Basic Physiological function in animals

1. Diabetes insipidus is due to insufficient release of _____
a) Insulin
b) ADH
c) Thyroxine
d) Glucagon
View Answer

Answer: b
Explanation: Diabetes insipidus is a disorder of salt and water metabolism marked by intense thirst and heavy urination. Diabetes insipidus is due to insufficient release of ADH.

2. Which of the following gastrointestinal hormone stimulates insulin secretion?
a) GIP
b) CCK
c) Gastrin
d) Secretin
View Answer

Answer: a
Explanation: GIP is gastroinhibitory peptide. It is also known as glucose dependent insulinotroic peptide. It is a weak inhibitor of gastric acid secretion; its main role is to stimulate insulin secretion.

3. Which of the following element is needed for insulin to exert its maximal effect in glucose uptake?
a) Vanadium
b) Molybdenum
c) Selenium
d) Chromium
View Answer

Answer: d
Explanation: Chromium is an essential mineral that appears to have a beneficial role in the regulation of insulin action and its effects on carbohydrate, protein and lipid metabolism. Chromium is an important factor for enhancing insulin activity.

4. Insulin promotes _____
a) Glucosuria
b) Glycogenesis
c) Glycogenolysis
d) Gluconeogenesis
View Answer

Answer: b
Explanation: Glycogenesis is a process of glycogen synthesis from sugar. Insulin promotes Glycogenesis.

5. Humulin is being commercially produced from a transgenic species of _____
a) Rhizobium
b) Saccharomyces
c) Escherichia
d) Mycobacterim
View Answer

Answer: c
Explanation: Humulin is being commercially produced from a transgenic species of Escherichia. Humulin is a man-made form of hormone that is produced from the body. It was first done by Eli Lily company.

6. Insulin receptors are _____
a) Extrinsic protein
b) Intrinsic protein
c) G protein
d) Trimeric protein
View Answer

Answer: a
Explanation: Insulin receptors are extrinsic protein. Insulin binds to r4ecetors on the cell surface. This activates the cell's glucose transporter molecules to form a doorway in the cell membrane so that glucose can enter the cell.

7. What do endocrine cells of pancreas secrete?
a) Omega growth hormone
b) Beta somatostatin
c) Delta insulin
d) Alpha glucagon

View Answer

Answer: d
Explanation: Alpha glucagon is secreted by endocrine cells of the pancreas. They make up to 20% of human islet cells synthesizing and secreting glucagon.

8. Where does synthesis of insulin begin?
a) rRER
b) sRER
c) Nucleolus
d) Mitochondria
View Answer

Answer: c
Explanation: Nucleolus is a part of eukaryote cell where ribosomes are made. It is the largest structure in the nucleus. Synthesis of insulin begins in Nucleolus.

9. How many intermolecular and interamolecular disulfide bond is present in insulin?
a) 1 Intermolecular, 2 intramolecular
b) 2 Intermolecular, 2 intramolecular
c) 2 Intermolecular, 1 intramolecular
d) 1 Intermolecular, 3 intramolecular
View Answer

Answer: c
Explanation: None.

10. Which of the following order is correct?
a) Insulin > Proinsulin > Preproinsulin
b) Preproinsulin > Insulin > Proinsulin
c) Proinsulin > Preproinsulin > Insulin
d) Preproinsulin > Proinsulin > Insulin
View Answer

Answer: d
Explanation: Insulin is made up of two peptide chains referred to as A chain and B chain. A and B chains are linked together by disulfide bonds and an additional disulfide bond is formed within A chain.

11. What is the beta subunit of the insulin receptor?

a) Protein kinase
b) Tyrosine kinase
c) Tryptophan kinase
d) Taurine kinase
View Answer

Answer: b
Explanation: Tyrosine kinase is an enzyme that can transfer a phosphate group from ATP to a protein in the cell. It functions as an on or off switch in many cellular functions.

12. What do delta cells secrete?
a) Cortisol
b) Glucose
c) Pancreatic enzyme
d) Somatostatin
View Answer

Answer: d
Explanation: Somatostatin is also known as growth hormone. It is a peptide hormone. Somatostatin is secreted by delta cells.

