KGMC PRE PROFF PAPER A 2021

3. Apoptosis involves

a) Assembling of cytoskeleton
b) Inactivation of proteases
c) Process of necrosis
d) Shrinkage of cell
e) Swelling of cell
Correct Answer: **D**

4. pinocytosis involves

a) Accumulation of calcium ions in intracellular fluid
b) Evagination of the pit outwards
c) Ingestion of particles by large vesicles
d) Process of opsonization
e) Utilization of ATP
Correct Answer: **C**

5. The benefit of giving glucose with sodium during oral rehydration therapy is due to the fact that it

a) Facilitates transport of sodium by co-transport
b) Gives energy to the patient
c) Inhibits chloride channels in intestinal cells
d) Treats dehydration more rapidly
e) Treats coexisting hypoglycemia in patients

6. Peroxisomes are different from lysosomes in that they

a) Are formed from Golgi apparatus
b) Are vesicular organelles
c) Contain hydrolases like lipases, phosphatases, glycosidases
d) Contain enzyme that form hydrogen peroxide
Correct Answer: **D**

8. The following protein have ATPase activity

a) Actin
b) Clathrin
c) Dynein
d) Myosin
e) Opsonin
Correct Answer: **D**

9. Cell size is determined almost entirely by

a) ATP produced by mitochondria

b) Cytoplasm in the cell
c) Functioning DNA in nucleus
d) Phagocytosis and endocytosis
e) Pinocytosis and phagocytosis

10. The process in which cells die as a result of an acute injury by swelling and bursting due to loss of cell membrane integrity is called

a) Apoptosis
b) Hydrolysis
c) Necrosis
d) Osmosis
e) Thrombolysis
Correct Answer: **C**

11. Enzymes involved in detoxification of drugs reside in which organelle of the cell

a) Golgi apparatus
b) Mitochondria
c) Microtubules
d) Rough endoplasmic reticulum
e) Smooth endoplasmic reticulum
Correct Answer: **E**

12. Zellwegar syndrome is due to the inherited absence of – **Peroxisomes**

13. The organelle damaged in Parkinson's disease is – **Mitochondria**

14. In colloidal solution of starch, the dispersed phase and dispersed medium are – **Solid (starch) and liquid (water)**

15. Tyndall effect is shown by **colloids**

16. Henderson Hassal balch equation

$$\text{pH} = \text{pK}_a + \log \frac{[conjugate\ base]}{[weak\ acid]} \text{ (for weak acid)}$$

$$\text{pOH} = \text{pK}_b + \log \frac{[conjugate\ acid]}{[weak\ base]} \text{ (for weak base)}$$

17. Mucopolysaccharidoses are hereditary lysosomal storage diseases. They are caused by **defect in degradation of glycosaminoglycans (GAG)**

Explanation: Mucopolysaccharidoses caused by deficiency of lysosomal enzyme α-L-iduronidase which leads to progressive accumulation of GAGs

18. An L-isomer of monosaccharide formed by human body is: **L-Xylulose**

19. The carbon atom which becomes assymetric when the straight chain form of monosaccharide changes into ring form is known as – **Epimeric carbon atom**

20. The glycosaminoglycan which does not contain uronic acid is – **Keratan sulfate**

21. The adenine base present in nucleotide is attached to C1 of pentose sugar by glycosidic linkage with position no.

a) 1 of purine
b) 2 of purine
c) 3 of purine
d) 5 of purine
e) 9 of purine

22. Chemically nucleotides are composed of Purine or pyrimidine base + Sugar+ Phosphate

23. The DNA molecules are stable and inactive due to the sugar moiety, which are prevented from fermentation by

a) Arrangements of nitrogenous bases inside the helix
b) Arrangements of phosphate and ribose sugar outside in the double strands
c) Double helical structure
d) H bonds between two strands of DNA
e) Presence of hydrogen at C2 of pentose sugar

24. Mitochondrial DNA is – **circular double stranded**

25. Supine position is when a person is lying on his back

26. Median sagittal plane divides body into right and left halves

27. The horizontal plane is also called transverse plane

28. Rotation is the movement that results when

a) Posterior surface of part facing medially
b) Anterior surface of part facinf medially
c) Folding occurs in different parts of the body
d) Unfolding of different parts of the body
Correct Answer: **B**

Explanation:

Rotation is the term applied to the movement of a part of body around its long axis.

