

## ZOOLOGY

1. Spermiogenesis is the process of transformation of
  - A. Spermatogonium into sperm
  - B. Spermatid into sperm
  - C. Spermatogonium into spermatid
  - D. Spermatocytes to sperm
2. The foetal membrane which protects the embryo from drying up is the
  - A. Amnion
  - B. Chorion
  - C. Allantois
  - D. Yolk sac
3. Biogenetic law was proposed by
  - A. Malpighi
  - B. Von Baer
  - C. Weismann
  - D. Haeckel
4. When the coelom originates from archenteron, it is called
  - A. Enterocoel
  - B. Schizocoel
  - C. Pseudocoel
  - D. True coelom
5. Inner lining of buccal cavity is derived from
  - A. Ectoderm
  - B. Mesoderm
  - C. Endoderm
  - D. All of these
6. Which of the following stays longest in our stomach?
  - A. Food rich in starch
  - B. Food rich in fat
  - C. Food rich in protein
  - D. Fruits and vegetables
7. Leydig's interstitial cells are found in
  - A. Ovary
  - B. Intestine
  - C. Testes
  - D. Heart

8. Respiratory movements are under the control of
- A. Medulla oblongata
  - B. Cerebellum
  - C. Cerebrum
  - D. Crura cerebri
9. Corneal grafts are generally not rejected by the recipient because cornea is
- A. Non cellular
  - B. Non vascularised
  - C. Non living
  - D. Non proteinaceous
10. The neurogenic heart is found in
- A. Cockroach
  - B. Bird
  - C. Man
  - D. Frog
11. Which of the following is termed 'molecular scissors'?
- A. Taq polymerase
  - B. Recombinant DNA
  - C. Restriction endonuclease
  - D. None of these
12. Which one of the following is the most suitable ingredient of contraceptive pills?
- A. Thyroxine
  - B. Oxytocin
  - C. Progesterone
  - D. Oestrogen
13. 'Bt' of Bt cotton stands for
- A. *Bacillus tomentosa*
  - B. *Bacillus thuringiensis*
  - C. Biotechnologically improved cotton
  - D. Better type of cotton
14. Which enzyme is necessary for PCR?
- A. RNA polymerase
  - B. Endonuclease
  - C. Taq polymerase
  - D. Ribonuclease

15. A nonsense or termination codon is
- A. CCC
  - B. UAA
  - C. GCG
  - D. AUG
16. Cancer cells undergo
- A. Angiogenesis
  - B. Metastasis
  - C. Both (A) and (B)
  - D. None of the above
17. A tumor suppressor gene-
- A. Prevents cancer
  - B. Inhibits cell division
  - C. Opposes oncogenes
  - D. Does all the above
18. Leukemia is
- A. Cancer of white blood cells
  - B. Cancer of red blood cells
  - C. Cancer of platelets
  - D. Cancer of liver
19. Loop of Henle is found in
- A. Kidney
  - B. Heart
  - C. Lung
  - D. Liver
20. Jawless vertebrates are the members of
- A. Agnatha
  - B. Gnathostomata
  - C. Urochordata
  - D. Cephalochordata
21. The example of a motor nerve is
- A. Optic
  - B. Vagus
  - C. Oculomotor
  - D. Olfactory

22. Diabetes insipidus is characterised by
- A. Low level of urination
  - B. High level of urination
  - C. Low urination & dysentery
  - D. Low urination with general weakness
23. Thymus secretes
- A. Thyroxin
  - B. Thymosin
  - C. Parathormone
  - D. Vasopressin
24. Members of phylum protozoa may bear
- A. Pseudopodium
  - B. Pseudopodia or flagella
  - C. Pseudopodia or flagella or cilia
  - D. Cuticle
25. Excretory organ of cockroach is
- A. Malpighian tubules
  - B. Green gland
  - C. Flame cell
  - D. Stigma
26. Which of the following is not hormone
- A. Auxin
  - B. Cytokinin
  - C. Myoglobin
  - D. Gibberellin
27. Haematopoiesis takes place in
- A. Heart
  - B. Bone marrow
  - C. Digestive gland
  - D. Liver

28. Vaccines may be administered through
- A. Oral route
  - B. Parenteral route
  - C. Subcutaneous route
  - D. All of the above
29. Blood transfusion may transmit diseases like
- A. Malaria
  - B. AIDS
  - C. Viral hepatitis
  - D. All of the above
30. Which one of the following agents may cause cancer?
- A. Coal tar
  - B. Cigarette smoke
  - C. Mustard gas
  - D. All of the above

**BOTANY**

31. Which of the following bacteria is used as the main source of biopesticide?
- (A) *Bacillus megaterium*
  - (B) *Bacillus subtilis*
  - (C) *Bacillus cereus*
  - (D) *Bacillus thuringiensis*
32. Which of the following is not a part of the innermost whorl of the flower?
- (A) Pistil
  - (B) Style
  - (C) Stamens
  - (D) Stigma
33. In enveloped viruses the nucleocapsid is surrounded by a membranous covering which is made up of:
- (A) Lipoprotein
  - (B) Protein
  - (C) Sterols
  - (D) Amino sugars
34. Cells of *Spirogyra* characteristically possess:
- (A) Spindle-shaped chloroplast
  - (B) Star-shaped chloroplast
  - (C) Cup-shaped chloroplast
  - (D) Ribbon-shaped spirally arranged chloroplast
35. Which of the following is *not applicable* to eukaryotic cells?
- (A) Presence of nuclear membrane
  - (B) Presence of one or more chromosomes
  - (C) Presence of membrane bound organelles