13. What is the function of GLUT 4?
a) Glucose transport
b) Glycogen transport
c) Insulin transport
d) Glucagon transport
View Answer

Answer: a
Explanation: GLUT 4 is the insulin regulated glucose transporter found primarily in adipose tissues and striated muscle.

14. Hyperglycemia is a condition of high blood glucose.
a) True
b) False
View Answer

Answer: a

Explanation: Hyperglycemia is an abnormally high blood glucose level. It is a sign of diabetes. The main symptoms are increased thirst and frequent need to urinate.

1. Holoenzyme is made of
   a. Apoenzyme and Zymogen
   b. Apoenzyme and Co-enzyme
   c. Co-enzyme and Prosthetic group
   d. Prosthetic group and Co-factor
2. Which of the following organelle is called 'Suicidal Bag'
   a. Mitochondria
   b. Endoplasmic reticulum
   c. Lysosome
   d. Ribosome
3. Most abundant blood cells in the human body are
   a. WBCs
   b. RBCs
   c. Platelets
   d. Plasma Cells
4. Number of iron atoms in one haemoglobin molecule are
   a. 1
   b. 3
   c. 4
   d. 8
5. Which of the following is not a co-enzyme-
   a. NAD
   b. NADP
   c. FAD
   d. Mn^{++}
6. Activity of allosteric enzymes are influenced by
   a. Allosteric modulators
   b. Allosteric site
   c. Catalytic site
   d. None of the above
7. In competitive inhibition, inhibitors bears a close structural similarity with the
   a. Co-enzyme
   b. Co-factor
   c. Prosthetic group
   d. Substrate
8. Enzyme acts best at a particular temperature called
   a. Catalytic Temperature
   b. At normal Body temperature
   c. Optimum temperature
   d. None of the above
9. Lock and Key model is also known as
   a. Template model
   b. Induced fit model
   c. Khosland's Model
   d. Enzyme-substrate interaction model
10. Which bond is not associated with Enzyme-substrate interaction -
   a. Hydrogen bonds
   b. Ionic bonds
   c. Di-sulfide bonds
   d. Van deer Waal's force of attraction
11. Which of the following statement is incorrect
   a. Enzymes are protein in nature
   b. Enzymes are colloidal in nature
   c. Enzymes are thermolabile
   d. Enzymes are inorganic catalyst
12. Apoenzymes dissociates from co-enzymes due to
   a. Change in pH
   b. Change in temperature
   c. Change in substrate concentration
   d. Change in inhibitor concentration
13. Which of the following enzyme inhibitions shows decreased Km Value ?
   a. Competitive inhibition
   b. Un-competitive inhibition
   c. Non-competitive inhibition
   d. Feed back inhibition

14. Amount of total blood volume in an individual is approximately-
    a. 50 ml/Kg body weight
    b. 60 ml/Kg body weight
    c. 90 ml/Kg body weight
    d. 80 ml/Kg body weight
15. Normal blood pH is
    a. 7.3
    b. 7.2
    c. 7.4
    d. 8.4
16. Haematocrit value is the ratio of
    a. WBC to plasma
    b. Platelets to plasma
    c. RBCs to plasma
    d. Total blood cells to plasma
17. Plasma represents_____percent of total blood volume
    a. 35
    b. 45
    c. 55
    d. 5
18. Normal amount of plasma protein ranges from
    a. 2.2-4.3 gm%
    b. 4.4-6.3 gm%
    c. 6.4-8.3 gm%
    d. 8.4-10.2 gm%
19. Which component of protein contribute to maximum percentage to total plasma protein
    a. Albumin
    b. Globulin
    c. Fibrinogen
    d. Prothrombin
20. Serum does not contain
    a. Calcium
    b. Prothrombin
    c. Factor VIII
    d. Factor-X
21. Combination of heam with O_2 is called
    a. Oxyhaemoglobin
    b. Oxidation
    c. Oxygenation
    d. Oxidized haem
22. Adult haemoglobin contains_____polypeptide chains
    a. 2α,2γ
    b. 2α,2β
    c. 2α,2δ
    d. 2β,2γ
23. Each haemoglobin molecules carries_____number of O_2 molecules
    a. 2
    b. 4
    c. 1
    d. 8
24. Each gram% of haemoglobin, when fully saturated, can carry_____ml of O_2
    a. 1.34 ml
    b. 3.14 ml
    c. 4.13 ml
    d. 5ml
25. In Sickle cell anaemia, the defect lies in which polypeptide
    a. Alpha chain
    b. Beta chain
    c. Gamma chain
    d. Delta chain
26. Average mean corpuscular diameter is_____µm
    a. 5.1
    b.6.3
    c. 7.3
    d. 8.5
27. Increase in RBC count beyond 10 million per cu mm is known as
    a. Anisocytosis
    b. Poikilocytosis
    c. Polycythemia
    d. Leucocytosis
28. During erythropoiesis haemoglobin first appears in
    a. Early normoblast
    b. Intermediate normoblast

