

## **Biology 2012**

**1. Pond is an example of which ecosystem?**

- (a) Natural (b) Artificial
- (c) Forest (d) None of these

**Ans. (a)**

**2. The ecological niche of population is a**

- (a) geographical area that it covers
- (b) place where it lives
- (c) set of conditions and resource it uses
- (d) none of these

**Ans. (c)**

**3. Mendel's dihybrid cross ratio is**

- (a) 1:2:1 (b) 9:3:3:1
- (c) 9:3:4 (d) 1:1

**Ans. (b)**

**4. Parachute mechanism of seed dispersal occurs in**

- (a) sunflower (b) Calotropis
- (c) mango (d) apple

**Ans. (b)**

**5. Hand of man, wing of bat and flipper of seal represent**

- (a) vestigial organs
- (b) analogous organs
- (c) evolutionary organs
- (d) homologous organs

**Ans. (d)**

**6. If an organism is crossed with homozygous recessive individual, it is called**

- (a) back cross (b) test cross
- (c) simple cross (d) monohybrid cross

**Ans. (b)**

**7. Which is correct for the structure of cell wall of bacteria and fungi?**

- (a) Both are made up of cellulose
- (b) Both have mucopolysaccharide
- (c) Both are made up of N-acetylglucosamine
- (d) None of these

**Ans. (c)**

**8. Photorespiration takes place only in**

- (a) lysosomes of plant cell
- (b) green parts of the plant
- (c) mitochondria of plant cell
- (d) none of these

**Ans. (b)**

**9. Nitrogen fixation means:**

- (a)  $N_2$  changes in  $NO_3$
- (b)  $N_2$  changes in  $NH_3$
- (c)  $NO_2$  changes into nitrates
- (d) none of these

**Ans. (b)**

**10. In a pond ecosystem, benthos means**

- (a) primary consumers in the depth of a poiid
- (b) virus
- (c) zooplankton on the water surface
- (d) bacteria

**Ans. (a)**

**11. There are special proteins that help to open up DNA double helix in front of the replication fork. These protein are**

- (a) DNA ligase (b) DNA gyrase
- (c) DNA polymerase I (d) none of these

**Ans. (b)**

**12. Peripatus is known as a connecting link, because it has the characters of both**

- (a) Ayes and Fishes
- (b) Reptiles and Birds
- (c) Fishes and Amphibians
- (d) Arthropoda and Annelids

**Ans. (d)**

**13. In which segment the clitellum is present in earthworm?**

- (a) 16 segments (b) 17-19 segments
- (c) 14-16 segments (d) 5-6 segments

**Ans. (c)**

**14. Which of the following is absent in the mouth part of housefly?**

- (a) Labrum (b) Epipharynx
- (c) Mandibles (d) Maxillary palps

**Ans. (c)**

**15. The colour of the body in earthworm is brown due to**

- (a) porphyrin (b) haemoglobin
- (c) blood Cd) haemocyanin

**Ans. (a)**

**16. The egg found in monotremata is**

- (a) microlecithal (b) mesolecithal
- (c) macrolecithal (d) none of these

**Ans. (c)**

**17. Which hormone causes stunted growth in pea?**

- (a) Gibberellic acid (b) Auxin
- (c) Cytokinin (d) Ethylene

**Ans. (d)**

**18. In five kingdom classification of Whittaker, eukaryotes were assigned to**

- (a) 3 of 5 kingdoms (b) 2 of 5 kingdoms
- (c) 4 of 5 kingdoms (d) all the 5 kingdoms

**Ans. (d)**

**19. Which is responsible for recycling of material?**

- (a) Bacteria (b) Algae
- (c) Fungi (d) Virus

**Ans. (a)**

**20. Which is following group of plant can grow in N<sub>2</sub> deficient soil?**

- (a) Bryophytes (b) Algae
- (c) Insectivorous (d) Pteridophytes

**Ans. (c)**

**21. Which region is responsible for origin of rhizoids in Funaria?**

- (a) Lateral region (b) Dorsal region
- (c) Ventral region (d) Basal region

**Ans. (d)**

**22. Powdery mildews of crops are caused by**

- (a) basidiomycetes (b) phycomycetes
- (c) ascomycetes (d) eumycocetes

**Ans. (c)**

**23. The codons, causing chain termination are**

- (a) AGT, TAG, UGA (b) UAG, UGA, UAA  
(c) TAG, TAA, TGA (d) GAT, AAT, AGT

**Ans. (b)**

**24. Biological concept of species is mainly based on**

- (a) methods of reproduction only  
(b) reproductive isolation  
(c) morphological features only  
(d) none of these

