## English

1. Which of the following bonds will be most difficult to break?

(A) C–O
(B) C–C
(C) C–N
(D) C–S

**Correct Option(s): C**

## English

2. When two mutants having the same phenotype were crossed, the progeny obtained showed a wild-type phenotype. Thus, the mutations are

(A) non-allelic.
(B) allelic.
(C) segregating from each other.
(D) independently assorting.

**Correct Option(s): A**

## English

3. Which of the following processes does not take place in the 5′→3′ direction?

(A) DNA replication
(B) Transcription
(C) Nick translation
(D) RNA editing

**Correct Option(s): D**

## English

4. PCR based DNA amplification is an essential feature of which of the following combination of molecular markers?

(A) RFLP, AFLP and SSR.
(B) AFLP, SSR and RAPD.
(C) RFLP, RAPD and SSR.
(D) RAPD, AFLP and RFLP.

**Correct Option(s): B**

## English

5. Similarities in sequence and function of two proteins indicate that they are members of a family that share a common ancestor. If they are from different species, they are called

(A) homologs.
(B) orthologs.
(C) paralogs.
(D) proteologs.

**Correct Option(s): B**

## English

6. Riboflavin is

(A) Vitamin B1
(B) Vitamin B12
(C) Vitamin B6
(D) Vitamin B2

**Correct Option(s): D**

## English

7. Human bone marrow cells are

(A) Pluripotent stem cells
(B) Embryonic stem cells
(C) Multipotent stem cells
(D) Totipotent stem cells

**Correct Option(s): C**

## English

8. _____cause malaria and sleeping sickness

(A) Bacteria
(B) Viruses
(C) Protozoans
(D) None of these

**Correct Option(s): C**

## English

9. Which polymerase made widespread use of PCR possible:

(A) DNA polymerase I
(B) Thermus aquaticus (Taq) polymerase
(C) DNA polymerase III
(D) None of these

**Correct Option(s): B**

## English

10. Most of the neurons are_____

(A) Unipolar
(B) Bipolar
(C) Pseudounipolar
(D) Multipolar

**Correct Option(s): D**

## English

11. siRNA interferes at

(A) Transcription level
(B) Translation level
(C) DNA replication level
(D) Post-transcriptional level

**Correct Option(s): B**

## English

12. During DNA replication Okazaki fragments are formed in

(A) Leading strand
(B) Both the strands
(C) RNA transcript
(D) Lagging strand

**Correct Option(s): D**

## English

13. The limbless amphibian is?

(A) Glass snake
(B) Ichthyophis
(C) Hyla
(D) Salamander

**Correct Option(s): B**

## English

14. Leishmaniasis is caused by

(A) Bacteria
(B) Virus
(C) Protozoa
(D) None of these

**Correct Option(s): C**

## English

15. The vector of Chikungunya is

(A) Culex mosquito
(B) Anopheles mosquito
(C) Mansonia mosquito
(D) Aedes mosquito

**Correct Option(s): D**

## English

16. What is the animal symbol of W. W. F (World Wildlife Fund)?

(A) Red Panda.
(B) Giant Panda.
(C) Tiger.
(D) Kangaroo

**Correct Option(s): B**

## English

17. Mayr's biological concepts of species is mainly based on

(A) Morphological traits.
(B) Reproductive isolation.
(C) Modes of reproduction.
(D) Morphology and Reproduction.

**Correct Option(s): B**

## English

18. Which of the following enzymes is the first to mix with food in the digestive tract?

(A) Pepsin.
(B) Trypsin.
(C) Lipase.
(D) Ptyaline.