c. Late normoblast
d. Pronormoblast

29. During hypoxia Kidney releases
a. Renin
b. Renal Erythopoietic factor
c. Erythropoietin
d. None of the above

30. Intrinsic factor is secreted by
a. Liver
b. Chief cells of stomach
c. Parietal cells of stomach
d. Beta cells of pancreas

31. Which of the following extrinsic factor is required for maturation of RBCs
a. Vit B_{12}
b. Folic acid
c. Iron
d. Both (a) and (b)

32. Largest WBCs in peripheral blood is
a. Neutrophil
b. Large lymphocyte
c. Monocyte
d. Eosinophil

33. The process by which WBCs squeeze through pores in capillary wall is
a. Chemotaxis
b. Pinocytosis
c. Opsonization
d. Diapedesis

34. Smallest blood cell is
a. Small lymphocyte
b. Platelet
c. RBC
d. Neutrophil

35. Commonest anaemia in India is
a. Pernicious anaemia
b. Sickle cell anaemia
c. Iron deficiency anaemia
d. None of the above

36. The term ER was coined by
a. Camillo Golgi
b. Porter
c. Robert Brown
d. Benda

37. Which of the following organelle has a continuous connection with nuclear membrane
a. Golgi apparatus
b. Lysosome
c. RER
d. SER

38. In RER, ribosomes are located on
a. the cytoplasmic side
b. on the luminal side
c. both (a) and (b)
d. all throughout

39. Which of the following statements were true regarding ER
a. ER provides structural framework to the cell
b. ER acts as intra cellular transporting system
c. SER is involved in the synthesis of lipid
d. All of the above

40. Which of the following statements are correct regarding Golgi apparatus
a. sorting and packaging
b. exocytosis of melanin granules
c. exocytosis of thyroxine hormone
d. all of the above

41. The term Golgi apparatus was coined by
a. Camillo Golgi
b. Robert Brown
c. Robert Hook
d. Benda

42. F_0-F_1 Particles are located on
a. Thylakoids
b. inner mitochondrial membrane

c. Golgian vacuoles
d. None of the above

43. In mitochondria cristae act as sites for
    a. protein synthesis
    b. phosphorylation of flavoproteins
    c. breakdown of macromolecules
    d. Oxidation–reduction reaction

44. Mitochondrial inner membrane is rich in which phospholipid
    a. Phosphatidyl inositol
    b. Phosphatidyl serine
    c. Cardiolipin
    d. Phosphatidyl choline

45. Which of the following is NOT a function of mitochondrion
    a. electron transport and associated ATP production
    b. Fatty acid breakdown
    c. non-shivering thermogenesis
    d. glycolysis and associated ATP production

46. Who coined the term mitochondria
    a. Kolliker
    b. Benda
    c. Fleenming
    d. Robert Brown

47. Nucleus was first discovered by
    a. Robert Hook
    b. Strasburger
    c. Robert Brown
    d. None of the above

48. Nuclear membrane is in continuous connection with
    a. SER
    b. RER
    c. Golgi apparatus
    d. Lysosomes

49. The number of nuclear pores depends on
    a. Size of cells
    b. Transcriptional activity of the cell
    c. DNA content of the cell
    d. all of the above

50. The DNA Protein ratio in chromatin is
    a. 3:1
    b. 2:1
    c. 1:1
    d. 4:1

51. The function of nucleolus is
    a. RNA synthesis
    b. DNA synthesis
    c. Histone synthesis
    d. Ribosomal subunit synthesis

