1. Which of the following statement is correct about membrane cholesterol?
   (A) The hydroxyl group is located near the center of the lipid layer
   (B) Most of the cholesterol is in the form of a cholesterol ester
   (C) The steroid nucleus form forms a rigid, planar structure
   (D) The hydrocarbon chain of cholesterol projects into the extracellular fluid
   ans - c

2. Which one is the largest particulate of the cytoplasm?
   (A) Lysosomes
   (B) Mitochondria
   (C) Golgi apparatus
   (D) Endoplasmic reticulum
   ans - b

3. The absorption of intact protein from the gut in the fetal and newborn animals takes place by
   (A) Pinocytosis
   (B) Passive diffusion
   (C) Simple diffusion
   (D) Active transport
   ans - a

4. Which one of the following is a rate limiting enzyme of gluconeogenesis?
   (A) Hexokinase
   (B) Phosphofructokinase
   (C) Pyruvate carboxylase
   (D) Pyruvate kinase
   ans - c

5. ATP is ‘wasted’ in Rapoport-Lueberring cycle in RBCs as otherwise it will inhibit
   (A) Phosphoglucomutase
   (B) Phosphohexo isomerase
   (C) Phosphofructo kinase
   (D) Phosphoenol pyruvate carboxy kinase
   ans - c

6. Two conditions in which gluconeogenesis is increased are
   (A) Diabetes mellitus and atherosclerosis
   (B) Fed condition and thyrotoxicosis
   (C) Diabetes mellitus and Starvation
   (D) Alcohol intake and cigarette smoking
   ans - c

7. The absorption of glucose in the digestive tract
   (A) Occurs in the small intestine
   (B) Is stimulated by the hormone Glucagon
(C) Occurs more rapidly than the absorption of any other sugar
(D) Is impaired in cases of diabetes mellitus
ans - a

8. Glucokinase
(A) Is widely distributed and occurs in most mammalian tissues
(B) Has a high km for glucose and hence is important in the phosphorylation of glucose primarily after ingestion of a carbohydrate rich meal
(C) Is widely distributed in Prokaryotes
(D) None of these
ans - b

9. All of the following statements about proline are true except
(A) It is an amino acid
(B) It can be synthesized from glutamate
(C) It can be catabolized to glutamate
(D) Free proline can be hydroxylated to hydroxyproline
ans - d

10. Non-Protein amino acids are
(A) Ornithine
(B) β-alanine
(C) γ-amino butyric acid
(D) All of these
ans - a

11. Maple syrup urine diseases is an inborn error of metabolism of
(A) Sulphur-containing amino acids
(B) Aromatic amino acids
(C) Branched chain amino acids
(D) Dicarboxylic amino acids
ans - c

12. An organ which is extremely sensitive to ammonia toxicity is
(A) Liver
(B) Brain
(C) Kidney
(D) Heart
ans - b

13. Ammonia is transported from muscles to liver mainly in the form of
(A) Free ammonia
(B) Glutamine
(C) Asparagine
(C) Alanine
ans - d
14. The major site of urea synthesis is
   (A) Brain
   (B) Kidneys
   (C) Liver
   (D) Muscles
   ans - b

15. All the following statements about phenylketonuria are correct except
   (A) Phenylalanine cannot be converted into tyrosine
   (B) Urinary excretion of phenylpyruvate and phenyllactate is increased
   (C) It can be controlled by giving a low phenylalanine diet
   (D) It leads to decreased synthesis of thyroid hormones, catecholamines and melanin
   ans - d

16. After digestion amino acids
   (A) Are absorbed into portal circulation
   (B) Are absorbed into lymph
   (C) Are excreted to the extent of 50%
   (D) Converted into glucose in the intestine
   ans - a

17. Cephalin consists of
   (A) Glycerol, fatty acids, phosphoric acid and choline
   (B) Glycerol, fatty acids, phosphoric acid and ethanolamine
   (C) Glycerol, fatty acids, phosphoric acid and inositol
   (D) Glycerol, fatty acids, phosphoric acid and serine
   ans - b

18. Glycosphingolipids are a combination of
   (A) Ceramide with one or more sugar residues
   (B) Glycerol with galactose
   (C) Sphingosine with galactose
   (D) Sphingosine with phosphoric acid
   ans - a

19. The importance of phospholipids as constituent of cell membrane is because they possess
   (A) Fatty acids
   (B) Both polar and non-polar groups
   (C) Glycerol
   (D) Phosphoric acid
   ans - b

20. Carnitine is synthesized from
   (A) Lysine and methionine
   (B) Glycine and arginine
21. Increased urinary indole acetic acid is diagnostic of
(A) Maple syrup urine disease
(B) Hartnup disease
(C) Homocystinuria
(D) Phenylketonuria
ans - b

22. An important feature of maple syrup urine disease is
(A) Patient can not be treated by dietary regulation
(B) Without treatment death of patient may occur by the end of second year of life
(C) Blood levels of leucine, isoleucine and serine are increased
(D) Excessive brain damage
ans - d

23. Atherosclerosis and coronary heart diseases are associated with the diet:
(A) High in total fat and saturated fat
(B) Low in protein
(C) High in protein
(D) High in carbohydrate
ans - a

24. Cerebrovascular disease and hypertension is associated with
(A) High calcium intake
(B) High salt intake
(C) Low calcium intake
(D) Low salt intake
ans - b

