



Choose the best answer from the given alternatives

1. Why is it that mutations are considered as one of the raw materials of evolution?
  - A. They contribute to new variations in organisms
  - B. They are usually related to environment in which they appear
  - C. They are mostly beneficial to the environment in which they appear
  - D. They usually become the causes for species extinction
2. Which one of the following is consistent with understanding of human evolution?
  - A. Bipedalism was never important in human evolution
  - B. Larger brain size had no contribution to evolution of human species
  - C. Human ancestry has no relation whatsoever with that of the chimpanzees
  - D. Fossils of Lucy and Ardi provided evidence for human origin
3. What is the branch of biology that studies about the origin of and gradual changes of living things?
  - A. Microbiology
  - B. Evolution
  - C. Mutation
  - D. Genetics
4. Which of the following groups are believed to be the first photosynthetic organisms to evolve on Earth?
  - A. Green plants
  - B. Green algae
  - C. Blue green algae
  - D. Lichens
5. Which of the following factors brings about changes both during evolution and breeding of plants and animals?
  - A. Limited resources
  - B. Selection
  - C. Production of excess progeny
  - D. Competition
6. Which of the following reproductive isolating mechanisms keeps the horse and the donkey as two independent species?
  - A. Hybrid inviability
  - B. Hybrid infertility
  - C. Ecological isolation
  - D. Habitat isolation
7. Among the following four processes, identify the one that probably evolved before the other three?
  - A. Aerobic respiration
  - B. Anaerobic respiration
  - C. Oxidizing atmosphere
  - D. Photosynthesis
8. Which of the following is the most possible mode of evolution by which many species of Darwin 's finches evolved in the Galapagos islands?
  - A. Phyletic evolution
  - B. Divergent evolution
  - C. Convergent evolution
  - D. Sympatric evolution
9. Which of the following characteristics can show the evolutionary relationships among organisms?
  - A. Structure having similar functions
  - B. Presence of analogous structures
  - C. Presence of homologous structures
  - D. Structures having different origins
10. Which of the following species isolating processes could lead to the evolution of a new species by the mechanisms known as sympatric speciation?
  - A. A river that changed its course of many years
  - B. A new mountain range that was created many years ago
  - C. Populations of species having different breeding seasons
  - D. A land mass that separated two water bodies for many years
11. For which of the following can divergent evolution be taken as an alternative name?
  - A. Allopatric evolution
  - B. Sympatric speciation
  - C. Adaptive radiation
  - D. Disruptive selection
12. Which one of the following is the result of the similarity observed between the wings of a bird and a pterodactyl (extinct flying reptiles)?
  - A. Convergent evolution
  - B. stabilizing selection
  - C. Directional selection
  - D. Divergent evolution
13. Which one of the following modes of natural selection was responsible for the fast increase in the number of the black form of moth in Europe during industrial revolution?
  - A. Stabilizing selection
  - B. . Disruptive selection
  - C. Normalizing selection
  - D. Directional selection