(D) Absence of nuclear membrane

36. The protonema is a stage in the life cycle of:

- (A) *Funaria*
- (B) *Fusarium*
- (C) *Fucus*
- (D) *Ficus*

37. All of the following are heterosporous except:

- (A) *Marselia*
- (B) *Pinus*
- (C) *Dropteris*
- (D) *Selaginella*

38. Hypanthodium is the type of inflorescence characteristically found in:

- (A) Pineapple
- (B) Fig
- (C) Sunflower
- (D) Pea

39. Which of the following is the characteristic fruit of the family Fabaceae?

- (A) Nut
- (B) Legume
- (C) Siliqua
- (D) Bery

40. Which of the following enzymes synthesizes a complementary strand of mRNA using DNA as a template?

- (A) RNA dependent RNA polymerase
- (B) RNA dependent DNA polymerase
- (C) DNA dependent RNA polymerase

(D) DNA dependent DNA polymerase



41. To which of the following does thymine normally form hydrogen bonds in DNA?
- (A) Adenine
  - (B) Guanine
  - (C) Cytosine
  - (D) Thymine
42. All of the following are required for PCR reaction except:
- (A) Template DNA
  - (B) Thermostable DNA polymerase
  - (C) Primers
  - (D) Dideoxy-dNTPs
43. A medium which is prepared by mixing chemically defined compounds is called a:
- (A) Natural medium
  - (B) Reduced medium
  - (C) Synthetic medium
  - (D) Differential medium
44. Which of the following bacteria lacks cell wall?
- (A) *Bacillus*
  - (B) *Proteus*
  - (C) *Mycoplasma*
  - (D) *Clostridium*
45. Growth hormone which causes apical dominance in plants is:
- (A) Auxin
  - (B) Gibberelline
  - (C) Ethylene
  - (D) Cytokinin

46. Which of the following organelles contain 70S ribosomes?
- (A) Chloroplasts
  - (B) Golgi bodies
  - (C) Peroxisomes
  - (D) Lysosomes
47. Enzymes involved in feed-back inhibition are called:
- (A) Apozymes
  - (B) Allosteric enzymes
  - (C) Extremozymes
  - (D) Ribozymes
48. Chromosomes with centromere at the middle are commonly called:
- (A) Metacentric
  - (B) Acrocentric
  - (C) Submetacentric
  - (D) Acentric
49. Fruits can be artificially ripened through the use of:
- (A) Auxin
  - (B) Cytokinins
  - (C) Ethylene
  - (D) Abscisic acid
50. In ecological succession, hydrosere is defined as the:
- (A) Secondary succession starting in a pond
  - (B) Primary succession starting in a pond
  - (C) Primary succession starting in a dry soil
  - (D) Secondary succession starting in a dry soil

51. Which of the following organelles in plant is involved in the digestion of fat?
- (A) Glyoxysomes
  - (B) Cellulosomes
  - (C) Endoplasmic reticulum
  - (D) Peroxisomes
52. The largest genus (in terms of the number of species) of the family Malvaceae is:
- (A) *Sida*
  - (B) *Bombax*
  - (C) *Theobroma*
  - (D) *Hibiscus*
53. Which of the following techniques is best used for production of vitamins by plant tissue culture?
- (A) Callus culture
  - (B) Suspension culture
  - (C) Organ culture
  - (D) Anther culture
54. Which one of the following statements is not valid for ground nut?
- (A) Ground nut oil is edible
  - (B) Ground nut oil is used in manufacturing vanaspati
  - (C) Ground nut oil is used for making soap
  - (D) Ground nut oil is used as an antiviral agent
55. Shrinkage of protoplast of a cell from its cell wall under the influence of hypertonic solution is called:
- (A) Plasmolysis
  - (B) Deplasmolysis
  - (C) Absorption

(D) Adsorption

56. In plant cell, water is mostly retained in the:

- (A) Cell wall
- (B) Cytoplasm
- (C) Vacuole
- (D) Nucleus

57. In a cell, hydrolytic enzymes are mostly found in?

- (A) Lysosomes
- (B) Mitochondria
- (C) Ribosomes
- (D) Plastids

58. Powdery mildew of pea is caused by:

- (A) *Xanthomonas oryzae*
- (B) *Erysiphe pisi*
- (C) *Agrobacterium tumefaciens*
- (D) *Bacillus anthracis*

59. The rate of transpiration in plants is primarily influenced by all the environmental factors except:

- (A) Light
- (B) Humidity of air
- (C) Temperature
- (D) Soil nitrogen content

60. In  $C_3$  plants the first compound that is formed after  $CO_2$  fixation is:

- (A) 3-phosphoglyceric acid
- (B) Phosphoenol pyruvate
- (C) Ribulose 1,5 biphosphate

(D) Oxaloacetic acid