**Ans. (b)**

**25. The organism which carries a disease from one organism to another is called?**

- (a) Parasite (b) Host  
(c) Vector (d) None of these

**Ans. (c)**

**26. The morphine obtained from opium is a**

- (a) tannin (b) alkaloids  
(c) gums (d) latex

**Ans. (b)**

**27. Hybrid vigour is mostly due to**

- (a) superiority of all the genes  
(b) homozygosity of pure characters  
(c) heterozygosity  
(d) none of these

**Ans. (c)**

**28. Flowers and lateral branches arise from the**

- (a) lateral buds (b) lenticles  
(c) stomata (d) cuticle

**Ans. (a)**

**29. Chiasma shows the sites of**

- (a) spindle formation (b) synapsis  
(c) crossing over (d) none of these

**Ans. (c)**

**30. The process of cytokinesis refers to the division of**

- (a) nucleus (b) chromosomes  
(c) cytoplasm (d) none of these

**Ans. (c)**

**31. Which of the following organelle does not contain RNA?**

- (a) Chromosome (b) Plasmalemma
- (c) Nucleolus (d) Ribosome

**Ans. (b)**

**32. Arachidonic acid is**

- (a) non-essential fatty acid (b) essential fatty acid
- (c) polyunsaturated fatty acid (d) both b' and 'c'

**Ans. (b)**

**33. Which of the following is polymerized to form proteins?**

- (a) Protein (b) Carbohydrates
- (c) Amino acid (d) Muramic acid

**Ans. (c)**

**34. All enzymes are basically**

- (a) carbohydrates (b) steroids
- (c) proteins (d) lipo-proteins

**Ans. (c)**

**35. The nucleus is separated from surrounding cytoplasm by a nuclear membrane, which is**

- (a) single layered without pores
- (b) double layered with pores
- (c) single layered with pores
- (d) double layered without pores

**Ans. (b)**

**36. Which organ has a single unit membrane?**

- (a) Lysosome (b) Mitochondria
- (c) Golgi body (d) Nucleolus

**Ans. (a)**

**37. Which of the following animal has a notochord throughout its life?**

- (a) Fish (b) Bird
- (c) Snake (d) Amphioxus

**Ans. (d)**

**38. Piercing and sucking mouth parts are found in**

- (a) mosquitoes (b) housefly
- (c) butterfly (d) ticks

**Ans. (a)**

**39. When the number of organisms at successive levels are plotted they assume the shape of a pyramid. This is called the pyramid of**

- (a) Biomass (b) Number
- (c) Energy (d) None of these

**Ans. (b)**

**40. Effect of pollution is on**

- (a) crossing over (b) ecological balance
- (c) linkage (d) mutation

**Ans. (b)**

**41. Deforestation causes**

- (a) thermal pollution (b) noise pollution
- (c) soil erosion (d) none of these

**Ans. (c)**

**42. A thin film of water is held by the soil particles under the influence of internal attractive force. It is called**

- (a) hygroscopic water (b) gravitational water
- (c) combined water (d) capillary water

**Ans. (a)**

**43. Pneumatophores are usually present in**

- (a) Murrya (b) Eichhomia
- (c) Avicinnia (d) none of these

**Ans. (c)**

**44. Balloon like outgrowth of parenchyma into the lumen of vessels, is known as**

- (a) tyloses (b) tunica
- (c) corpus (d) none of these

**Ans. (a)**

**45. In some plants the style is shorter. But in some others, it is longer than the stamens. This condition is called**

- (a) homogamy (b) homostyly
- (c) heterostyly (d) none of these

**Ans. (c)**

**46. Interferon is**

- (a) bacteria (b) anti-viral
- (c) anti-algal (d) anti-bacterial

**Ans. (b)**

**47. Bacterium have flagella with all over: body is known as**

- (a) peritrichous (b) amphitrichous
- (c) monotrichous (d) none of these

**Ans. (a)**

**48. Helotism is a term used for the symbio-.sis of**

- (a) algae and bacteria
- (b) algae and bryophytes
- (c) algae and pteridophytes
- (d) algae and fungi

**Ans. (d)**

**49. In Dryopteris the opening mechanism of sporangium is effectively operated by**

- (a) stalk (b) stomium
- (c) annulus (d) none of these

**Ans. (b)**

**50. In DNA, when AGCT occur, their association is as per which of the following pair?**

- (a) AG-CT (b) AC-GT
- (c) AT-GC (d) All of these

**Ans. (c)**

**51. Anus is absent in**

- (a) Unio (b) Pheretima
- (c) Periplaneta (d) Fasciolci

**Ans. (d)**

**52. The vegetation of Rajasthan is**

- (a) xerophytic (b) deciduous
- (c) hydrophytic (d) arctic

**Ans. (a)**

**53. In food chain, lion is a**

- (a) tertiary consumer
- (b) secondary consumer
- (c) primary consumer
- (d) none of these

