

**RAMAKRISHNA MISSION VIVEKANANDA CENTENARY COLLEGE, RAHARA, KOLKATA**  
**Undergraduate Admission Test 2025: Botany Honours**

**Full Marks : 75**

**Time : 1 hour**

**1. Lysosomes are known as “suicidal bags” because it has**

- a) Parasitic activity
- b) Presence of food vacuole
- c) Hydrolytic activity
- d) Catalytic activity

**2. Which enzyme is used to join nicks in the DNA strand?**

- a) Primase
- b) DNA polymerase
- c) DNA ligase
- d) Endonuclease

**3. Which of the following is the start codon?**

- a) UAG
- b) UGA
- c) UAA
- d) AUG

**4. A cell without a cell wall is termed as**

- a) Tonoplast
- b) Protoplast
- c) Symplast
- d) Apoplast

**5. The process of formation of seeds without fertilization in flowering plants is known as**

- a) Budding
- b) Apomixis
- c) Sporulation
- d) Somatic hybridization

**6. Pollination is best defined as**

- a) Germination of pollen grains
- b) Visiting flowers by insects
- c) Transfer of pollen from anther to stigma
- d) Growth of pollen tube in ovule

**7. Stele with pith is called**

- a) Siphonostele
- b) Protostele
- c) Dictyostele
- d) Atactostele

**8. The arrangement of flower on an axis is known as**

- a) Vernation
- b) Phyllotaxy
- c) Inflorescence
- d) All of the above

**9. The artificial system of classification was proposed by**

- a) Carolus Linnaeus
- b) G. Bentham
- c) J.D. Hooker
- d) None of the above

**10. Dicotyledons differ from Monocotyledons in having**

- a) Fruits
- b) Pentamerous flowers
- c) Inflorescence
- d) All of the above

**11. Several individuals of a species in a particular area at particular time known as**

- a) communities
- b) population
- c) ecosystem
- d) all of the above

**12. Which of the following is a distinguishing feature of prokaryotic cells?**

- a) Presence of membrane-bound organelles
- b) Circular DNA not enclosed in a nucleus
- c) DNA associated with histone proteins
- d) Presence of mitochondria

**13. Which of the following structures is found in bacteria but not in viruses?**

- a) Nucleic acid
- b) Ribosomes
- c) Capsid
- d) Envelope

**14. Which Gram stain result indicates the presence of a thick peptidoglycan layer in bacterial cell walls?**

- a) Gram-negative (pink)
- b) Gram-variable
- c) Gram-positive (purple)
- d) Acid-fast

**15. Which one of the following is a nitrogen-fixing cyanobacterium?**

- a) *Mycobacterium*
- b) *Anabaena*
- c) *Rhizobium*
- d) *Clostridium*

**16. In which of the following processes do bacteria convert ammonia into nitrites?**

- a) Nitrogen fixation
- b) Nitrification
- c) Denitrification
- d) Ammonification

**17. The term “prokaryote” literally means:**

- a) Before the cell wall
- b) Before the nucleus
- c) Primitive cytoplasm
- d) No genetic material

**18. Which of the following components is present in all prokaryotic cells?**

- a) Nucleus
- b) Endoplasmic reticulum
- c) Plasma membrane
- d) Mitochondria

**19. Archaea differ from true bacteria in:**

- a) Presence of nucleus
- b) Having peptidoglycan in the cell wall
- c) Lipid composition of their cell membrane
- d) Mode of reproduction

**20. Plasmids in bacteria are best described as:**

- a) Circular RNA molecules involved in transcription
- b) Circular DNA molecules that replicate independently
- c) Essential parts of the bacterial genome
- d) Protein structures for motility

**21. Which of the following methods is commonly used for sterilization in microbiological experiments?**

- a) Pasteurization
- b) Freezing
- c) Autoclaving
- d) Fermentation

**22. Which type of chlorophyll is present in all oxygenating photosynthetic plants?**

- a) Chlorophyll a
- b) Chlorophyll b
- c) Chlorophyll c
- d) Chlorophyll d

**23. An individual with two identical alleles for a particular trait is said to be:**

- a) Heterozygous
- b) Homozygous
- c) Hemizygous
- d) Dominant

**24. The alleles of a gene are located on:**

- a) Different chromosomes
- b) Homologous chromosomes
- c) Sister chromatids
- d) Non-homologous chromosomes

**25. Which bacteria is commonly used in genetic engineering for plants?**

- a) *Escherichia coli*
- b) *Bacillus subtilis*
- c) *Agrobacterium tumefaciens*
- d) *Mycobacterium tuberculosis*