14. Which of the following played an important role in the evolution of human being?
  - A. Emergence of wings in addition to limbs
  - B. Development of even toes in the forearms
  - C. Development of feathers and hollow bones
  - D. Development of opposable thumb to grasp
15. Which group of organisms is found at a lower level of evolution according to the modern principles of biology?
  - A. Protists
  - B. Fungi
  - C. Animals
  - D. Plants
16. Which of the following is NOT true about the nature of the first form of organism on earth? They were
  - A. Prokaryotic
  - B. Aerobic
  - C. Unicellular
  - D. anaerobic
17. Which of the following came first in the course of organic evolution?
  - A. Photosynthetic organisms
  - B. Free oxygen in the atmosphere
  - C. Land plants
  - D. Multicellular organisms
18. Animals without close evolutionary relations are sometimes seen to have similar structures adapted for the same function. Which evolutionary principle is illustrated by this observation?
  - A. Converging evolution
  - B. Diverging evolution
  - C. Sympatric evolution
  - D. Allopatric evolution
19. Which one of the following is most important for speciation to occur (2003 E.C)?
  - A. Hybridization among populations
  - B. Migration between populations
  - C. Isolation of one gene pool
  - D. Free flow of genes between
20. Which of the following fossils is the nearest to the common ancestor of the hominids and the apes?
  - A. *Homo habilis*
  - B. *Homo erectus*
  - C. *Ardipithecus animals*
  - D. *Australopithecus afarensis*
21. Which of the following ideas was NOT a part of Darwin's theory of evolution?
  - A. Over-reproduction
  - B. Use-and-disuse of body parts
  - C. Existence of heritable variation
  - D. Competition for scarce resources
22. To which genus of human-like organisms does Lucy belong (2004 E.C)?
  - A. The genus Homo
  - B. The genus Ardipithecus
  - C. The genus Sahelanthropus
  - D. The genus Australopithecus
23. Why fossils of soft-bodied organisms are usually relatively rare in the environment?
  - A. They all lived in environments where sedimentation did not occur
  - B. They were never common in environments in which they lived
  - C. They are generally small in size
  - D. Their bodies decompose readily
24. Carbon 14 has a half-life of about 5730 years. Suppose a fossil contain only 12% of the amount of carbon 14 normally present in living organisms, how old is the fossil?
  - A. 5730 years
  - B. 11460years
  - C. 17190 years
  - D. 22920 years
25. If a radioactive substance that weighs one kilogram has a half-life of 100 years what would be the percentage of the substance left after 300 years?
  - A. 50
  - B. 30
  - C. 25
  - D. 12.5
26. The half- life of carbon 14 is about 5730years. If a fossil is 17 years old, about 26. what percent of this original carbon 14 is present in the fossil (2006 E.C)?
  - A. 75%
  - B. 50%
  - C. 25%
  - D. 12.5%
27. If a substance that weighs 2000 grams and has a half-life of 100 years is left with only 250 grams, for how long has the radioactive decaying activity been undergoing?
  - A. 200 years
  - B. 250years
  - C. 300 years
  - D. 500 years
28. According to Lamarck's theory of evolution, what is the mechanism by which evolving organisms acquire new structures?
  - A. Mutation
  - B. Heredity variation
  - C. Use-and-disuse of parts of the body
  - D. Recombination of ancestral genes
29. Rats can be produced by keeping rags and grains at the corner of a room. Which of the following line of thinking supports this statement?
  - A. Darwinian evolution
  - B. Alternation of generation
  - C. Spontaneous generation
  - D. Sexual reproduction
30. What is the specific name of biological scientists who do research that tries to find evidence of life on other planets in the solar system?
  - A. Neurobiologists
  - C. Paleontologists

B. Astrobiologists

D. Biogeographers

31. What are the most likely causes of variations within species?

A. Mitosis and a sexual reproduction

C. Over population and over production

B. Vegetative propagation and cloning

D. Mutation and sexual reproduction

32. In which hominid species did scientist find the smallest brain size (cranial activity)?

A. *Homo sapiens*

B. *Homo erectus*

C. *Homo habilis*

D. *Homo neanderthals*

33. When two species are compared which of the following sources of evidence is least informative about the degree of relationships between species?

A. Nucleotide sequence of DNAs

C. Amino acid sequence of proteins

B. Glucose sequence of polysaccharides

D. DNA –DNA hybridization

34. What is the reproductive isolating mechanism called if two species of frogs do not interbreed because they cannot understand the mating time of one another (2005 E.C)?

A. Temporal isolation

B. Isolation by place

B. Seasonal isolation

D. Isolation by distance

34. What is the reproductive isolating mechanism called if two species of frogs do not interbreed because they cannot understand the mating calls?

A. Seasonal isolation

C. Temperature isolation

B. Behavioral isolation

D. Isolation by distance

35. Which of the following characteristics can show the evolutionary relationships among organisms?

A. Structures having similar functions

C. Structures having the same size

B. Structures having common origin

D. Structures having different origin

36. What do you call structures that have the same evolutionary but now are different in structure or have different functions ?

A. Indigenous

B. Endemic

C. Homologous

D. Analogous

37. Which of the following pairs are analogous structures?

A. Wing of a bird and wing of a butterfly

C. Front leg of a horse and a human arm

B. Wing of a bird and wing of a bat

D. Front leg of a frog and wing of a bat

38. What do you call structures that have the same evolutionary origin even though they may now have different structural make up or function?

A. Endemic

B. Analogous

C. Homologous

D.

39. Indigenous Which of the following conclusions can be drawn from the structural similarities observed between the flippers of whales and arms of human?

A. The human species began life in the ocean

B. The human species and whales share a common ancestry

C. Whales are older than the human species

D. Whales have evolved from early humans that went back to the ocean

40. Among the following fossil hominid species, which one is the oldest of all?

A. *Homo erectus*

C. *Australopithecus afarensis*

B. *Ardipithecus ramidus*

D. *Australopithecus africanus*

41. In the process of the evolution of life on earth, which of the following four processes evolved last?

A. Photosynthesis

B. Chemosynthesis

C. Aerobic respiration

D. Photo auto-tropism

42. Which one of the following is NOT important for evolutionary change of a population?

A. Over reproduction

C. Insufficient natural resource

B. Existence of heritable variation

D. Survival of all that are born

43. Among the following which one is the best criterion to show that the populations belong to the same species?

A. Morphological similarity

C. Physiological similarity

B. Inhabiting the same geographical area

D. Production of fertile offspring

44. What is the reason that Louis Pasteur used a swan-necked flask instead of straight necked one in his experiment designed to disprove the theory of spontaneous generation?