**Ans. (a)**

**54. Agricultural chemicals include**

- (a) promotors (b) pesticides
- (c) fertilizers (d) all of these

**Ans. (c)**

**55. Biological equilibrium is found among the**

- (a) producers, consumers and decom posers
- (b) producers and consumers



- (c) producers and decomposers
- (d) none of these

**Ans. (a)**

**56. Light energy in photosynthesis is utilized in**

- (a) H<sub>2</sub>O converted into H<sub>2</sub>
- (b) ADP converted into ATP
- (c) ATP converted into ADP
- (d) none of these

**Ans. (b)**

**57. Nitrates are converted into N<sub>2</sub> by**

- (a) N<sub>2</sub> fixing bacteria
- (b) sulphur fixing bacteria
- (c) denitrifying bacteria
- (d) none of these

**Ans. (c)**

**58. Genetic dwarfness can be overcome by treating with**

- (a) cytokinin (b) auxins
- (c) gibberellins (d) ethylene

**Ans. (c)**

**59. The nephridia, in earthworm, are analogous to**

- (a) gills of prawn
- (b) trachea of insects
- (c) nematoblasts of Hydra
- (d) flame cells of Planaria

**Ans. (d)**

**60. Which special feature present in slime moulds?**

- (a) Capsule (b) Capillitium
- (c) Clusters (d) None of these

**Ans. (b)**

**61. Aggregate fruit develops from**

- (a) multicarpellary, apocarpous ovary
- (b) multicarpellary ovary
- (c) multicarpellary, syncarpous ovary
- (d) monocarpellary ovary

**Ans. (a)**

**62. Respiratory quotient (R.Q.) during early stages of germination of castor seed is**

- (a) one (b) zero
- (c) more than one (d) less than one

**Ans. (a)**

**63. In DNA helix, cytosine is paired with guanine by**

- (a) three hydrogen bonds
- (b) two hydrogen bonds
- (c) single hydrogen bond
- (d) covalent bond

**Ans. (b)**

**64. High content of lysine is present in**

- (a) wheat (b) apple
- (c) maize (d) banana

**Ans. (a)**

**65. In a pond ecosystem the pyramid of biomass is always**

- (a) irregular (b) inverted
- (c) upright (d) none of these

**Ans. (b)**

**66. Members of phylum Porifera are**

- (a) exclusively marine animals
- (b) exclusively fresh water animals
- (c) mostly fresh water animals but few are marine animals
- (d) mostly marine animals but few are fresh water animals

**Ans. (d)**

**67. Hydra recognises its prey by**

- (a) rhiptocyst
- (b) some special organs
- (c) chemical stimulus of prey
- (d) mechanical stimulus of prey

**Ans. (a)**

**68. Shell of mollusc is produced by its**

- (a) radula (b) thorax
- (c) mantle (d) abdomen

**Ans. (c)**

**69. Asymmetry in gastropoda is due to**

- (a) torsion (b) coiling
- (c) twisting (d) none of these

**Ans. (c)**

**70. The joint of femur, with pelvic girdle, is**

- (a) hinge joint
- (b) pivot joint
- (c) non-movable joint
- (d) ball and socket joint

**Ans. (d)**

**71. Which of the following is the part of mid brain of rabbit?**

- (a) Diencephalon (b) Cerebrum
- (c) Corpora quadrigemina (d) None of these

**Ans. (c)**

**72. Which of the following is a motor nerve?**

- (a) Auditory (b) Abducens
- (c) Optic nerve (d) Trigeminal nerve

**Ans. (b)**

**73. Which of the following is called emergency gland of the body?**

- (a) Testis (b) Thymus
- (c) Adrenal (d) Pituitary

**Ans. (c)**

**74. Which of the following is both exocrine and endocrine gland**

- (a) Liver (b) Pancreas
- (c) Thyroid (d) Adrenal

**Ans. (b)**

**75. Corpus luteum is developed from**

- (a) oocyte (b) nephrostome
- (c) graffian follicle (d) none of these

**Ans. (c)**

**76. In most mammals, the testes are located in scrotal sac for**

- (a) spermatogenesis
- (b) sex differentiation
- (c) more space to visceral organs
- (d) independent functioning of kidney

**Ans. (a)**

**77. Third cleavage of frog's development is**

- (a) equatorial (b) vertical
- (c) latitudinal (d) none of these

**Ans. (c)**

**78. Which of the following is a transparent tissue?**

- (a) Tendon (b) Hyaline cartilage
- (c) Fibrous cartilage (d) All of these

**Ans. (b)**

**79. Which of the following are not true cells in the blood**

- (a) Platelets (b) Monocytes
- (c) Neutrophils (d) Basophils

**Ans. (a)**

**80. Vitamin D is synthesised in skin, by the action of sunlight on**

- (a) cholesterol
- (b) seven-hydroxy-cholesterol
- (c) cephancholesterol
- (d) all of these