Medial rotation is the movement that results in anterior surface of the part facing medially

Lateral rotation is the movement that results in anterior surface of the part facing laterally

29. The term ipsilateral means – lying on the same side of body

30. The skin appendages include sweat glands, nails, and the pilosebaceous unit of the skin, comprised of the hair shaft, hair follicle, sebaceous gland, and arrector pili muscle

31. Skin creases

a) These are folds of skin over joint
b) Have more thicker skin comparatively
c) Are sometimes called tension lines
d) Incision parallel to skin crease heals slowly
CORRECT ANSWER: **A**

32. The cell helping in skin pigmentation is – **melanocyte**

33. Tension lines of skin

a) Corresponds to pattern of fibers in dermis
b) Are resulted from epidermal fibers
c) Are related to muscles contraction
d) Are due to joint flexion
e) Are due to joint extension
CORRECT ANSWER: **A**
EXPLANATION: Skin tension lines reflect internal tension within the skin and are mainly produced by the connective tissue of the dermis, superimposed by external tension.

34. The epidermis is extremely thick on palms of hand and soles of feet

35. The compartments in limb are formed by extension of **deep fascia**

36. Epimysium is a layer of connective tissue which surrounds the muscle

37. Regarding pregnancy the total duration of pregnancy when counted from fertilization is about **38 weeks**

38. Maturation of ovum completes **when it is fertilized**

39. During 2nd week of development, two germ layers are formed

40. **Brain** is formed from ectoderm

41. Which of the following structure formed from endoderm

a) Lining epithelium of ileum
b) Muscles of stomach
c) Muscles of heart
d) Lining epithelium of artey
e) Lining epithelium of vein
Correct answer: **A**
EXPLANATION: Epidermis is derived from the ectoderm.
The lining of gastrointestinal tract is derived from endoderm.
And, the inner linings of body cavities are derived from mesoderm.

42. The ectopic pregnancy commonly takes place in the **ampulla of uterine tube**

43. The haploid number of chromosome in humans are **23** chromosomes

44. Mesoderm helps in development of **heart**

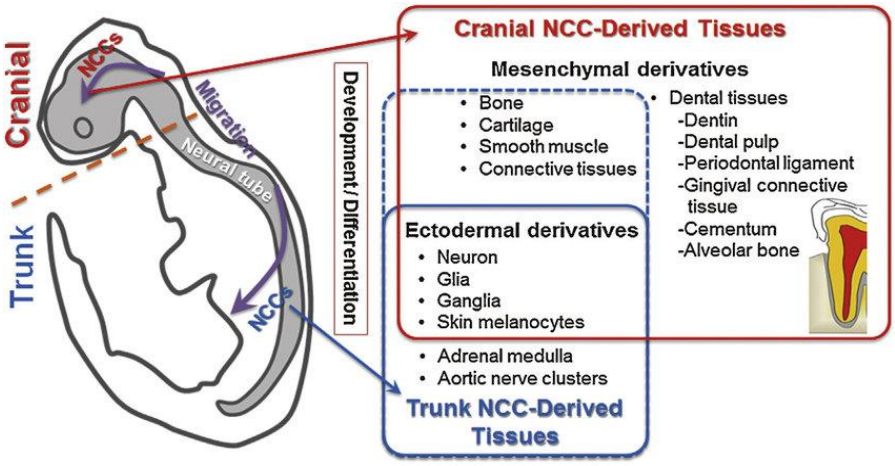
45. Nucleus pulposus helps in formation of **intervertebral disc**