**Correct Option(s): D**

## English

19. A double stranded DNA has 30% cytosine. What is the percentage of adenine in it?

(A) 0.6
(B) 0.3
(C) 0.2
(D) 0.1

**Correct Option(s): C**

## English

20. Hardy-Weinberg equilibrium assumes significance for the following, except

(A) a large population
(B) random mating
(C) no natural selection
(D) genetic drift

**Correct Option(s): D**

## English

21. Which of the following types of tissue cannot utilize fats as an energy source?

(A) Adipose tissue
(B) Muscle
(C) Neural tissue
(D) Liver

**Correct Option(s): C**

## English

22. A strand of DNA with the sequence AACTTG will have a complimentary strand with the following sequence:

(A) CCAGGT
(B) AACTTG
(C) TTCAAG
(D) TTGAAC

**Correct Option(s): D**

## English

23. Open vascular system is usually found in _____

(A) Crabs
(B) Monkeys
(C) Crows
(D) Snakes

**Correct Option(s): A**

## English

24. Which among the following is a diploblastic organism?

(A) Hydra
(B) Crabs
(C) Squid
(D) Earthworm

**Correct Option(s): A**

## English

25. Which one of the following show complete metamorphosis in all three orders?

(A) Coleopterans, Dipterans and Hymenopterans
(B) Coleopterans, Hymenopterans and Orthopterans
(C) Dipterans, Lepidopterans and Hymenopterans
(D) Hymenopterans, Lepidopterans and Orthopterans

**Correct Option(s): A**

## English

26. The wings of birds and insects have the same function, but they do not have the same evolutionary origin. Bird and insect wings are

(A) Homologous
(B) Phylogenetic
(C) Analogous
(D) Binomial

**Correct Option(s): C**

## English

27. Amphibian oocytes remain for years in the diplotene stage of meiotic prophase. Resumption of meiosis is initiated by

(A) gonodatropic hormone.
(B) growth hormone.
(C) oestrogen.
(D) progesterone.

**Correct Option(s): D**

## English

28. The reptilian order Squamata includes

(A) crocodiles and alligators.
(B) the living fossil 'tuatara'.
(C) turtles and tortoises.
(D) snakes and lizards.

**Correct Option(s): D**

## English

29. Which one of the following is a uricotelic organism

(A) Reptiles
(B) Aquatic amphibians
(C) Mammals
(D) Bony fishes

**Correct Option(s): A**

## English

30. Examples for Arachnida

(A) Limulus, Palameneus, Lycosa, Collumbella, Ixodes, Chorioptes
(B) Limulus, Glassina, Lepisma, Archaeranea, Ixodes, Cicadas
(C) Xenopsella, Palameneus, Lycosa, Collumbella, Photinus, Cicadas
(D) Limulus, Palameneus, Lycosa, Archaeranea, Ixodes, Chorioptes

**Correct Option(s): D**

## English

31. Environmental control of sex determination is seen in

(A) Malandrium
(B) Drosophila
(C) Bonelia
(D) Apes indica

**Correct Option(s): C**

## English

32. TATA boxes and pribnow boxes are components of

(A) Operators
(B) Promoters
(C) Enhancers
(D) Activators

**Correct Option(s): B**

## English

33. Sleeping sickness is caused by the vector

(A) Phlebotomus
(B) Simulium
(C) Xenopsylla
(D) Glossina

**Correct Option(s): D**

## English

34. List out the subphyla of chordata

(A) Vertebrate, protochordata
(B) Protochordata, notochordata, cephalochordata
(C) Urochordata, cephalochordate, vertebrate
(D) Vertebrate, notochordata

**Correct Option(s): C**

## English

35. BLAST uses a

(A) Substitution matrix
(B) Hashing procedure
(C) Ktups
(D) Scored matrix

**Correct Option(s): A**

## English

36. Which one of the following elements is essentially required for blood coagulation?

(A) Calcium
(B) Sodium
(C) Potassium
(D) Iron

**Correct Option(s): A**

## English

37. The 'surra disease' in cattle is transmitted by _____

(A) Horse Fly
(B) Sand Fly
(C) Warble Fly
(D) Mosquito

**Correct Option(s): A**

## English

38. _____is a tapeworm causing parasitic infestations in dogs.

