

CLINICAL CHEMISTRY

1. What is the control units function in the CPU ?
 - (A) To decode program instructions
 - (B) To transfer data to primary storage
 - (C) To perform logical operations
 - (D) All of the above
2. The CPU can perform read and write operations at any point in time in :
 - (A) ROM
 - (B) PROM
 - (C) RAM
 - (D) None of the above
3. Magnetic tape can serve as :
 - (A) Input media
 - (B) Output media
 - (C) Secondary storage media
 - (D) All of the above
4. What is the alternative name for application software ?
 - (A) Utility software
 - (B) End user software
 - (C) Practical software
 - (D) None of the above
5. Menadione, the synthetic analogue of Vitamin K is also known as :
 - (A) Vitamin K₁
 - (B) Vitamin K₂
 - (C) Vitamin K₃
 - (D) None of the above

6. Catalase is an enzyme that :
- (A) Converts hydrogen peroxide to water in the presence of glutathione
 - (B) Converts hydrogen peroxide to water in the presence of selenium
 - (C) Converts hydrogen peroxide to water in the absence of glutathione.
 - (D) None of the above
7. Succus entericus is synthesized in :
- (A) Rectum
 - (B) Stomach
 - (C) Duodenum
 - (D) None of the above
8. Which of the following hormones stimulates the release of Insulin ?
- (A) Vasoactive intestinal polypeptide
 - (B) Secretin
 - (C) CCK-PZ
 - (D) None of the above
9. What is the major intracellular cation ?
- (A) Calcium
 - (B) Magnesium
 - (C) Sodium
 - (D) Potassium
10. Bilirubin is *not* excreted in urine in :
- (A) Obstructive Jaundice
 - (B) Hepatic Jaundice
 - (C) Hemolytic Jaundice
 - (D) None of the above

11. Evaluation of Aspartate transaminase is indicative of :
- (A) Myocardial infarction
 - (B) Hepatic disorder
 - (C) Skeletal muscle disorder
 - (D) All of the above
12. In primary hyperthyroidism :
- (A) T_3 and TSH is raised
 - (B) T_3 and TSH is depressed
 - (C) T_3 is increased but TSH is depressed
 - (D) None of the above
13. The compound that facilitate the release of oxygen from oxyhemoglobin is :
- (A) 2-3 BPG
 - (B) H^+
 - (C) Cl^-
 - (D) All of the above
14. Which of the following hormones is an amino acid derivative ?
- (A) Epinephrine
 - (B) Norepinephrine
 - (C) Both (A) and (B)
 - (D) None of the above
15. Which of the following is a measure of central tendency ?
- (A) Geometric mean
 - (B) Median
 - (C) Mode
 - (D) All of the above

16. The variance of first n natural numbers is :
- (A) $(n^2 + 1)/12$
 - (B) $(n + 1)^2 /12$
 - (C) $(n^2 - 1)/12$
 - (D) None of the above
17. In a discrete set of values, the correct relation between deviation and standard deviation is :
- (A) M.D. > S.D.
 - (B) M.D. < S.D.
 - (C) M.D. \leq S.D.
 - (D) M.D. \geq S.D.
18. Assume that a Chi-square test is to be performed on contingency table with four rows and four columns. How many degree of freedom should be use ?
- (A) 6
 - (B) 8
 - (C) 9
 - (D) 16
19. Saliva contains especially large quantities of :
- (A) Sodium and Magnesium ions
 - (B) Magnesium and Potassium ions
 - (C) Potassium and Bicarbonate ions
 - (D) None of the above
20. Oxytoxin, a hormone produced by the posterior pituitary causes :
- (A) Milk ejection from breasts
 - (B) Uterine contractions
 - (C) Both (A) and (B)
 - (D) None of the above

21. In the vision cycle, 11 cis retinal automatically recombines with which of the following to reform Rhodopsin.
- (A) Photopsin
 - (B) Scotopsin
 - (C) Lumirhodopsin
 - (D) Metarhodopsin
22. End feet is a term generally referred to :
- (A) Synaptic cleft
 - (B) Presynaptic terminal
 - (C) Post-synaptic terminal
 - (D) None of the above
23. Short hand notation 8 : 0 is assigned to which of the following carboxylic acid :
- (A) Caprylic acid
 - (B) Capric acid
 - (C) Caproic acid
 - (D) None of the above
24. Chain A of the insulin hormone is made up of :
- (A) 20 amino acids
 - (B) 30 amino acids
 - (C) 51 amino acids
 - (D) None of the above
25. The strong acidic medium in the stomach aid in :
- (A) Irreversible denaturation of proteins
 - (B) Protonation of amino acids
 - (C) Both (A) and (B)
 - (D) None of the above

26. The molecular mass of glucokinase and hexokinase is respectively :
- (A) 55 KD and 110 KD
 - (B) 110 KD and 55 KD
 - (C) 55 KD only
 - (D) None of the above
27. In non-competitive inhibition :
- (A) V_{\max} is lowered
 - (B) K_m is unaltered
 - (C) Both (A) and (B)
 - (D) None of the above
28. Which of the following drugs acts by competitive inhibitions in biological systems ?
- (A) Allupurinol
 - (B) Sulphonamides
 - (C) Both (A) and (B)
 - (D) None of the above
29. Biurett reactions can be shown by :
- (A) Proline
 - (B) Aspartic acid
 - (C) Histidine
 - (D) None of the above
30. Hyaluronic acid is a polymer of :
- (A) N Acetyl galactosamine and D glucuronic acid
 - (B) N Acetyl glucosamine and D glucuronic acid
 - (C) N Acetyl glucosamine and D galactouronic acid
 - (D) None of the above

