

**BOTANY**

**Marks: 75**

**SECTION – A**

**14 x 1 = 14**

1. The fifth Internal Botanical Congress was held at  
(a) Leningrad (b) Cambridge (c) Germany (d) Newyork
2. Bracteoles are absent in  
(a) Hibiscus rosa-sinensis (b) Malva sylvestris (c) Abutilon indicum (d) Pavonia odorata
3. In Musa paradisiacal, the inflorescence is  
(a) racemose (b) spadix (c) panicle (d) umbel
4. Photosynthesis is the important function of  
(a) parenchyma (b) aerenchyma (c) chlorenchyma (d) sclerenchyma
5. The stele is eustele in  
(a) monocot stem (b) dicot leaf (c) dicot stem (d) dicot root
6. V-shaped chromosomes are called  
(a) metacentric (b) submetacentric (c) telocentric (d) acrocentric
7. The elongation of DNA strand during replication of DNA is due to the action of  
(a) primase (b) RNA primer (c) Helicase (d) DNA polymerase
8. Crown gall disease of tomato is caused by  
(a) Agrobacterium tumefaciens (b) Streptomyces hygroscopicus  
(c) Bacillus thuringiensis (d) Streptomyces griesus
9. The bacterium used for the decomposition of hydrocarbons present in the oil is  
(a) Agrobacterium tumefaciens (b) Bacillus thuringiensis  
(c) Pseudomonas putida (d) Streptomyces hygroscopicus
10. The essential component for the formation of chlorophyll is  
(a) iron (b) magnesium (c) manganese (d) cobalt
11. During cyclic photophosphorylation, the number of ATP molecules produced per cycle is  
(a) one (b) two (c) three (d) four
12. Sundew plant refers to  
(a) Monotropa (b) Cuscuta (c) Viscum (d) Drosera
13. The plant that grows in extreme saline soil is  
(a) dwarf wheat (b) sugar beats (c) pear plants (d) atomita 2-rice
14. Cercospora personata causes  
(a) blast disease of rice (b) bakanae disease of rice  
(c) tikka disease of groundnut (d) crown gall disease of tomato

**SECTION – B**

**Answer any 7**

**(7 x 3 = 21)**

15. What is type specimen?
16. State any three medicinally useful plants of Malvaceae and write their uses.
17. Write any three anatomical differences between plants of gymnosperms and angiosperms.
18. What is endarch xylem? Give example.
19. Define genome. State the size of genome of Arabidopsis thaliana.
20. What is called splicing?
21. Write any three differences between light respiration and dark respiration.
22. What is Richmond Lang effect?
23. Write in three sentences about photolysis of water.
24. What is pure line selection of plants?

**SECTION – C**

**Answer 4 questions 27 is compulsory**

**4 x 5 = 20**

25. Write economically useful plants of Solanaceae.
26. What is meristem? Explain the types of meristem based on its position?
27. Describe the structure of a chromosome.
28. Write a brief account of SCP.
29. Explain non-cyclic photophosphorylation.
30. Write the significance of pentose phosphate pathway.
31. 'Sustainable agriculture is an eco-friendly farming system' – Discuss.

**SECTION – D**

**Answer any 2**

**2 x 10 = 20**

32. Describe Datura metal in technical terms.
33. Write the anatomical difference between monocot stem and dicot stem.

34. Discuss briefly the recombinant DNA technology.  
 35. Explain the steps involved in Krebs cycle.

**ZOOLOGY**

**Marks: 75**

**SECTION – A**

**16 x 1 = 16**

1. During expiration \_\_\_\_\_ muscles are in contraction.  
 (a) external intercostals (b) internal intercostals (c) diaphragm (d) abdominal
2. The heart muscles receive blood supply through \_\_\_\_\_.  
 (a) aorta (b) circum flex artery (c) coronary sinus (d) cerebral artery
3. Which one of the following is the smallest leucocyte?  
 (a) Monocyte (b) Lymphocyte (c) Basophil (d) Eosinophil
4. African sleeping sickness is caused by \_\_\_\_\_.  
 (a) Leishmania tropica (b) Entamoeba histolytica  
 (c) Plasmodium vivax (d) Trypanosoma gambiense
5. The incubation period of rabies in human being is \_\_\_\_\_.  
 (a) 10 days (b) 1 – 2 weeks (c) 3 – 8 weeks (d) 1 year
6. Hepatitis B virus causes \_\_\_\_\_.  
 (a) AIDS (b) flu (c) rabies (d) jaundice
7. HIV attacks \_\_\_\_\_.  
 (a) all cells of our body (b) RBC (c) T helper cells (d) platelets
8. The lymphocytes are produced at \_\_\_\_\_.  
 (a) blood vessels (b) liver (c) spleen (d) bone marrow
9. To introduce a gene into a cell, pores can be made on the plasma membrane by \_\_\_\_\_ method.  
 (a) electroporation (b) electrification (c) vector (d) gene gun
10. proteins are made up of \_\_\_\_\_.  
 (a) fatty acids (b) carbohydrates (c) amino acids (d) DNA
11. According to Thomas Malthus the pattern of population growth is in a \_\_\_\_\_.  
 (a) negative rate (b) geometric rate (c) arithmetic rage (d) steady state rate
12. Dual purpose cows means \_\_\_\_\_.  
 (a) cows meant for milk and field works (b) cows meant for milk and drought resistance  
 (c) cows meant for drought resistance and field works (d) cows meant for meat and milk
13. Which endoscopic technique is used to detect the defects if any in the vagina or cervix?  
 (a) Colposcopy (b) Cystoscopy (c) Thoracoscopy (d) Bronchoscopy
14. Which one of the following is the Chinese carp?  
 (a) Kendai (b) Mrigala (c) Common carp (d) Murrels
15. The hatching period of chick's egg is \_\_\_\_\_.  
 (a) 10 days (b) 21 – 22 days (c) 15 – 20 days (d) 25 – 30 days
16. The fossil form of horse is \_\_\_\_\_.  
 (a) Equus (b) Eohippus (c) Archeopterix (d) All the above

**SECTION – B**

**Answer any 8**

**(8 x 3 = 24)**

17. Define BMI.
18. What is pulse rate?
19. Name any 2 antibiotics.
20. What is meant by diploid cell strain?
21. Differentiate autograft from allograft.
22. What is differentiation?
23. What is sequenator?
24. What is geothermal energy?
25. What is meant by seeding of clouds?
26. How will you identify a healthy cattle?
27. What is the use of haemocytometer?
28. What is polymorphism?

**SECTION – C**

**Answer 3 questions 29 is compulsory**

**3 x 5 = 15**

29. If chicken pox viruses enter into the body of a man, what would be the reaction within the body?
30. Explain the mechanism of reflex action.
31. Write short notes on bacterial genetics.
32. Explain the lan Wilmut experiment to produce clones.
33. Briefly explain Sewal Wright's genetic drift.

**SECTION – D**

**Answer any 2**

**2 x 10 = 20**

34. Describe the structure of a striated muscle with the help of diagram.

35. Write an essay on menstrual cycle.
36. Management of hazardous wastes. Discuss.
37. Write an essay on incubation and hatching of chick's egg.