46. Haploid number of chromosomes are present in **secondary spermatocyte**

47. Artery develops from **mesoderm**

48. Adrenal medulla is derived from neural crest cells

EXTRA INFO



In the early embryo, the neural tube is formed and epithelial cells at the dorsal region of the neural tube undergo an epithelial-to-mesenchymal transition to become migratory NCCs. NCCs migrating from cranial and trunk regions of the neural tube differentiate into many diverse derivatives of mesenchymal- and ectodermal-lineage cells and tissues. In craniofacial development, cranial NCCs contribute to ectodermal tissues and mesenchymal tissues, including dental mesenchyme components, such as the dentin, dental pulp, periodontal ligament, gingival connective tissue, cementum, and alveolar bone. Trunk NCCs differentiate mainly into neurons and glial cells of the peripheral nervous system. A small mesenchymal contribution by trunk NCCs has also been reported.

49. Second week of development give rise to formation of **epiblast**

50. Ectoderm give rise to **epidermis**

51. Umbilical cord has two arteries and one vein

52. Which one of the following describes the mechanism by which sebum is produced

a) Apocrine
b) Cytocrine
c) Eccrine
d) Paracrine

Correct Answers: **A**

53. A connexon is a structural component of **gap junction**

54. The most abundant protein present in basement membrane is Type IV collagen

55. The type of collagen most commonly present in lamina densa is Collagen Type IV

56. A modification of cell surface contains tiny actin filaments that extend parallel to each other. The filaments are attached to each other and to the cell membrane by bundles of protein. The structure most likely is?

a) Villi
b) Microvilli
c) Cilia
d) Stereocilia
e) Flagellum

57. A histologic section of connective tissue shows numerous cells containing large numbers of uniformly sized basophilic granules. The cells are ovoid, with a centrally located nucleus. The cells are most likely?

a) Plasma cells
b) Macrophages
c) Eosinophils
d) Mast cells
e) Fibroblasts

58. A flat sheath of connective tissue that connects muscle to bone is known as **Aponeurosis**

59. The stroma of most lymphoid organs is composed of **reticular connective tissue**

60. Tendons formed by dense regular connective tissue

61. Elastic cartilage present in epiglottis

62. A 29 year old woman, mother of five and lactating at present complains of extreme lethargy and fatigue. Investigations revealed a blood Hb concentration of 9.8 g/dL (normal range 12 – 16 g/dL), a low MCV and low MCHC. Select the most appropriate drug therapy from the options provided is

a) Epoitin alpha
b) Ferrous gluconate
c) Albendazole
d) Folic acid
e) Cyanocobalamin

63. The appropriate alimentary route of administration when passage of drugs through liver is minimized is

a) Oral
b) Transdermal
c) Rectal
d) Intraduodenal
e) Intra gastric

64. A 71-year-old woman had the loss of consciousness that persisted for over becomes an hour. When she arousable, she cannot speak nor move her right arm. A cerebral angiogram revealed an oclusion to her left middle cerebral artery. Months later, a computed tomographic (CT) scan shows a large 5 cm cystic area in her left parietal lobe cortex. This CT finding is most likely the consequence of resolution from one of the following cellular events

a) Liquefactive necrosis
b) Atrophy
c) Coagulative necrosis
d) Caseous necrosis
e) Fat Necrosis

65. About an hour after being bitten by an insect a young boy noticed a localized swelling and erythema in the affected area. The edema is most likely the result of

a) Altered plasma oncotic pressure
b) Venous obstruction
c) Increased vascular permeability
d) Lymphatic obstruction
e) Increased arterial hydrostatic pressure

66, A Person's health and well being is dependent on a good start, good future, goof care and support. These influences, social economical, physical and environmental factors are known

a) Determinants of health
b) Dimensions of health
c) Health care
d) Health promotion
e) Public Health

67. Regarding salient feature of Erythrocytes

a) Fight against infection.
b) Formed in the liver.
c) Involved in blood clotting
d) Lack nucleus.
e) Have multiple nuclei