(A) E. granulosus
(B) T. saginata
(C) T. solium
(D) Diphilabothrium

**Correct Option(s): A**

## English

39. Grave's disease is associated with malfunctioning of:

(A) Pituitary
(B) Thyroid
(C) Parathyroid
(D) Pancreas

**Correct Option(s): B**

## English

40. Which one of the following is an exotic Indian fish

(A) Heteropneustes fossilis
(B) Cyprinus carpio
(C) Catla catla
(D) Labeo rohita

**Correct Option(s): B**

## English

41.

Match the following

| | | | |
|---|---|---|---|
| 1 | Phylogenetic species concept | a | Defines that a species is distinct from other lineages if it has its own evolutionary tendencies and historical fate. |
| 2 | Ecological species concept | b | Defines species as, "Groups of populations that can actually or potentially exchange genes with one another and that are reproductively isolated from other such groups." |
| 3 | Evolutionary species concept | c | For a species to maintain a particular niche in an ecosystem and its fitness relative to other species, that species must be constantly undergoing adaptive evolution because the organisms with which it is coevolving are themselves undergoing adaptive evolution. |
| 4 | Red queen hypothesis | d | Advocates that members of a single species are identified by a unique combination of characters. |
| 5 | Biological species concept | e | Each species occupies a distinct ecological niche, a unique set of habitat requirements |

(A) 1-d, 2-e, 3-a, 4-c, 5-b
(B) 1-e, 2-a, 3-c, 4-b, 5-d
(C) 1-a, 2-c, 3-b, 4-d, 5-e
(D) 1-b, 2-d, 3-e, 4-a, 5-c

**Correct Option(s): A**

## English

42. How do r-selected species typically respond to changes in environmental conditions?
(A) They exhibit stable populations with predictable growth patterns
(B) They show rapid population growth and high variability in population size
(C) They invest heavily in each offspring to ensure survival
(D) They have long developmental periods and delayed reproduction

**Correct Option(s): B**

## English

43. In the context of K-selection, what is a key characteristic of K-selected species?
(A) High reproductive rates and low competition
(B) High parental care and investment in fewer offspring
(C) Short lifespans and rapid growth
(D) Low survival rates and high population fluctuation

**Correct Option(s): B**

## English

44. In what geological period did most phyla on Earth arise?
(A) Cambrian
(B) Carboniferous
(C) Ordovician
(D) Permian

**Correct Option(s): A**

## English

45. Which of the following is a common reason for infanticide in certain animal species?
(A) To reduce competition for food within the group
(B) To ensure the survival of the strongest offspring
(C) Because females are not receptive to mating while caring for their young
(D) To maintain the population size within the habitat

**Correct Option(s): C**

## English

46. What is tetraploidy?

(A) A condition where the offspring has three copies of each chromosome, more common in animals than plants

(B) The fusion of two unreduced gametes, resulting in an organism with four copies of each chromosome

(C) A genetic mutation that results in an organism losing chromosomes

(D) A type of cell division error leading to a haploid genome

**Correct Option(s): B**

## English

47. Which of the following best describes Chargaff's rule in DNA?

(A) The amount of adenine (A) always equals the amount of thymine (T), and the amount of guanine (G) always equals the amount of cytosine (C)

(B) The amount of adenine (A) always equals the amount of guanine (G), and the amount of thymine (T) always equals the amount of cytosine (C)

(C) The percentage of purines (A and G) always equals the percentage of pyrimidines (T and C) in RNA

(D) The sequence of nucleotides is always identical in both strands of DNA

**Correct Option(s): A**

## English

48. Selection that lowers an individual's own fitness but enhances that of a relative is known as:

(A) Kin selection

(B) Altruism

(C) Inclusive fitness

(D) Hamilton's rule

**Correct Option(s): A**

## English

49. CENP-A is a variant of which histone that combines with other histones to form a unique type of nucleosome located at the centromere?

(A) Histone H1

(B) Histone H2B

(C) Histone H3

(D) Histone H4

**Correct Option(s): C**

## English

50. The tendency for endothermic animals to be bigger in cold areas is known as:

(A) Cope's rule

(B) Bergmann's rule

(C) Allen's rule

(D) Leibig's rule

**Correct Option(s): B**