52. The basic protein of the nucleus are
    a. nucleohistones
    b. nuceoprotamines
    c. both (a) and (b)
    d. none of these

53. Lysosomes are present in all except
    a. muscle cells
    b. acinar cells
    c. erythrocytes
    d. hepatocytes

54. Which of the following is the function of lysosomes
    a. autophagy
    b. autolysis
    c. digestion
    d. all of the above

55. Lysosomes are involved in
    a. Extracellular digestion
    b. Intracellular digestion
    c. both (a) and (b)
    d. none of the above

56. Who identified lysosome
    a. Novikoff
    b. Claude
    c. Palade
    d. none of the above
57. All the following has ribosomes except
    a. nucleus
    b. mitochondrion
    c. chloroplast
    d. cytoplasm
58. In 70S ribosome 'S' stands for
    a. S.I unit
    b. Solubility factor
    c. Svedberg unit
    d. None of the above
59. 80S ribosomes are found in
    a. Eukaryotes
    b. Prokaryotes
    c. Both eukaryotes and Prokaryotes
    d. Eukaryotic plant cells
60. The subunits of 80S ribosomes include
    a. 40S and 50S
    b. 30S and 50S
    c. 40S and 60S
    d. 20S and 60S
61. The subunits of 70S ribosomes include
    a. 40S and 50S
    b. 30S and 40S
    c. 30S and 50S
    d. 20S and 50S
62. 70S ribosomes occur in
    a. Viruses
    b. prokaryotes
    c. eukaryotic plant cells
    d. eukaryotic animal cells
63. Ribosomes are made up of
    a. RNA only
    b. RNA and Proteins
    c. RNA,DNA and Proteins
    d. nucleic acids, proteins and lipids
64. The rough ER is specially well developed in cells actively engaged in
    a. Protein synthesis
    b. Nucleotide synthesis
    c. Lipid synthesis
    d. Secretory functions
65. The nucleus contains
    a. Mitochondria
    b. Golgi apparatus
    c. Chromosomes
    d. Lysosomes
66. Plasma membrane is
    a. Permeable
    b. Selectively permeable
    c. Impermeable
    d. Semi-permeable
67. Most accepted structural model of plasma membrane is
    a. Sandwitch model
    b. Unit membrane model
    c. Lamellar model
    d. Fluid-mosaic model
68. Plasma membrane is composed of
    a. Glycoproteins
    b. Lipoproteins
    c. Chromoproteins
    d. Lipids
69. Ribosomes contain maximum amount of
    a. Steriods
    b. Lipids
    c. RNA
    d. DNA
70. Which structure is present in animal cell but is absent from plant cell ?
    a. Centrioles
    b. Golgi apparatus

c. Mitochondria
d. Endoplasmic reticulum

71. A unit membrane is about :
a. 50-60 Å thick
b. 60-75 Å thick
c. 75-100 Å thick
d. 100-120 Å thick

72. The enzymes which break up starch into sugar are called
a. Hydrolases
b. Amylases
c. Lipases
d. Nucleases

73. Apoenzyme is a
a. Protein
b. Carbohydrate
c. Vitamin
d. Amino acid

74. Coenzyme is :
a. Always a protein
b. Often a metal
c. Always an inorganic compound
d. Often a vitamin

75. Enzymes are named after their substrates by adding suffix :
a. -in
b. -ase
c. -ose
d. -sin

76. Enzyme exist in the cells as-
a. Solid
b. Crystals
c. Colloid
d. None of the above

77. An enzyme brings about :
a. Reduction in activation energy
b. Increase in reaction time
c. Increase in activation energy
d. All the above

78. Which of the following statement is "NOT' correct
a. All enzymes are thermolabile
b. All enzymes are biocatalysts
c. All enzymes are proteins
d. All proteins are enzymes

79. Who discovered blood groups
a. F. Galton
b. Carl Linnaeus
c. Edward Jenner
d. C. Landsteiner

80. Enzymes bringing about hydrolysis of esters and peptides are :
a. Transferases
b. Lyases
c. Hydrolases
d. All of the above

81. Aerobic respiration is performed by :
a. Glyoxisomes
b. Mitochondria
c. Lysosomes
d. Chloroplast

82. Bile reduces the surface tension and causes
a. Emulsification of fat
b. Digestion of fat
c. Absorption of fat
d. All of the above

