

Hohete Tibeb S.C. / Ethio-Parents' Schools
Second Semester Centralized Biology Worksheet for Grade 12
April, 2020

PART I. MULTIPLE CHOICE QUESTIONS

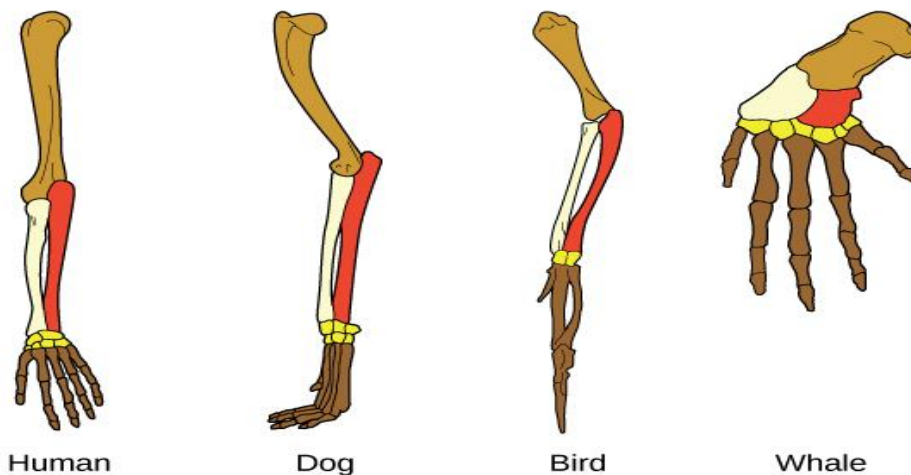
1. Allopatric speciation occurs when
 - A. a river cuts between a population.
 - B. mutations accumulate in a population.
 - C. gene flow brings new individuals into a population.
 - D. geographic isolation is followed by reproductive isolation.
2. Horses and donkeys can mate, but produce infertile offspring. This is an example of
 - A. hybrid sterility.
 - B. behavioral isolation.
 - C. geographic isolation.
 - D. allopatric speciation.
3. Which of the following items of evidence supports the view that change occurs within species? The
 - A. antibiotic resistance in bacteria.
 - B. polyploid hybridization in plants.
 - C. transposons shared by humans, chimpanzees, and gorillas.
 - D. fossils with characteristics intermediate between those of land mammals and modern whales.
4. What evidence supports the view that species change into new species? The
 - A. sociopathy in humans.
 - B. polyploid hybridization in plants.
 - C. evolution of drug resistance in HIV.
 - D. alarm calls in Belding's ground squirrels.
5. In class, I listed several conditions that are required for selection to produce evolutionary change. Which of the following was not included?
 - A. Variation
 - B. Sexual reproduction
 - C. Offspring resemble parents
 - D. Some variants are more likely to survive or reproduce than others
6. Recent genetic evidence indicates that during the last few tens of thousands of years
 - A. human evolution has stopped.
 - B. human evolution has been rapid.
 - C. the human population was much larger than previous thought.
 - D. the human population has suffered repeated epidemics of obesity.
7. The half-life of ^{238}U is 4.46 billion years. If a rock had a million such atoms when it was formed, how many would be left after two half-lives (8.92 billion years)?
 - A. 1/4 of the original million, or 250,000 atoms
 - B. 1/2 of the original million, or 500,000 atoms
 - C. 2/3 of the original million, or 666,667 atoms
 - D. 3/4 of the original million, or 750,000 atoms