68. Amongst the following transfusions, the one resulting in immediate transfusion would be:

a) TYpe O, Rh-negative whole blood to an O, Rh-positive patient
b) Type A, Rh-negative whole blood to a B, Rh-negative patient
c) Type AB, Rh-negative whole blood to an AB, Rh-positive patient
d) Type B, Rh-negative whole blood to a B, Rh-negative patient
e) Type B, Rh-negative whole blood to a B, Rh-positive patient

69. Inflammation is an acute response of the tissue to injury. The following is responsible for waling off effect of inflammation.

a) Albumin
b) Alpha globulin
c) Fibrinogen
d) Gamma globulin
e) Prothrombin

70. Walling-off effect of inflammation delays the spread of bacteria or toxic products. The intensity of the inflammatory process is usually proportional to the degree of tissue injury. The inflammation develops more rapidly in

a) All infections irrespective of cause
b) Bacterial infections only
c) Streptococcal infection
d) Staphylococcal infection
e) Viral infections only

71. The skin is mainly impregnable to infectious agents, except when its broken. when infection begins in a subcutaneous tissue and local inflammation ensues, the following form a defense against them

a) Alveolar macrophag
b) Histiocytes
c) Kupffer celis
d) Tissue macrophages
e) Splenic macrophages

72. The macrophages can phagocytze particles that become entrapped in the alveoli. If the particles are digestible, the macrophages can also digest them and release the digestive products into the lymph. If the particle is not digestible, the macrophages end up

a) Filtering the particle
b) Forming giant capsule around the particle
c) Multiplying to attack the particle
d) Phagocytosing the particle
e) Releasing enzymes to digest the particle

73. Predominant site of red blood cell production during second trimester is:

a) Bone marrow
b) Liver
c) C.Lymph nodes
d) Spleen
e) Yolk sac

74. Following is true regarding erythroblastosis fetalis (hemolytic disease of newborn)

a) Erythropoietin level is decreased in fetus
b) Erythropoietin level is increased in fetus.
c) Free hemoglobin level of the fetus is decreased.
d) Increased folic acid level in the fetus.

e) Increased numbers of lymphocytes in the mother.

75. A 12-year-old boy is noted to bleed excessively during a tooth extraction. Following the procedure, examination revealed petechial skin hemorrhages. Blood result shows Hb 13 g/dL. Platelet count of 240 x 10^9/L, slightly elevated APTT and absent Factor VIII activity. Most likely diagnosis is

a) Disseminated intravascular coagulation
b) Hemophilia
c) Leukemia
d) Lymphoma
e) Thrombocytopenia purpura

76. A forty year old female presented with headache, blurring of vision, reddish complexion, she ls noted to have a Hb of 17.8 gm/dL, Platelet count of 200 x 10^9/L, PT/APTT normal. Most likely Diagnosis ls:

a) Hemophilia A.
b) Hemophilia B.
c) Leukemia.
d) Pernicious anemia,
e) Polycythemia vera,

77. Following blood units carries the minimal risk of Inducing an Immediate transfusion reaction in a type B, Rh-positive recipient:

a) Type AB-negative.
b) Type AB-positive.
c) Type A-positive.
d) Type O-positive.
e) Type B-positive.

78. A 69-year-old female is referred to the medical admissions unit due to shortness of breath and lethargy. On examination she is noted to have pale conjunctivae and a clear chest. Blood pressure is 110/60 mmHg, and the pulse rate is 84/min. Blood tests reveal the following. Hb 6gm/dl, MCV 126 fl, Platelets 240 x 10^9/L, WBC 6000 x 10^9/L. Most likely diagnosis:

a) Hemophilia.
b) Iron deficiency anemia.
c) Leukemia.
d) Megaloblastic anemia.
e) Thalassemia.

