**KENYA MEDICAL TRAINING COLLEGE – CLUSTER A**

**DEPARTMENT OF NURSING**

**KECHN MARCH & SEPTEMBER 2020**

**YEAR 1 SEMESTER 1 EXAMINATION**

**ANATOMY & PHYSIOLOGY TAKE AWAY CAT**

**DATE: WENESDAY 16TH DECEMBER 2020**

**Instructions to the candidate**

1. **Read the questions carefully and answer only what is asked**
2. **Indicate your college number and campus on the answer sheet**
3. **All questions are compulsory**
4. **For part (I) multiple Choice questions, choose the correct answer**
5. **For part (II) short Answer Questions, answer then following each other**
6. **For part (III) Long Answer Questions , answer then on separate page**
7. **Omission of wrong or wrong numbering of examination papers, questions or part of the questions will result in 10% deduction of marks score from relevant parts.**
8. **MCQ is 1 mark each**

**PART I : MULTIPLE CHOICE QUESTIONS (MCQs) TOTAL 60 MARKS**

1. Movement of an extremity away from the midline of the body is called
   1. Adduction
   2. Pronation
   3. Flexion
   4. Abduction
2. The following is an example of positive feedback:
3. glucagon raises blood sugar
4. insulin lowers blood glucose
5. a temperature of 100.2F causes a further increase
6. 100.1F is followed by 98.6F
7. The structures called \_\_\_\_\_ are intracellular areas with specific living functions.
   1. inclusions
   2. organs
   3. organelles
   4. macromolecules
8. Which of the following separates the thoracic from abdominal cavities?
   1. pelvis
   2. rib cage
   3. diaphragm
   4. peritoneum
9. The navel is located on the \_\_\_\_\_ surface.
   1. cranial
   2. ventral
   3. dorsal
   4. inferior
10. The arms lie on the \_\_\_\_\_ surface of the trunk.
    1. medial
    2. lateral
    3. distal
    4. posterior
11. Which of the following cell structure directs its overall activities as well as houses its genetic material?
    1. nucleolus
    2. endoplasmic reticulum
    3. nucleus
    4. centrosome
12. During what phase of the cell cycle does DNA replication occur?
    1. mitosis
    2. prophase of mitosis
    3. G2 phase
    4. S phase
13. Chromosomes align midway between centrioles during what phase of mitosis?
    1. prophase
    2. metaphase
    3. anaphase
    4. telophase
14. The movement of particles from an area of higher to lower concentration is called \_\_\_\_\_.
    1. osmosis
    2. diffusion
    3. filtration
    4. active transport
15. The lining of the vagina is covered with \_\_\_\_\_ cells.
    1. mucus, columnar
    2. pseudostratified epithelium
    3. stratified cuboidal
    4. stratified squamous
16. What type of tissue holds most organs together?
    1. adipose
    2. muscular
    3. fibrous connective
    4. loose connective
17. Which term refers to the fact that a tissue has only one layer of cells?
    1. stratified
    2. cuboidal
    3. simple
    4. pseudostratified
18. Myelin sheaths on the outsides of many axons are contributed by \_\_\_\_\_\_\_\_\_\_\_\_\_\_.
    1. the axon itself
    2. secretory vesicles
    3. Schwann cells
    4. the cell bodies of the neuron
19. At resting potential, the ion distribution inside and outside of a neuron is such that \_\_\_\_\_\_\_\_\_\_ ions are most abundant on the outside of the cell, while \_\_\_\_\_\_\_\_\_\_ ions are most abundant on the inside of the cell.
    1. potassium; sodium
    2. sodium; potassium
    3. calcium; phosphate
    4. sulfate; potassium
20. Excessive sleeping is most likely due to the presence of too much of which neurotransmitter?
    1. GABA
    2. norepinephrine
    3. serotonin
    4. dopamine
21. Which of the following is the outermost meninx, and forms supportive and protective partitions between some portions of the brain?
    1. dura mater
    2. arachnoid mater
    3. pia mater
    4. denticulate mater
22. The cerebral hemispheres are connected by the \_\_\_\_\_.
    1. longitudinal fissure
    2. cortex
    3. corpus callosum