8. The most apparent change during the evolutionary history of *Homo sapiens* is traced in
 - A. walking upright.
 - B. loss of body hair.
 - C. shortening of the jaws.
 - D. remarkable increase in the brain size.
9. That all vertebrate animals have essentially the same type of skeleton is an example of _____ for evolution.
 - A. fossil evidence
 - B. anatomical evidence
 - C. biochemical evidence
 - D. biogeographical evidence
10. Opposable thumbs make grasping possible _____.
 - A. in all animals
 - B. only in primates
 - C. only in mammals
 - D. in knuckle-walking animals
11. The ability to learn in primates is primarily associated with _____.
 - A. good vision
 - B. walking erect
 - C. a large forebrain
 - D. a keen sense of smell
12. This hominid is dated as early as 2 million years ago, the name means "handy man," and is often found accompanied by tools.
 - A. *Homo habilis*
 - B. *Homo erectus*
 - C. *Homo sapiens*
 - D. *Homo afarensis*
13. All human races of today are one species because all races
 - A. look alike
 - B. are bipedal.
 - C. originated in Africa.
 - D. can interbreed and bear fertile offspring.
14. Which of the fossil men had cranial capacity near to modern man?
 - A. *Homo erectus*
 - B. *Homo habilis*
 - C. *Homo neanderthalensis*
 - D. *Australopithecus afarensis*
15. What is the major advantage of bipedal locomotion in human? It
 - A. increases speed.
 - B. reduces body weight.
 - C. provides better support to the body.
 - D. releases fore limbs for other purposes.
16. The theory of evolution indicates that
 - A. man evolved from monkeys.
 - B. monkeys evolved from men.
 - C. man evolved from dinosaurs.
 - D. man and apes had a common ancestor.
17. The surviving members of family homonidae are
 - A. *Homo habilis*.
 - B. *Homo erectus*.
 - C. *Homo sapiens*.
 - D. *Homo neanderthalensis*.
18. Fossil Lucy belongs to
 - A. Dryopithecus.
 - B. Ramapithecus.
 - C. Aegyptopithecus.
 - D. Australopithecus.
19. Evolution of man is believed to have taken place in
 - A. Asia.
 - B. Africa.
 - C. Australia.
 - D. Central America.

20. Which one of the following is closest relative of man?
 A. Gorilla
 B. Gibbon
 C. Orangutan
 D. Chimpanzee
21. Which one of the following was the first to stand bipedal movement?
 A. Ardipithecus
 B. *Homo erectus*
 C. Sahelanthropus
 D. Australopithecus
22. Which of the following primate had a brain about the same size as that of Lucy?
 A. Gorilla
 B. Bonobo
 C. Orangutan
 D. Chimpanzee
23. What is the mean size of a *Homo habilis* brain roughly?
 A. 300 cc.
 B. 450 cc.
 C. 500 cc.
 D. 650 cc.
24. To which species does Lucy belong?
 A. *Australopithecus africanus*
 B. *Australopithecus afarensis*
 C. *Australopithecus robustus*
 D. *Australopithecus aethiopicus*
25. The force that initiates evolution is _____.
 A. variation
 B. mutation
 C. extinction
 D. adaptation
26. The earliest geological time period among the following is _____.
 A. Jurassic
 B. Permian
 C. Cambrian
 D. Quaternary
27. An example of a homologous organ is
 A. leg of a dog, leg of a spider.
 B. wing of an insect, wing of a bird.
 C. the arm of a human, wing of a bird.
 D. flipper of a whale and insect's fore leg.
28. Which of the following can be determined by observing the embryos of vertebrates? The organisms
 A. share a common ancestry.
 B. belong to the same genus.
 C. are native to the same geographic areas.
 D. will grow into anatomically similar adults.
29. Which of the following pieces of evolution evidence deals with comparing similar structures in various species?
 A. Fossil record
 B. Comparing anatomy
 C. Comparing embryology
 D. Comparing biochemistry
30. Which of the following pieces of evolution evidence contain both homologous and vestigial structures?
 A. Fossil record
 B. Comparing anatomy
 C. Comparing embryology
 D. Comparing biochemistry
31. Which word is defined as the same structure in different species indicating a common ancestor?
 A. DNA
 B. Vestigial structures
 C. Analogous structures
 D. Homologous structures

