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M.Sc. I Semester Degree Examination, April/May - 2024

BOTANY

SEC 1 : Modern methods of Plant Analysis

(NEP)

Time : 1 Hour Maximum Marks : 30

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1. Which one of the following forces greatly enhances the separation forces ?

(A) Brownian forces (B) Centrifugal forces

(C) Gravitational forces (D) Van - der Waals forces

2. Centrifugation is based on which of the following law :

(A) Pascal's law (B) Stokes law (C) Stain law (D) Patrick's law

3. The spectra can be broadly classified into two categories. They are _____.

(A) Atomic and molecular spectra

(B) Atomic and electronic spectra

(C) Molecular and electronic spectra

(D) None of the mentioned above

4. What is the neutral value of the pH scale ?

(A) Less than 5 (B) Equal to 7 (C) Less than 8 (D) Less than 10

5. Who invented the pH scale ?

(A) S.P.L. Sorenson (B) Benjamin Franklin

(C) Henry Moseley (D) Wilhelm Rontgen

6. Identify the enzyme used in the technique of ELISA :

(A) Horse radish peroxidase (B) Tyrosinase

(C) Lactate dehydrogenase (D) Chymotrypsin

P.T.O.

7. Abbreviation of ELISA is :

(A) Ion Selective Field Effect Transistors
(B) Enzyme Linked Field Effect Transistors
(C) Adenosine Triphosphotase
(D) Enzyme Linked Immunosorbent Assay

8. Which of the following types of chromatography involves the separation of substances in a mixture over a 0.2 mm thick layer of an adsorbent ?

(A) Gas liquid (B) Column (C) Thin layer (D) Paper

9. ELISA techniques have been combined with biosensors to form _____.

(A) Calorimetric biosensor (B) Piezo-electric biosensor
(C) Immunosensor (D) Potentiometric biosensor

10. What is the solid support typically used in Sothern blotting to immobilize DNA fragments ?

(A) Polyacrylamide gel (B) Nylon filters
(C) Glass slides (D) Nitrocellulose membrane

11. Which of the following is an application of polymer chain reaction ?

(A) Site-directed mutagenesis (B) Site-specific recombination
(C) Site-specific translocation (D) All of the above

12. Denaturation is the process of :

(A) Heating at 72 degree centigrade
(B) Heating between 40 to 60 degree centigrade
(C) Heating between 90 to 98 degree centigrade
(D) None of the above

13. Primers used for the process of polymerase chain reaction are :

(A) Single stranded RNA oligonucleotide
(B) Single stranded DNA oligonucleotide
(C) Double stranded RNA oligonucleotide
(D) Double stranded DNA oligonucleotide

14. Which microscope is used to observe living, unstained cells by simply changing the way in which they are illuminated ?

(A) Bright field microscope (B) Electron microscope
(C) Dark field microscope (D) Fluorescent microscope

15. Which of the following is not a thermostable polymerase ?

(A) Pfu polymerase (B) Taq polymerase

(C) Vent polymerase (D) DNA polymerase III

16. The analysis of electromagnetic radiation scattered, absorbed or emitted by the molecule is called _____.

(A) Kaleidoscopy (B) Astronomy (C) Spectroscopy (D) Anatomy

17. In centrifugation, which of the following force is not used ?

(A) Electrostatic force (B) Gravitational force

(C) Centripetal force (D) Centrifugal force

18. What type of blotting technique is used to detect specific RNA sequences ?

(A) Southern blotting (B) Northern blotting

(C) Western blotting (D) Eastern blotting

19. In chromatography, which of the following can the mobile phase be made of ?

(A) Solid or liquid (B) Liquid or gas

(C) Gas only (D) Liquid only

20. In thin layer chromatography, the stationary phase is made of _____ and the mobile phase is made of _____.

(A) Solid, liquid (B) Liquid, liquid (C) Liquid, gas (D) Solid, gas

21. The region of electromagnetic spectrum for nuclear magnetic resonance is :

(A) Microwave (B) Radiofrequency

(C) Infrared (D) UV - rays

22. Chain-termination is a type of _____.

(A) Sequencing (B) Vector generation

(C) Anabiotic production (D) Gene manipulation

23. What is the main enzyme component of sanger sequencing ?

(A) Helicase (B) Polymerase (C) Nuclease (D) Gyrase

24. Western Blotting is used for the detection of :

(A) Special glycolipid in a sample

(B) Specific protein in a sample

(C) Specific DNA in a sample

(D) Specific RNA in a sample

25. In counter immunoelectrophoresis :

(A) The antibody will migrate towards anode

(B) The antibody will migrate towards cathode

(C) Electrophoresis will drive the antibody and antigen parallel to each other

(D) Electrophoresis will drive the antibody and antigen towards each other

26. The maximum resolution of a light microscope is :

(A) 0.2 nm (B) 0.2 mm (C) 0.1 nm (D) 0.2 um

27. Which of the following microscopy does not require any pre-treatment procedure before imaging ?

(A) TEM (B) SEM (C) Confocal (D) Optical

28. Which type of DNA cleavage is done in Maxam Gilbert method ?

(A) Edge (B) Interstitial

(C) Base-specific (D) Gene-specific

29. The Klenow fragment is basically a _____.

(A) DNA hybrid (B) DNA Polymerase

(C) RNA Polymerase (D) Promoter

30. What is called centrifugation ?

(A) Separated through spinning

(B) Separate components at higher temperature

(C) Separate components at lower temperature

(D) Separated through evaporation

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