31. Vitamin B₅ is also referred to as :
- (A) Pyridoxine
 - (B) Liopoic acid
 - (C) Biotin
 - (D) None of the above
32. Krebs-Henseleit cycle is also known as :
- (A) Citric acid cycle
 - (B) Glyoxylate cycle
 - (C) Corny cycle
 - (D) None of the above
33. The urine of patients suffering from the following disease has a mousy odour :
- (A) Cystinuria
 - (B) Protinuria
 - (C) Alkaptonuria
 - (D) None of the above
34. Iron may be stored in the body as ;
- (A) Haemoglobin
 - (B) Haemosiderin
 - (C) Both (A) and (B)
 - (D) None of the above
35. Which of the following is DNA viruses that are implicated in cancers ?
- (A) Feline sarcoma virus
 - (B) Avian erythroblastosis virus
 - (C) Herpes virus
 - (D) All of the above

36. Under physiological conditions, the DNA structure is predominantly as :
- (A) Z form
 - (B) B form
 - (C) A form
 - (D) D form
37. PCR technique was first introduced by :
- (A) Weber and Osborn
 - (B) W. Southern
 - (C) Joseph Denys
 - (D) None of the above
38. A child is born with extra chromosome on each of his cell. This condition is the result of :
- (A) Synapsis
 - (B) Crossing over
 - (C) Non-disjunction
 - (D) Disjunction
39. Chromosome number of Down's syndrome is :
- (A) 46
 - (B) 47
 - (C) 45
 - (D) 24
40. Termination codons for protein synthesis are :
- (A) AUU, AUG, GUU
 - (B) UGA, UAU, UAG
 - (C) UAU, UAG, UGG
 - (D) None of the above

41. Degeneracy of genetic code was discovered by :
- (A) M. Nirenberg
 - (B) S. Ochoa
 - (C) G. McClintok
 - (D) H. Khorana
42. In Tryptophan operon, the transcript folds itself into a particular stem loop like structure for the attenuation which is basically :
- (A) 1-2 sequence base pairing
 - (B) 2-3 sequence base pairing
 - (C) 3-4 sequence base pairing
 - (D) None of the above
43. Enhancers involved in gene regulation in eukaryotes are :
- (A) Trans acting elements
 - (B) Cis acting elements
 - (C) Both (A) and (B)
 - (D) None of the above
44. Topoisomerases alter the linking number of DNA through the involvement of :
- (A) Hydrogen bond
 - (B) Phosphate bond
 - (C) Phosphotyrosine bond
 - (D) None of the above
45. How many different classes of cyclin CDK complexes are associated with either G1, S or M phase ?
- (A) Two
 - (B) Three
 - (C) Four
 - (D) Five

46. Which of the following enzymes are used in DNA cloning ?
- (A) Nuclease S1
 - (B) DNA ligase
 - (C) Restriction endonuclease
 - (D) All of the above
47. Addition of which of the following synthetic inducer rapidly stimulates transcription of lactose operon structural gene :
- (A) Isopropyl β D thioglucopyranoside
 - (B) Isopropyl β D thiogalactopyranoside
 - (C) Isopropyl α D thioglucopyranoside
 - (D) Isopropyl α D thiogalactopyranoside
48. The codon AAA codes for ;
- (A) Arginine
 - (B) Glutamine
 - (C) Lysine
 - (D) Asparagine
49. Cell theory was put forward by ;
- (A) Sutton and Boveri
 - (B) M. Shapiro
 - (C) H. Purkinje
 - (D) None of the above
50. Cytochrome oxidase is also referred to as :
- (A) Complex I
 - (B) Complex II
 - (C) Complex III
 - (D) None of the above

51. The presence of phosphomannose on the protein targets in to which of the following destinations :
- (A) Lysosome
 - (B) Extracellular medium
 - (C) Plasma membrane
 - (D) Mitochondria
52. Major immunoglobulin isotype associated with allergic reaction are :
- (A) IgA
 - (B) IgD
 - (C) IgE
 - (D) None of the above
53. Clonal selection theory was given by :
- (A) Karl Landstainer and Snel
 - (B) Kohler and Milstein
 - (C) Porter and Edelman
 - (D) Medawer and Burnett
54. The process of opsonization is related with :
- (A) Rapid uptake of antigen by phagocyte
 - (B) Coating of microbe with antibody
 - (C) Coating of microbe with complement
 - (D) All of the above
55. Which of the following enzymes can be used as a marker enzyme for outer membrane in mitochondria ?
- (A) Sulfite oxidase
 - (B) Adenylate cyclase
 - (C) Carnitine tranferase
 - (D) None of the above

56. In which of the following molecules, the van der Waals force is likely to be the most important in determining the melting point and boiling point ?
- (A) CO
 - (B) H_2S
 - (C) Br_2
 - (D) HCl
57. The molecule which has the largest dipole moment amongst the following is :
- (A) CH_4
 - (B) CHCl_3
 - (C) CCl_4
 - (D) CH_2Cl_2
58. Blood is isotonic with :
- (A) 0.12 M NaCl
 - (B) 0.16 M NaCl
 - (C) 23% NaCl
 - (D) None of the above
59. The oxidation number of carbon in $\text{C}_{12}\text{H}_{22}\text{O}_{11}$ is :
- (A) 0
 - (B) +22
 - (C) + 6
 - (D) - 6
60. The difference in the frequency of radiation between incident and scattered radiation is known as :
- (A) Frank shift
 - (B) Raman shift
 - (C) Plancks shift
 - (D) None of the above