32. What is suggested by the similarity of early embryos of different species of vertebrates?
- Recent common ancestry
 - Similar environments in the past
 - Evolution from a distant common ancestor
 - No evolutionary relationships between the groups
33. Some organisms that share a common ancestor have features that have different functions, but similar structures. These are known as
- fossil structures.
 - vestigial structures.
 - analogous structures.
 - homologous structures.
34. Two organisms that are closely related would have
- no proteins in common.
 - very similar DNA sequence.
 - exactly the same DNA sequences.
 - completely different DNA sequence.
35. Mutations are important because they bring about
- death of the organism in which they develop.
 - benefits for the individual, not for the population.
 - genetic similarity needed for a population to evolve.
 - genetic variation needed for a population to evolve.
36. If I wanted to look at DNA to study evolution, I am using what evidence?
- molecular
 - embryology
 - fossil record
 - comparative anatomy
37. Studying embryology helps scientists understand _____.
- how a species reproduces
 - the early stages of an organism's growth
 - where organisms migrate during their lives
 - how a species makes food through photosynthesis
38. When an eagle's wing and an ostrich's wing are compared, similar bone structures are discovered. They are
- cast fossils.
 - naturally selected.
 - analogous structures.
 - homologous structures.
39. Scientists compare DNA from living organisms to identify
- natural selection.
 - a fossil's location.
 - geographic isolation.
 - similarities between species.
40. Which would be considered homologous structures?
- the wing of a bat and the wing of an insect
 - bones in a bird's arm and bones in a frog's arm
 - a specific protein in yeast also found in rhesus monkeys
 - a permineralized bone of a woolly mammoth and original material of a woolly mammoth
41. Species that evolve in different locations but similar environments can appear similar. This is known as
- continental drift.
 - divergent evolution.
 - geographic isolation.
 - convergent evolution.
42. Which animal dominated in Palaeozoic era?
- Birds
 - Fishes
 - Reptiles
 - Mammals

43. In which period of Palaeozoic era first chordates appeared?
 A. Silurian
 B. Devonian
 C. Cambrian
 D. Ordovician
44. Fossilization occurs where
 A. animals are destroyed by scavengers.
 B. animals are destroyed by environment.
 C. animals are buried by natural processes.
 D. organisms are buried and preserved by natural processes.
45. The reptiles diversity occurred in which geologic period?
 A. Triassic
 B. Jurassic
 C. Permian
 D. Cretaceous
46. What term best describes the relationship between these forelimbs? They are



- A. vestigial.
 B. analogous.
 C. homologous.
 D. embryological.
47. The age of rock is calculated on the basis of
 A. type of fossils present.
 B. amount of lead present.
 C. number of strata present.
 D. amount of sulphur present.
48. Fossil is a
 A. stuffed animal.
 B. dead animal of the past.
 C. organic relic of the past.
 D. laboratory preserved animal.
49. The period of man in geological time is
 A. triassic.
 B. tertiary.
 C. cretaceous.
 D. quaternary.
50. Fossils are dated by
 A. stratigraphic position.
 B. amount of calcium residue.
 C. radioactive carbon content.
 D. association with other animals.

51. Analogous structures are
 - A. structurally similar.
 - B. functionally similar.
 - C. normally non- functional.
 - D. structurally and functionally similar.
52. Evolution is best defined as
 - A. struggle for existence.
 - B. descent of modification.
 - C. spontaneous generation.
 - D. inheritance of acquired characters.
53. Being all mammals whale, Dolphin, bat, monkey and horse have some important common characters ,but they also so conspicuous differences this is due to the phenomenon of

A. divergence.	C. convergence.
B. genetic drift.	D. normalisation.
54. Birds in geological development of earth arose in period

A. Jurassic	C. Carboniferous
B. Permian	D. Oligocene and Eocene
55. Reptiles where dominant during

A. Permian period.	C. Oligocene period.
B. Cambrian period.	D. Cretaceous period.
56. Which one of the following sets includes analogous organs only?
 - A. Wings of butterfly, sparrow and bat
 - B. Hands of man, monkey and Kangaroo
 - C. Hind legs of horse, grasshopper and bat
 - D. Mandibles of cockroach, mosquito and honey Bee
57. Which of the following would be easily fossilized?

A. Skin	C. Heart
B. Liver	D. Tooth
58. The process by which new species develop from the existing species is called

A. analogous.	C. homologous.
B. speciation.	D. genetic variation.
59. Which of the following is NOT a way in which fossils are formed?
 - A. From the soft parts of animals
 - B. From the hard parts of animals
 - C. When the conditions needed for decay are absent
 - D. When parts of the animal are replaced by other materials
60. Fossils provide evidence for evolution because we can
 - A. find out where organisms lived.
 - B. tell what animals may have eaten.
 - C. see how organisms have developed over time.
 - D. see extinct organisms and compare them to living species.