive radiations refer to
  - A. adaptation, due to geographical isolation
  - B. evolution of different species from a common ancestor
  - C. migration of members of a species to different geographical areas
  - D. power of adaptation in an individual to a variety of enviourment

## Answer: B



**50.** In the developmental history of mammalian heart. It is observed that it passes through a two chambered fish like heart, three chambered frog like heart and finally four chambered stage. To which hypothesis can this above cited statement be approximated?

- A. Biogenetic law
- B. Hardy-Weinberg law
- C. Lamarck's principles
- D. Mendelian principles

#### Answer: A



- 51. Jurassic period of the Mesozoic era is characterised by
  - A. gymnosperms are dominant plants and first birds appear
  - B. radiation of reptiles and origin of rnammals-like reptiles

- C. dinosaurs become extinct and angiosperms appear
- D. flowering plants and first dinosaurs appear

#### Answer: A



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- **52.** Age of fossils in the past was generally determined by radiocarbon method and other methods involving radioactive elements found in the rocks. More precise methods, which were used recently and led to the revision of the evolutionary periods for different groups of organisms, includes
  - A. study of carbohydrates/proteins in fossils
  - B. study of condition of fossilisation
  - C. Electron Spin Resonance (ESR) ,md fossil DNA
  - D. study of carbohydrates/proteins in rocks

## Answer: C



53. Which one of the following is not a vestigial structure in Homo sapiens?

A. Third molar

**B.** Epiglottis

C. Plica semilunaris

D. Pyramidalis muscle

# **Answer: B**



**Watch Video Solution** 

54. Which of the following sets represents vestigial organs

A. Vermiform appendix, body hair and patella

B. Visdom teeth, body hair and atlas vertebra

- C. Ear muscles, cochlea and coccyx
- D. Vermiform appendix, car muscles and coccyx

## **Answer: D**



- **55.** Which one of the following correctly describes the homologous structures?
  - A. Organs that have no function now, but had an important function in ancestors
  - B. Organs appearing only in embryonic stage and disappearing later
    - in the adult
  - C. Organs with anatomic.al similarities, but performing different functions

D. Organs with anatomical dissimilarities, but performing same functions

#### **Answer: C**



**56.** A good example of recapitulation theory is:

A. embryonic membranes of reptiles

B. tadpole larva of frog

C. placenta of mamnials

D. canine teeth of frog

## Answer: B



**57.** Vestigial organs present in an adult individual are example of basis of evidences of evolution :

A. morphological

B. palaeontological

C. embryological

D. anatoniical

## Answer: A



**58.** Which of the following animals is not only a living fossil but also considered as connecting link?

A. Sphenodon

B. Limulus

C. Neopilina

D. Latimeria

Answer: C

