

## ROY'S INSTITUTE OF COMPETITIVE EXAMINATION

### RRB NTPC GRADUATE & UNDER GRADUATE CBT-1

# / BIOLOGY /

## HANDOUT-1

1. Which gland is active only till puberty?
  - a) Pineal
  - b) Thymus
  - c) Pituitary
  - d) Hypothalamus
2. During which phase of mitosis do chromosomes align at the equator of the cell?
  - a) Prophase
  - b) Metaphase
  - c) Anaphase
  - d) Telophase
3. Which part of the brain controls autonomic activities like heart rate and breathing?
  - a) Cerebrum
  - b) Medulla oblongata
  - c) Midbrain
  - d) Cerebellum
4. A mutation that changes a single nucleotide but does not affect the amino acid sequence is called –
  - a) Missense mutation
  - b) Nonsense mutation
  - c) Silent mutation
  - d) Frameshift mutation
5. Presbyopia occurs due to –
  - a) Shortening of eyeball
  - b) Lengthening of eyeball
  - c) Loss of lens elasticity with age
  - d) Corneal irregularity
6. Which animal tissue forms the lining of body surfaces and cavities?
  - a) Muscular tissue
  - b) Connective tissue
  - c) Epithelial tissue
  - d) Nervous tissue
7. The Polio vaccine was discovered by –
  - a) Isaac Newton
  - b) Marie Curie
  - c) Jonas Salk
  - d) Albert Einstein
8. Who coined the term 'protoplasm'?
  - a) G.J. Mendel
  - b) Johann Evangelist Purkinje
  - c) Charles Darwin
  - d) Robert Hooke
9. The causative organism of black rust of wheat is –
  - a) *Puccinia graminis tritici*
  - b) *Ustilago maydis*
  - c) *Alternaria alternata*
  - d) *Pythium debaryanum*
10. Squamous epithelium tissue is found in the alveoli of the lungs and other parts of animals where \_\_\_\_\_ contraction and relaxation occur.
  - a) temporary
  - b) no
  - c) one
  - d) regular
11. The ratio between Gross Primary Productivity (GPP) and Net Primary Productivity (NPP) is related to –
  - a) Energy loss due to respiration
  - b) Number of consumers
  - c) Nutrient recycling
  - d) Energy inflow from the sun

12. Tissues present around the edges in a lateral manner and giving rise to growth in the girth of the stem is called –  
 a) Lateral meristematic tissue      b) Cambium  
 c) Apical meristematic tissue      d) Vertical meristematic tissue
13. The primary cause of eutrophication in aquatic ecosystems is –  
 a) Acid rain      b) Nutrient enrichment (nitrates & phosphates)  
 c) Oil spillage      d) Thermal pollution
14. Which nitrogenous waste is excreted primarily by birds and reptiles?  
 a) Urea      b) Ammonia      c) Uric acid      d) Creatinine
15. The method used to dispose of non-biodegradable solid waste is –  
 a) Vermicomposting      b) Incineration      c) Anaerobic digestion      d) Composting
16. Which of the following statements is/are incorrect?  
 A. The complete name of DNA is deoxyribonucleic acid.  
 B. It is a chemical element present in a chromosome that carries genetic properties.  
 C. DNA is a polynucleotide, the nucleotide is the basic structural unit of DNA which consists of two components.  
 a) Only C and B      b) Only A and C      c) Only C      d) Only A
17. Leachate is –  
 a) A fertilizer produced from compost  
 b) Liquid that drains from landfill waste  
 c) Sludge from sewage  
 d) Gas produced during waste decomposition
18. In human females, the primary role of the corpus luteum is to –  
 a) Produce FSH and LH  
 b) Nourish the developing embryo  
 c) Maintain the endometrial lining through progesterone secretion  
 d) Prevent the release of the next ovum
19. Transpiration pull is responsible for –  
 a) Root pressure      b) Ascent of sap      c) Osmosis in roots      d) Food translocation
20. The approach based on the idea that 'organisms which are more distantly related will accumulate a greater number of differences in their DNA' is called?  
 a) Molecular phylogeny      b) Morphological approach      c) The DNA study      d) Metamorphosis
21. For treatment of which of the following is the bark of the Arjuna tree primarily used?  
 a) Tuberculosis      b) Skin disease      c) Heart disease      d) Inflammation
22. The fossil bird *Archaeopteryx* is a connecting link between –  
 a) Amphibians and reptiles      b) Reptiles and birds      c) Fish and amphibians      d) Mammals and reptiles