25. Clinical jaundice is present with an icteric index above
(A) 4
(B) 8
(C) 10
(D) 15
ans - d

26. Vitamins are
(A) Accessory food factors
(B) Generally synthesized in the body
(C) Produced in endocrine glands
(D) Proteins in nature
ans - a
27. A poor source of Vitamin D is
   (A) Egg
   (B) Butter
   (C) Milk
   (D) Liver
   ans - c

26. Richest source of Vitamin D is
   (A) Fish liver oils
   (B) Margarine
   (C) Egg yolk
   (D) Butter
   ans - a

27. Deficiency of vitamin D causes
   (A) Ricket and osteomalacia
   (B) Tuberculosis of bone
   (C) Hypothyroidism
   (D) Skin cancer
   ans - a

28. Vitamin K is involved in post-translational modification of the blood clotting factors by acting as co-factor for the enzyme:
   (A) Carboxylase
   (B) Decarboxylase
   (C) Hydroxylase
   (D) Oxidase
   ans - a

29. Tocopherols prevent the oxidation of
   (A) Vitamin A
   (B) Vitamin D
   (C) Vitamin K
   (D) Vitamin C
   ans - a

30. Acute pancreatitis is characterized by
   (A) Lack of synthesis of zymogen enzymes
   (B) Continuous release of zymogen enzymes into the gut
   (C) Premature activation of zymogen enzymes
   (D) Inactivation of zymogen enzymes
   ans - c

31. All the enzymes of glycolysis pathway are found in
   (A) Extra-mitochondrial soluble fraction of the cell
   (B) Mitochondria
32. The enzymes of the citric acid cycle are located in
(A) Mitochondrial matrix
(B) Extra-mitochondrial soluble fraction of the cell
(C) Nucleus
(D) Endoplasmic reticulum
ans - a

33. The initial step of the citric acid cycle is
(A) Conversion of pyruvate to acetyl-CoA
(B) Condensation of acetyl-CoA with oxaloacetate
(C) Conversion of citrate to isocitrate
(D) Formation of α-ketoglutarate catalyzed by isocitrate dehydrogenase
ans - b

34. When ATP forms AMP
(A) Inorganic pyrophosphate is produced
(B) Inorganic phosphorous is produced
(C) Phosphagen is produced
(D) No energy is produced
ans - a

35. The correct sequence of cytochrome carriers in respiratory chain is
(A) Cyt b—cyt c—cyt c1—cyt aa3
(B) Cyt aa3—cyt b—cyt c—cyt c1
(C) Cyt b—cyt c1—cyt c—cyt aa3
(D) Cyt b—cyt aa3—cyt c1—cyt c
ans - c

36. A component of the respiratory chain in mitochondria is
(A) Coenzyme Q
(B) Coenzyme A
(C) Acetyl coenzyme
(D) Coenzyme containing thiamine
ans - a

37. The redox carriers are grouped into respiratory chain complex
(A) In the inner mitochondrial membrane
(B) In mitochondrial matrix
(C) On the outer mitochondrial membrane
(D) On the inner surface of outer mitochondrial membrane
ans - a
38. Porphyrins are synthesized in
(A) Cytosol
(B) Mitochondria
(C) Cytosol and mitochondria
(D) Rough endoplasmic reticulum
ans -c

39. Heme is synthesized from
(A) Succinyl-CoA and glycine
(B) Active acetate and glycine
(C) Active succinate and alanine
(D) Active acetate and alanine
ans - a

40. The immunoglobulins are differentiated and also named on the basis of
(A) Electrophoretic mobility
(B) Heat stability
(C) Molecular weight
(D) Sedimentation coefficient like 7 S, 19 S etc.
ans - d

41. The immunoglobulins are classified on the basis of
(A) Light chains
(B) Heavy chains
(C) Carbohydrate content
(D) Electrophoretic mobility
ans - b

42. Hormone that binds to intracellular receptor is
(A) Adrenocorticotropic hormone
(B) Thyroxine
(C) Follicle stimulating hormone
(D) Glucagon
ans - b

43. Hormone that bind to cell surface receptor and require the second messenger camp is
(A) Antidiuretic hormone
(B) Cholecystokinin
(C) Calcitriol
(D) Gastrin
ans - a

44. The chief metabolite of catecholamines is
(A) Metanephrine
(B) Normetanephrine
(C) 3, 4-Dihydroxymandelic acid
(D) Vanillylmandelic acid
ans - d

45. Epinephrine increases all of the following except
(A) Glycogenolysis in muscles
(B) Lipolysis in adipose tissue
(C) Gluconeogenesis in muscles
(D) Glucagon secretion
ans - c

46. Epinephrine decreases
(A) Glycogenesis
(B) Glycogenolysis
(C) Gluconeogenesis
(D) Lipolysis
ans - a

47. Epinephrine increases the concentration of free fatty acids in plasma by increasing
(A) Extra-mitochondrial fatty acid synthesis
(B) Mitochondrial fatty acid chain elongation
(C) Microsomal fatty acid chain elongation
(D) Lipolysis in adipose tissue
ans - d

48. The second messenger for glucocorticoids is
(A) Cyclic AMP
(B) Cyclic GMP
(C) Inositol triphosphate
(D) No second messenger is required
ans - d

49. Steroid hormones are synthesized from
(A) Cholesterol
(B) 7-Dehydrocholesterol
(C) Calcitriol
(D) 7-Hydroxycholesterol
ans - a

50. Secretion of glucocorticoids is regulated by all the following except
(A) Hypothalamus
(B) Anterior pituitary
(C) Feedback control by blood glucose
(D) Feedback control by glucocorticoids
ans - c