A. To allow free passage of air to the broth inside the flask

B. To prevent escape of any micro-organisms from the flask

- C. To keep the broth in the flask hot to kill micro-organisms  
D. To trap particles from the air that might enter the flask before reaching the broth
45. Which of the following pairs of molecules can give information about how much two species are evolutionary related to one another?  
A. DNA and proteins  
B. Carbohydrates and proteins  
C. Lipids and carbohydrates  
D. Starch and cellulose
46. If two species are known to belong to the same order, they must also belong to which taxonomic category?  
A. Class  
B. Family  
C. Species  
D. Genus
47. What kind of natural selection is at work in a situation where individuals at both extreme ends of the range get better survival advantages than those around the middle?  
A. Stabilizing  
B. Directional  
C. Disruptive selection  
D. Selection that removes the extremes
48. In which of geologic period does the fossil record show more diverse and relatively higher forms of organisms?  
A. Devonian  
B. Cretaceous  
C. Jurassic  
D. Permian
49. Which one of the following is an evolutionary requirement for two subpopulations of species to evolve into independent species?  
A. Free exchange of genes  
B. Free migration between populations  
C. Geographic isolation  
D. Absence of natural selection
50. Based on similarity in number of amino acids found in hemoglobin, which one of the following animals has closer phylogenetic relation to human beings?  
A. Chicken  
B. Horse  
C. Frog  
D. Gibbon
51. Which of the following did the early heterotrophs do that probably assisted the origin of autotrophs?  
A. The added oxygen and chlorophyll to the environment  
B. The added carbon dioxide to the environment  
C. They stored energy in the bonds of inorganic compounds  
D. They manufactured food from carbon dioxide and oxygen
52. Which of the following can be taken as an evidence for evolution from the field of plant and animal breeding?  
A. Artificial breeding always creates new species  
B. Artificial breeding only produces new organisms with higher yield  
C. Artificial breeding shows that natural selection can produce variations  
D. Artificial breeding can produce new variations in organisms  
E. According to theory of evolution as proposed by Charles Darwin,
53. which one of the following is the most important driving force of evolution?  
A. Mutation  
B. Genetic recombination  
C. Over-reproduction  
D. Natural selection
54. What does an etiologist study?  
A. Insect diet  
B. Soil type  
C. Fossil fuel  
D. Animal behavior
55. Which one of the following behavioral biologists is known for his study about imprinting behavior in animals?  
A. W. Kohler  
B. B.F. Skinner  
C. Ivan Pavlov  
D. Konrad Lorenz
56. Baby ostriches tend to follow the first moving object that they see as they hatch out of the eggs. What kind of animal behavior does this demonstrate?  
A. Positive taxis  
B. Positive kinesis  
C. Innate behavior  
D. Learned behavior
57. Behavior that is repeated on a daily basis is referred to as  
A. Lunar  
B. Imprinting  
C. Circadian  
D. Seasonal
58. An experimental animal stopped responding to a stimulus that has been repeated to many times. What type of learned behavior is this?  
A. Latent learning  
B. Imprinting  
C. Habituation  
D. Operant conditioning
59. Choose the one that had the LEAST contribution to human evolution?  
A. Development of bipedalism  
B. Adaptation to flight  
C. Attaining opposable thumb  
D. Increasing brain size