**Ans. (b)**

**81. In which animal, diaphragm has no role in respiration?**

- (a) Frog (b) Rat
- (c) Camel (d) Rabbit

**Ans. (a)**

**82. The area of inner surface of bronchiole is**

- (a) 1m (b) 10m
- (c) 100 m<sup>2</sup> (d) 1000 m

**Ans. (c)**

**83. During the process of blood coagulation, vitamin K helps in**

- (a) the formation of prothrombin
- (b) the formation of thromboplastin
- (c) the conversion of fibrinogen into fibrin
- (d) the conversion of prothrombin into thrombin

**Ans. (a)**

**84. The heart muscles are**

- (a) striated and involuntary
- (b) striated and voluntary
- (c) smooth and involuntary
- (d) non-striated and involuntary

**Ans. (a)**

**85. Which of the following amino acids is present in ornithine cycle?**

- (a) Valine and cystine
- (b) Arginine and citrulline
- (c) Glycine and methionine
- (b) None of these

**Ans. (b)**

**86. The joint of radio-ulna with the upper arm is**

- (a) hinge joint (b) pivot joint
- (c) socket joint (d) none of these

**Ans. (a)**

**87. Haversian canals are present in**

- (a) bone marrow (b) hyaline cartilage
- (c) bone matrix (d) calcified cartilage

**Ans. (a)**

**88. Law of segregation of gametes was proposed by**

- (a) Mendel (b) de Vries
- (c) Robert Hook (d) Huxley

**Ans. (a)**

**89. Which of the following evidences does not favour the Lamarckian concept of inheritance of acquired characters?**

- (a) Absence of limbs in snakes
- (b) Presence of webbed toes in aquatic birds
- (c) Melanization in peppered moth
- (d) Lack of pigment in cave-dwelling animals

**Ans. (c)**

**90. The most important example of point mutation is found in a disease called**

- (a) thalassemia (b) night blindness
- (c) Down's syndrome (d) sickle cell anaemia

**Ans. (d)**

**Directions for Q. 91. to Q. 100 :** In each of the following questions, a statement of Assertion (A) is given followed by a corresponding statement of Reason (R) Just below it. Of the statements, mark the correct answer as:

- (a) If both Assertion and Reason are true and Reason is correct explanation of Assertion
- (b) If both Assertion and Reason are true but Reason is not the correct explanation of Assertion (c) If Assertion is true but Reason is false
- (d) If both Assertion and Reason are false

**91. Assertion: Agricultural output increased several times after introduction of DDT. Reason : DDT was the first insecticide used on a wide scale.**

- (a) A (b) B
- (c) C (d) D
- (e) E

**Ans. (a)**

**92. Assertion Diabetes insipidus is marked by excessive urination and too much thirst of water. Reason : Anti-diuretic hormone (ADH) is secreted by the posterior lobe of pituitary gland.**

- (a) A (b) B
- (c) C (d) D
- (e) E

**Ans. (b)**

**93. Assertion: Coacervates are believed to be the precursors of life. Reason: Coacervates were self-duplicating aggregates of proteins surrounded by lipid molecules.**

- (a) A (b) B
- (c) C (d) D
- (e) E

**Ans. (c)**

**94. Assertion: Tapeworm roundworm and pinworm are endoparasites of human intestine. Reason: Improperly cooked food is the source of intestinal infections.**

- (a) A (b) B
- (c) C (d) D
- (e) E

**Ans. (d)**

**95. Assertion: Fish meal is a rich source of protein for cattle and poultry. Reason: Fish meal is produced from non-edible parts of fishes like fins, tail etc.**

- (a) A (b) B
- (c) C (d) D
- (e) E

**Ans. (c)**

**96. Assertion :** Animals adopt different strategies to survive in hostile environment. **Reason:** Praying mantis is green in colour which merges with plant foliage.

- (a)A (b)B
- (c)C (d)D
- (e) E

**Ans. (b)**

**97. Assertion:** Among the primates, chimpanzee is the closest relative of the present day humans. **Reason:** The banding pattern in the autosome numbers 3 and 6 of man and chimpanzee is remarkably similar.

- (a)A (b)B
- (c)C (d)D
- (e)E

**Ans. (a)**

**98. Assertion :** Dope test is used to estimate the level of blood alcohol by analysing the breath of persons drinking alcohol. **Reason :** A drunken person usually feels tense and less talkative.

- (a)A (b)B
- (c)C (d)D
- (e) E

**Ans. (d)**

**99. Assertion :** The honey bee queen copulates only once in her life time. **Reason:** The honey bee queen can lay fertilized as well as unfertilized eggs.

- (a)A (b)B
- (c)C (d)D
- (e)E

**Ans. (b)**

**100. 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)A (b)B
- (c)C (d)D
- (e) E

**Ans. (d)**