23. Which of the following statements is true?
- In human beings, there are 43 chromosomes. Of these, 42 (21 pairs) are autosomes and 4 (two pairs) are sex chromosomes.
  - The term 'Genetics' was coined by J.D.Watson in 1906.
  - Mendel was the first scientist to visualise a gene as an inheritance in 1886.
  - ~~One DNA molecule is made up of two long polynucleotide strands forming a double helical structure (double helix) just like spiral staircase.~~
24. We can control the stimulation of urination –
- ~~When the muscular bladder is under nerve control~~
  - When the sphincter muscle is present between the bladder and urethra
  - When there is less water in the bladder
  - Bladder not filling easily
25. \_\_\_\_\_ organs are those which have the same basic structural design and origin but have different functions.
- Homogenous
  - ~~Homologous~~
  - Heterogeneous
  - Analogous
26. In feedback regulation of hormone secretion, an increase in blood cortisol levels leads to –
- Increased ACTH secretion
  - ~~Increased CRH from hypothalamus~~
  - ~~Decreased ACTH secretion~~
  - Increased aldosterone secretion
27. In the hierarchy of classification, the largest taxonomic category is –
- Genus
  - Family
  - Class
  - Kingdom
28. Trachea is a part of the \_\_\_\_\_ system of the human body.
- Cardiac
  - ~~Respiratory~~
  - Excretory
  - Digestive
29. Which of the following is a natural system of classification in plants?
- Linnaeus
  - ~~Bentham & Hooker~~
  - Whittaker
  - Engler and Prantl
30. The heart is covered by two layers of membranes. What are these membranes called?
- Pulmonary membrane
  - ~~Pericardial membrane~~
  - Prequel membrane
  - Systematic membrane
31. Which of the following plants has specialized tissue for the conduction of water and other substances from one part of the plant body to another?
- Chara
  - ~~Moss~~
  - Riccia
  - ~~Marsilea~~
32. A person with AB blood group –
- can donate blood to A,B and O blood groups
  - ~~is called universal blood donor~~
  - blood can be received from any blood group
  - ~~is neither a universal recipient, nor a universal donor~~

33. Dicots are characterized by –  
 a) Parallel venation      b) Fibrous roots      c) Reticulate venation      d) One cotyledon
34. Where does the Link Reaction occur?  
 a) Cytoplasm      b) Mitochondrial matrix      c) Mitochondrial inner-membrane      d) Mitochondrial inter-membrane space
35. Which of the following is a deuterostome?  
 a) Annelida      b) Arthropoda      c) Echinodermata      d) Mollusca
36. Which part of the male human body is called 'Adam's Apple'?  
 a) Palate      b) Lungs      c) Tongue      d) Larynx
37. Water vascular system is found in –  
 a) Porifera      b) Coelenterata      c) Echinodermata      d) Chordata
38. Consider the following statements regarding photorespiration.  
 1. It occurs in C<sub>3</sub> plants when oxygen concentration is higher than CO<sub>2</sub>.  
 2. It takes place in chloroplasts, peroxisomes, and mitochondria.  
 3. It results in loss of fixed carbon and energy.
- Which of the above statements are correct?  
 a) 1 and 2 only      b) 1 and 3 only      c) 2 and 3 only      d) 1, 2 and 3
39. Flame cells (protonephridia) are excretory organs of –  
 a) Annelida      b) Platyhelminthes      c) Mollusca      d) Arthropoda
40. A baby receives its nutrition in the mother's womb through the \_\_\_\_\_.  
 a) fallopian tube      b) uterus      c) hormones      d) placenta
41. Crocodiles have a 4-chambered heart, but with –  
 a) Complete separation of blood      b) Partial mixing via foramen of Panizza  
 c) Single circulation      d) No atria
42. Neurohormones differ from neurotransmitters primarily because –  
 a) They are produced by endocrine glands only  
 b) They act only on distant target cells via the bloodstream  
 c) They are always derived from amino acids  
 d) Neurons secrete them into synaptic clefts
43. Bt cotton is genetically engineered to express –  
 a) Herbicide resistance      b) Bacillus thuringiensis toxin  
 c) Insecticidal protein      d) Both (b) and (c)

44. A child presenting with stunted growth and mental retardation due to congenital hypothyroidism is said to be suffering from –  
a) Acromegaly      b) Myxedema      c) Cretinism      d) Grave's disease
45. Which organism is commonly used in insulin production through recombinant DNA?  
a) *Saccharomyces cerevisiae*      b) *E. coli*      c) *Bacillus subtilis*      d) *Agrobacterium*
46. Which of the following is an example of a thigmotaxis?  
a) Sunflower turning to face the sun      b) Root growing towards gravity  
c) Drooping of *Mimosa pudica* leaves when touched      d) Opening of lotus flowers in sunlight
47. Northern blotting is used for –  
a) DNA detection      b) RNA detection      c) Protein detection      d) Lipid detection
48. The "universal donor" blood group is –  
a) AB<sup>+</sup>      b) O<sup>+</sup>      c) O<sup>-</sup>      d) A<sup>-</sup>
49. Phyllotaxy refers to –  
a) Leaf arrangement on stem      b) Leaf venation      c) Leaf shape      d) Leaf base structure
50. Which of the following is not an alkaloid?  
a) Morphine      b) Serotonin      c) Codeine      d) Cocaine