60. Which of the following is a learned behavior (2008E.C)?
- A. Suckling of the new born at mothers' breast
  - B. Salivation by conditioned dogs at the sound of a bell
  - C. Withdrawal of hands suddenly from hot objects
  - D. Blinking the eyes when something gets into them
61. Which of the following is an example of an orientational innate behavior?
- A. Kinesis in woodlice
  - C. Sudden withdrawal of limbs from hot object
  - B. Blinking of the eyes
  - D. Nest Building by weaver birds
62. In Pavlov's experiment on the classical conditioning of dogs, what does the reaction of to the sound of the bell represent?
- A. The conditioned stimulus
  - C. The unconditioned stimulus
  - B. The conditioned response
  - D. The unconditioned response
63. Suppose when you first enter a room you notice an unpleasant smell which you eventually forget about its presence, what is this behavior called?
- A. Latent
  - B. Insight learning
  - C. Habituation
  - D. Operant conditioning
64. Which of the following is true about an innate behavior?
- A. It is non-adaptive behavior
  - C. It is learned behavior
  - B. Members of a species behave similarly
  - D. It is environmentally determined
65. Which of the following is more true about the male of the honey bee?
- A. It has no father
  - B. It is diploid
  - C. It is sterile
  - D. It regulates the colony
66. In which of the activities of the honey bee colony are worker bees involved?
- A. Laying eggs
  - B. Reproductive functions
  - C. Serving as queens
  - D. Taking care of the larva
67. Which one of the following do bees use to inform other bees about the location and distance of new nectar discover?
- A. Pheromones
  - B. Buzzing noise
  - C. Waggle dance
  - D. Vibration of wings
68. Which of the following is NOT classified as a learned behavior?
- A. Insight
  - B. Latent
  - C. Innate
  - D. Conditioned
69. What do we call the learned behavior in a mouse that had just escaped from the mouth of a cat jumped violently at a sight touch by a trivial object?
- A. Latent learning
  - B. Conditioning
  - C. Sensitization
  - D. Imprinting
70. To what kind of animal behavior can a spinning of a web by spider be classified?
- A. Learned behavior
  - C. Instinctive behavior
  - B. Experimental behavior
  - D. Accidental behavior
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82. During seasons of reproduction, the males of some species of birds produce colorful feathers to attract females. What do etiologists call this method of communication in animals?  
 A. Visual      B. Chemical      C. Auditory      D. Touch
83. Why is it that the wood lice are typically found under logs, stones, bark and amongst leaf litters?  
 A. To be sheltered in a dry windy environment  
 B. To run away from the area where the air is humid  
 C. To make sure that they are in the hottest place all the time  
 D. To reduce the rate at which water is lost from their bodies
84. Wood lice increase their movement in different directions in response to increased light intensity. This is an example of which of the following?  
 A. Positive taxis      B. Kinesis      C. Negative taxis      D. Phototropism
85. It is said that a goat mother accepts and nurses as her own kid any young that she smells at a certain critical period, and rejects all others. This is an example of;  
 A. Habituation      B. Insight learning      C. Imprinting      D. Sensitization
86. Fixed action patterns are: A. Innate      B. Regular      C. Unvarying      D. all of the above
87. Among the following, which one is learned behavior?  
 A. Reflex action      B. Imprinting      C. Habituation      D. Fixed action pattern
73. In Pavlov's classical conditioning experiment on dogs, which one of the following is the unconditioned response  
 A. The sound of the bell before presenting food      C. The site of food from far away  
 B. The salivation of the dog at the site of food      D. The salivation of the dog at the sound of the bell
74. Which type of animal behavior happens without learning?  
 A. Innate      B. Insight      C. Latent      D. Conditioned
75. Which of the following activities of an organism do we call a behavior?  
 A. Reception of external stimuli      C. Responding to stimulus  
 B. Reception of internal stimuli      D. Lack of receptors to receive stimuli
76. Which of the following is necessary for learning to occur?  
 A. Punishment      B. Reward      C. Motivation      D. All of the above
77. A reflex action that involves internal organs such as the heart is referred to as?  
 A. Somatic reflex      B. External reflex      C. Spinal cord reflex      D. Autonomic reflex
78. All of the following statements about territoriality are true EXCEPT:  
 A. It is adaptive in that it tends to reduce conflict, and control population growth  
 B. It ensures the efficient use of environmental resources  
 C. It is not related to the animal's reproductive success      D. All are true statements
79. Which of the following organs serve as a coordinating system in the reflex action?  
 A. Spinal cord      B. Sense organs      C. Nerve cells      D. Muscle
80. To which category of behavior does the human behavior that involves the strengthening of existing responses or the formation of new responses to existing stimuli that occur because of practice or repetition belong?  
 A. Learned behavior      B. Innate behavior      C. Instinctive behavior      D. Inborn behavior