79. A 42-year-old female presented to Gynae OPD, complaining of easy fatiguability, shortness of breath, menorrhagia. On examination she had marked pallor. The attending doctor advised to have a peripheral smear, which showed, a Hb of 8 gm/dI,wbc cell count 7000 × 10^9/L, platelets 200,000 x 10^9/I, MCH 20 pg, MCV 69 Fi. She is having the following type of Anemia

a) Hemolytic
b) Iron deficiency
c) Macrocylic

d) Megaloblastic
e) normoblastic

80. Allograft - The transplant of an organ, tissue, or cells from one individual to another individual of the same species who is not an identical twin.

81. Humoral antibody formation response is shown by B lymphocytes

82. Correct sequence of events leading to blood clotting: Vasoconstriction, platelet aggregation, Coagulation

83. Granulocytes which kill the parasites and breaks the inflammatory substances: **Eosinophils**

84. The formation of blood clot is known as coagulation

85. Neutrophils are capable of phagocytosis

86. Antigen presenting cells (APC) are a heterogenous group of immune cells that mediate the cellular immune response by processing and presenting antigens. APCs include dendritic cells, macrophages, and B cells

87. The immunological phenomenon by which an individual's T cells do not respond to antigen bound to specific MHC expressed by that individual (i.e. self MHC) is known as: **Immune tolerance**

88. Membrane attack complex in complement pathway: **C5B6789**

89. Polypeptide chain present in globin HbA2 are two alpha chains and two beta chains

90. Acidosis cause crisis in sickle cell anemia because it decrease the solubility of HbS

91. Heme is a complex of Protoporphyrin IX and ferrous ion

92. The two polypeptide chains within a dimer of quaternary structure of Hb are held together by

a) Hydrophobic interaction
b) Polar bonds
c) Hydrogen bonds
d) Hydrophobic interactions and hydrogen bonds

93. On binding of oxygen to Hb, there is rupture in the polar bonds between alpha and veta dimers due to

a) Hb has higher affinity for oxygen
b) Myoglobin has low affinity for oxygen
c) Myoglobin has higher affinity for oxygen
d) Weaker interaction between ionic and hydrogen bond
e) Reversible binding of myoglobin with a single molecule of oxygen

94. The rate limiting step for heme-biosynthesis: formation of ALA, which is catalyzed by ALA synthase

95. Salma, a 45 year old woman, diagnosed as a case of ovarian carcinoma. She is receiving chemotherapy for that. Which of the following vitamin is required to prescribe in conjuction with chemotherapy?

a) Ascorbic acid
b) Cobalamin
c) Folic acid
d) Pantothenic acid
e) Thiamine

96. Alia delivered a baby having neural tube defect. Fediciency of which of the following vitamin is the cause of this condition?

a) Ascorbic acid
b) Biotin
c) Folic acid
d) Niacin
e) Riboflavin

97. A two year old presented with loss of hair, scaly red skin rash. On investigation her biotinidase level was found low which improved with biotin therapy. Biotin is involved in which reaction: **Carboxylation**

98. Eating raw eggs is responsible for biotin deficiency. Which protein is present in raw eggs which binds with biotin and inactivates it?

Ans: **Avidin**

99. Aslam, a 30 year old man came to outpatient department with complaint of burining sensation and numbness in hands and feet coupled with poor coordination. He also complained of tiredness and fatigue. He has the following nutrient deficiency

a) Ascorbic acid
b) Biotin
c) Folic acid
d) Niacin
e) Pantothenic acid

100. Pentothenic acid (Vitamin B_5) is precursor of Coenzyme A

101. Imagine that you are a pathogen in human body. Suddenly a large cell approaches you. The cell "reads" the antigens on your cell membrane, and then it clamps on to you and prevents you from reproducing. In a few hours you die. What kind of cell just killed you

a) Macrophage
b) T cell
c) RBC
d) B cell
e) Mast cell

102. Anodular lymphoid organ is

a) Lymph node
b) Spleen
c) Thymus
d) Palatine tonsils
e) All lymphoid organs have nodules
   Correct Answer: **C**
   Explanation: Lymphatic nodules are prominent in organs such as the tonsils, lymph nodes, and spleen but are absent from the thymus.

