

**I. CHOOSE THE CORRECT ANSWER :****30X1=30**

1. Which one of the following statement about virus is correct?
  - a. Possess their own metabolic system
  - b. They are facultative parasites
  - c. They contain DNA or RNA
  - d. Enzymes are present
2. Which of the plant group has gametophyte as a dominant phase?
  - a. Pteridophytes
  - b. Bryophytes
  - c. Gymnosperm
  - d. Angiosperm
3. *Bryophyllum* and *Dioscorea* are example for
  - a. Foliar bud, apical bud
  - b. Foliar bud, cauline bud
  - c. Cauline bud, apical bud
  - d. Cauline bud, foliar bud
4. Vexillary aestivation is characteristic of the family
  - a. Fabaceae
  - b. Asteraceae
  - c. Solanaceae
  - d. Brassicaceae
5. Phylogenetic classification is the most favoured classification because it reflects
  - a. Comparative Anatomy
  - b. Number of flowers produced
  - c. Comparative cytology
  - d. Evolutionary relationships
6. The two subunits of ribosomes remain united at critical ion level of
  - a. Magnesium
  - b. Calcium
  - c. Sodium
  - d. Ferrous
7. Centromere is required for
  - a. transcription
  - b. crossing over
  - c. Cytoplasmic cleavage
  - d. movement of chromosome towards pole
8. In Gymnosperms, the activity of sieve cells are controlled by
  - a. Nearby sieve tube members.
  - b. Phloem parenchyma cells
  - c. Nucleus of companion cells.
  - d. Nucleus of albuminous cells.
9. Consider the following statements ; In spring season vascular cambium
  - i. is less active
  - ii. produces a large number of xylary elements
  - iii. forms vessels with wide cavities of these,
  - a. (i) is correct but (ii) and (iii) are not correct
  - b. (i) is not correct but (ii) and (iii) are correct
  - c. (i) and (ii) are correct but (iii) is not correct
  - d. (i) and (ii) are not correct but (iii) is correct.
10. In a fully turgid cell
  - a. DPD = 10 atm; OP = 5 atm; TP = 10 atm
  - b. DPD = 0 atm; OP = 10 atm; TP = 10 atm
  - c. DPD = 0 atm; OP = 5 atm; TP = 10 atm
  - d. DPD = 20 atm; OP = 20 atm; TP = 10 atm
11. **Assertion (A):** Increase in Proton gradient inside lumen responsible for ATP synthesis  
**Reason (R):** Oxygen evolving complex of PS I located on thylakoid membrane facing Stroma, releases H<sup>+</sup> ions
  - a. Both Assertion and Reason are True.
  - b. Assertion is True and Reason is False.
  - c. Reason is True and Assertion is False.
  - d. Both Assertion and Reason are False.
12. The number of ATP molecules formed by complete oxidation of one molecule of pyruvic acid is
  - a. 12
  - b. 13
  - c. 14
  - d. 15
13. During oxidation of two molecules of cytosolic NADH 1 H<sup>+</sup>, number of ATP molecules produced in plants are
  - a. 3
  - b. 4
  - c. 6
  - d. 8
14. Select the wrong statement from the following:
  - a. Formative phase of the cells retain the capability of cell division.
  - b. In elongation phase development of central vacuole takes place.
  - c. In maturation phase thickening and differentiation takes place.
  - d. In maturation phase, the cells grow further.
15. If the diameter of the pulley is 6 inches, length of pointer is 10 inches and distance travelled by pointer is 5 inches. Calculate the actual growth in length of plant.
  - a. 1.5 inches
  - b. 6 inches
  - c. 12 inches
  - d. 30 inches
16. A living organism is differentiated from non-living structure based on
  - a. Reproduction
  - b. Growth
  - c. Metabolism
  - d. All the above

17. A group of organisms having similar traits of a rank is  
 a. Species                      b. Taxon                      c. Genus                      d. Family
18. Which of the following animals has a true coelom ?  
 a. *Ascaris*                      b. *Pheretima*                      c. *Sycon*                      d. *Taenia solium*
19. Metameric segmentation is the main feature of  
 a. Annelida                      b. Echinodermata                      c. Arthropoda                      d. Coelenterata
20. The ciliated epithelium lines the  
 a. Skin                      b. Digestive tract                      c. Gall bladder                      d. Trachea
21. The clitellum is a distinct part in the body of earthworm *Lampito mauritii*, it is found in?  
 a. Segments 13 – 14                      b. Segments 14 – 17                      c. Segments 12 – 13                      d. Segments 14 – 16
22. Which one is incorrectly matched?  
 a. Pepsin – stomach                      b. Renin – liver                      c. Trypsin – intestine                      d. Ptyalin – mouth
23. Absorption of glycerol, fatty acids and monoglycerides takes place by  
 a. Lymph vessels within villi                      b. Walls of stomach                      c. Colon                      d. Capillaries within villi
24. Intercostal muscles are found between the  
 a. vertebral column                      b. sternum                      c. ribs                      d. glottis
25. Blood group is due to the presence or absence of surface  
 a. Antigens on the surface of WBC                      b. Antibodies on the surface of RBC  
 c. Antigens on the surface of RBC                      d. Antibodies on the surface of WBC
26. Podocytes are the cells present on the  
 a. Outer wall of Bowman's capsule                      b. Inner wall of Bowman's capsule  
 c. Neck of nephron                      d. Wall glomerular capillaries
27. The region between two successive Z-discs is called a  
 a. sarcomere                      b. microtubule                      c. myoglobin                      d. actin
28. Each skeletal muscle is covered by  
 a. epimysium                      b. perimysium                      c. endomysium                      d. hypomysium
29. Which part of the human brain is concerned with the regulation of body temperature?  
 a. Cerebellum                      b. Cerebrum                      c. Medulla oblongata                      d. Hypothalamus
30. **Assertion:** Nuptial flight is a unique flight taken the queen bee followed by several drones.  
**Reason:** The queen bee produces a chemical substance called pheromone. The drones in that area are attracted to the pheromone and then mating takes place.  
 a. Assertion and reason is correct but not related                      b. Assertion and reason is incorrect but related  
 c. Assertion and reason is correct but related                      d. Assertion and reason is incorrect but not related

## II .ANSWER THE FOLLOWING :

10X2=20

31. Where will you place the plants which contain two cotyledons with cup shaped thalamus?
32. Draw the floral diagram and write the floral formula of *Clitoria ternatea*.
33. Bring out the significance of Transmission Electron Microscope.
34. State the protoplasm theory.
35. Distinguish between prokaryotes and eukaryotes. (any four points)
36. Draw and Label the parts of Polytene chromosomes and Lampbrush chromosomes
37. Write the physiological effects of Cytokinins.
38. Give a brief account on Programmed Cell Death (PCD)
39. Why is the blind spot called so?
40. Sam's optometrist tells him that his intraocular pressure is high. What is this condition called and which fluid does it involve?
41. Draw and Label the parts of L.S. of the eye.
42. Differentiate between peristomium and prostomium in earthworm.
43. Head of cockroach is called hypognathous. Why?