81. Which of the following is NOT grouped under genetically pre-programmed pattern of behavior?  
 A. Reflex action in humans C. Conditioned behavior  
 D. Orientational behavior D. Instinctive behavior
82. Courtship behavior  
 A. Enables members of species to recognize and mate with a member of the same species  
 B. is reflex C. is learned D. Both A and C are correct
83. Behavior:  
 A. is a pattern of activities of an organism in reacting to stimuli  
 B. may occur without stimuli  
 C. involves responses to external stimuli only  
 D. is basically the same in all organisms
84. A reflex involves C. Learning  
 A. Changing of behavior D. Trial and error  
 B. Fixed pathways of nervous system
85. The behavior known as ritual fighting is mostly associated with:  
 A. Territorial behavior C. Orientational behavior  
 B. Courtship behavior D. Social behavior
86. The larvae of most insects move away from light. What kind of behavior is this?  
 A. Kinesis B. Taxis C. Tropism D. Imprinting
87. The coordinated response of an organism to external and internal stimuli is called:  
 A. Fixed action B. Entropy C. Aggression D. Behavior
88. The biological clock of mammals is located in:  
 A. Prostate gland B. Hypothalamus C. Cerebrum D. Cerebellum
89. Worker bees are:  
 A. fertile female B. sterile females C. sterile males D. fertile males
90. Which of the following is NOT an example of innate behavior?  
 A. Operant conditioning B. Orientational behavior C. Reflex action D. Instinctive behavior
91. In the classical conditioning experiments on dogs made by Ivan Pavlov, which of the following was the conditioned response?  
 A. Salivation of dog for bell ringing  
 B. Presentation of meat by Pavlov  
 C. Ringing of bell by Ivan Pavlov  
 D. Salivation of dog for meat
92. Which of the following statement is not correct?  
 A. Knee jerk reflex is a somatic reflex C. Reflex actions are protective  
 B. Heart rate is controlled by autonomic reflexes D. Peripheral nervous system comprises of brain and spinal cord
93. In one of the following learned behaviors, a naturally occurring stimulus is associated with a conditioned stimulus.  
 A. Insight learning B. Sensitization C. Classical conditioning D. Habituation
94. Sneezing and shivering is an example of:  
 A. Imprinting B. Innate behaviors C. Reflexes D. Instinct behavior
95. On average, social behavior:  
 A. Decreases group survival C. Increases the number of deaths  
 B. Increases individual fitness D. Increases agonistic behavior
96. The way an organism reacts to stimuli in its environment is  
 A. Behavior B. learning C. conditioning D. imprinting
97. A decrease in response to the stimulus that neither rewards nor harms an animal is called  
 A. Instinct B. operant conditioning C. habituation D. classical conditioning
96. Insight learning is common among:  
 A. Dogs B. primates C. birds and insects D. birds only
97. Animal behaviors can evolve through natural selection because  
 A. what animal learns is incorporated into its genes

- B. all behavior is completely the result of genes
  - C. all behavior is completely the result of environmental influences
  - D. genes that influence behavior that increases an individual's fitness can be passed on to the next generation
98. A behavior that appears in its fully functional form the first time the animal performs it is
- A. Learned
  - B. habituated
  - C. imprinted
  - D. innate
99. A threatening behavior with which an animal exerts dominance over another is
- A. Migration
  - B. courtship
  - C. habituation
  - D. aggression
100. Each year, a bird called the American redstart travels from its winter home in South America to its nesting area in New York. This behavior is called:
- A. Migration
  - B. competition
  - C. imprinting
  - D. courtship
101. Which of the following is NOT a type of social behavior?
- A. Operant conditioning
  - B. territoriality
  - C. hunting in a park
  - D. courtship
102. A system of communication that uses meaningful sounds, symbols, or gestures according to specific rules is called:
- A. Behavior
  - B. language
  - C. competition
  - D. a signature
103. A rat that learns to press a button to get food is exhibiting
- A. Insight learning
  - B. classical conditioning
  - C. operant conditioning
  - D. habituation
104. A dog that always salivates at the ringing of a bell is exhibiting
- A. Insight learning
  - B. classical conditioning
  - C. operant conditioning
  - D. Habituation
105. A chimpanzee that stacks boxes in order to reach a banana hanging from a ceiling is showing
- A. Insight learning
  - B. classical conditioning
  - C. operant conditioning
  - D. habituation
106. A bird that stops responding to a repeated warning call when the call is not followed by an attack is showing:
- A. Insight learning
  - B. classical conditioning
  - C. operant conditioning
  - D. habituation
107. Which kind of behavior does NOT evolve learning?
- A. Habituation
  - B. Trial and error
  - C. Imprinting
  - D. Instinct
108. A male three-spined stickleback fish will attack male red-bellied sticklebacks and models of fishes that have a red underside. It will not attack males or models lacking the red underside. What can you conclude from the three-spined stickleback's behavior?
- A. The stimulus for an attack is a red underside
  - B. The stimulus for an attack is aggression
  - C. The stimulus for an attack is the presence of a fish with red fins
  - D. The stimulus for an attack is the presence of model
109. Which of the following is NOT an innate behavior?
- A. A dog looking for its food dish
  - B. A baby mammal sucking a milk
  - C. A spider spinning a web
  - D. A worm moving away from bright light