103. Primary lymphoid organ is **bone marrow**

104. Cadherens and trans membrane proteins involved with which of the following cell junctions?

a) Hemidesmosomes
b) Focal contacts
c) Tight junctions
d) Zonula adherens
e) Gap junctions

105. A small bean shaped structure that is part of body's immune system is called **lymph node**

106. the classical pathway of complement functions to

a) Cleave immunoglobulins into Fc fragments
b) Facilitate the destruction of microbes
c) Recognize specific epitopes on microbes
d) Regulate lymphocyte development
e) Trigger histamine release

107. Important effector cells in allergic reactions: **Basophils**

108. RBC derived from Myeoloid lineage cells

109. In humans, MHC class 2 molecules are expressed by B cells, dendritic cells and macrophages

110. Vaccines that are similar to the natural infection and help prevent and create a strong and long lasting immune response are called Vaccines that are similar to the natural infection and help prevent and create a strong and long lasting immune response are called **Live attenuated vaccines**

111. Measles vaccine is given to protect against measles. Infants should get 2 doses of measles vaccine. 1st dose at 9 months and 2nd dose at 15 months. The route of administration of measles vaccine is **subcutaneous**

112. If the blood group of mother is O and that of father is AB, then the possible blood group of child can be

113. Literature review is an integral part of entire research process. A researcher conducts a literature review **to understand the topic in context of what is already known**

114. Medical students who sleep for mmore than 8 hours score more as compared to the students who slept less, according to PICO criteria. PICO stands for **patient/population, intervention, comparison and outcomes.**

115. A 16 months old baby is hungry and starts crying. His mother is busy in kitchen and doesn't notice it. After some time the child starts sucking his thumb unintentionally and stops crying. This happens in which stage of congnitive development**: Sensorimotor stage**

Piaget's Stages of Cognitive Development

Stage	Age range	What happens at this stage?
Sensorimotor	0-2 years old	Coordination of senses with motor responses, sensory curiosity about the world. Language used for demands and cataloguing. Object permanence is developed.
Preoperational	2-7 years old	Symbolic thinking, use of proper syntax and grammar to express concepts. Imagination and intuition are strong, but complex abstract thoughts are still difficult. Conservation is developed.
Concrete Operational	7-11 years old	Concepts attached to concrete situations. Time, space, and quantity are understood and can be applied, but not as independent concepts.
Formal Operational	11 years old and older	Theoretical, hypothetical, and counterfactual thinking. Abstract logic and reasoning. Strategy and planning become possible. Concepts learned in one context can be applied to another.

116. Mr. Khan a 20 year old student of Peshawar University presented to the emergency in HMC after being involved in a road traffic accident. He is conscious and alert but has life threatening loss of blood and is refusing blood transfusion. The principles in conflict for the doctor treating him are

a) Autonomy and beneficience
b) Equality and justice
c) Justice and preservation of life
d) Non-maleficence and autonomy
e) Preservation of life and beneficience

117. A medical error has occurred in the course of caring for a patient. Ethically the treating physician should

a) Ask his colleague for help
b) Blame his junior for the error
c) Hide the error from the patient
d) Disclose this information to the patient
e) Refer the patient to other hospital

118. A 21 year old MBA student is appearing in an exam and at the same time she has to prepare for her sister's marriage ceremony. She tries to ignore all thoughts and activities related to wedding ceremony and focus only on study. Which of the following option best describe this approach

a) Altering function
b) Selective function
c) Vigilance
d) Limited capacity function
e) Alternating function

119. if the researcher is interested in finding out the person, place and time characteristics of the sample, the the study is

a) Exploratory
b) Empirical
c) Applied
d) Descriptive
e) Correlational

120. you want to conduct a survey in medical college to observe the smoking habits of students. The epidemiological study design most appropriate in this case is

a) Analytical cross-sectioanal
b) Descriptive cross-sectional
c) Case control
d) Cohort
e) Experimental