83. Dialysis causes
a. Separation of colloids from crystalloids
b. Purification of colloids
c. Precipitation of colloids
d. None of the above

84. Ultrafiltration helps in
a. Formation of Glomerular filtrate
b. Formation of urine
c. Accumulation of proteins
d. Separation of vitamins

85. pH of RBC is lower due to
a. Na^+-K^+ Pump action
b. Gibb's Donnan Effect
c. Efflux of OH^- from RBC
d. None of the above

86. Gibb's Donnan effect creates
a. Diffusion
b. Surface tension
c. Osmotic pressure
d. None of the above

87. Transmembrane potential results due to
a. Donnan Effect
b. Influx and efflux of oppositely charged ions
c. Retention of anions inside the membrane
d. All the above

88. Rate of diffusion of a substance depends on
a. Presence of semi-permeable membrane
b. Concentration gradient of solute
c. Concentration of solvent
d. Concentration of ions

89. Homeostasis means
a. Control of internal environment of the body
b. Adaptation with the environment
c. Constant environment of the body
d. All of the above

90. Diffusion is more rapid in
a. Solid
b. Liquid
c. Gas
d. Mixture of liquid and gas

91. In Osmosis, movement of _____ occurs through the semi-permeable membrane
a. Solvent
b. Solute
c. Both (a) and (b)
d. All the above

92. Viscosity of blood increases with rise in
a. Albumin
b. Globulin
c. Fibrinogen
d. Prothrombin

93. Osmotic pressure across the capillary wall is exerted by
a. Size of the molecule
b. Shape of the molecule
c. Concentration of the molecule
d. All the above

94. Effect of change of temperature on viscosity involves
a. Increase in viscosity
b. Decrease in viscosity
c. No change
d. Both (a) and (b)

95. pH means
a. $-\log [H^+]$
b. $-\log_{10} [H^+]$
c. $-\log [H]$
d. $\log [H^+]$

96. Microcytic anaemia develops in
a. Vit B_{12} deficiency
b. Folic acid deficiency
c. Both (a) and (b)
d. None of the above

97. Extrinsic system of blood clotting is initiated by
a. Factor-III
b. Factor-VIII
c. Factor-II
d. Factor-I

98. One of the following is NOT an anticoagulant
1a. Heparin
b. Protein-C

c. Antithrombin-III
d. Thrombin

99. Following are the membrane bound cell organelles except
a. Endoplasmic reticulum
b. Lysosome
c. Ribosomes
d. Peroxisome

100. The intrinsic protein present in the cell membrane mainly functions as
a. Enzymes
b. Carrier
c. Pores
d. Channels

ANSWERS

1.(b) 2.(c) 3.(b) 4.(c) 5.(d) 6.(a) 7.(d) 8.(c) 9.(a) 10.(c) 11.(d) 12.(a) 13.(a) 14.(d) 15.(c) 16.(c)
17.(c) 18.(a) 19.(a) 20.(a) 21.(a) 22.(b) 23.(d) 24.(b) 25.(b) 26.(c) 27.(c) 28.(b) 29.(b)
30.(c) 31. (d) 32.(c) 33.(d) 34.(b) 35.(c) 36.(b) 37.(c) 38.(a) 39.(d) 40.(d) 41.(a) 42.(b)
43.(d) 44.(c) 45.(d) 46. (b) 47.(c) 48.(b) 49.(b) 50.(c) 51.(d) 52.(c) 53.(c) 54.(d) 55.(c)
56.(a) 57.(a) 58.(c) 59.(a) 60.(c) 61.(c) 62.(b) 63.(b) 64.(a) 65.(c) 66.(b) 67.(d)
68.(b) 69.(c) 70.(a) 71.(c) 72.(b) 73.(a) 74.(d) 75.(b) 76.(c) 77.(a) 78.(d) 79.(d) 80.(c) 81.(b)

82.(d) 83.(a) 84.(a) 85.(b) 86.(c) 87.(a) 88.(b) 89.(c) 90.(c) 91.(a) 92.(a) 93.(c) 94.(d) 95.(b)

96.(c) 97.(a) 98.(d) 99.(c) 100.(a)