    4. brain stem
23. Emotional responses and attitudes are associated with which brain area?
    1. limbic system
    2. hypothalamus
    3. cerebellum
    4. cerebrum
24. The connection between the third and fourth ventricle is called the \_\_\_\_\_.
    1. interventricular foramen
    2. cerebral aqueduct
    3. foramen of Monro
    4. hypothalamus
25. The vital centers are located within which area of the brain.
    1. hypothalamus
    2. cerebral cortex
    3. pons
    4. medulla
26. Heavy pressure and vibrations stimulate \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
    1. proprioceptors
    2. baroreceptors
    3. Meissner's corpusles
    4. Pacinian corpuscles
27. Why do odors sometimes alter our moods?
    1. Because sensory input from olfaction is routed through the limbic system.
    2. Because odors act as neurotransmitters and alter brain chemistry.
    3. Because odors are satisfying to our sense of hunger.
    4. Odors do not alter mood.
28. Loss of the sensation of taste is referred to as \_\_\_\_\_\_\_\_\_\_\_\_\_.
    1. dysosmia
    2. ageusia
    3. hypogeusia
    4. asnosmia
29. The organs of static equilibrium are located within the \_\_\_\_\_\_\_\_\_\_\_\_\_\_ and employ shifting \_\_\_\_\_\_\_\_\_\_\_ to set up nerve impulses.
    1. semicircular canals; gelatinous material
    2. vestibule; otoliths
    3. cochlea; fluid
    4. vestibule; crista ampullaris
30. Which muscle moves the eye towards the midline?
    1. superior oblique
    2. superior rectus
    3. medial rectus
    4. lateral rectus
31. The inner surfaces of the eyelids are lined with \_\_\_\_\_\_\_\_\_\_\_\_\_\_.
    1. conjunctiva
    2. extrinsic eye muscles
    3. dense connective tissue
    4. lacrimal apparatus
32. The chamber that actually houses the hearing receptors is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
    1. vestibule
    2. semicircular canal
    3. scala tympani
    4. cochlear duct
33. The precursor of all lines of blood cells is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
    1. myeloblast
    2. hemocytoblast
    3. proerythroblast
    4. progranulocyte
34. Which dietary component(s) is/are needed for DNA synthesis, and thus greatly influence the production of red blood cells?
    1. calcium
    2. iron
    3. vitamin B12 and folic acid
    4. protein
35. Choose the correct order for the steps of hemostasis.
    1. blood coagulation, platelet plug formation, blood vessel spasm
    2. platelet plug formation, blood coagulation, blood vessel spasm
    3. blood vessel spasm, platelet plug formation, blood coagulation
    4. blood vessel spasm, blood coagulation, platelet plug formation
36. Indicate whether the following statements are True or False
37. The pyloric sphincter acts to prevent food from leaving the small intestine.
38. The so-called wisdom teeth are actually the four last molars.
39. The \_\_\_\_\_\_\_\_\_\_\_\_\_ layer of the alimentary canal contains loose connective tissue, glands, blood and lymphatic vessels, and nerves.
    1. mucosa
    2. submucosa
    3. muscular layer
    4. serosa
40. Activities of the digestive system are generally increased by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ nervous stimulation.
    1. sympathetic
    2. parasympathetic
    3. somatic
    4. autonomic
41. Intrinsic factor is secreted by which cells of the gastric glands?
    1. mucous cells
    2. chief cells
    3. peptic cells
    4. parietal cells
42. During which stage of gastric secretion do gastric glands actually begin secreting gastric juice?
    1. cephalic phase
    2. gastric phase
    3. intestinal phase
    4. enterogastric reflex
43. What is the primary function of the large intestine?
    1. to complete the absorption of most nutrients
    2. to house gas-producing bacteria
    3. to rid the body of toxins
    4. to compact, store, and eliminate feces
44. Where does the greatest amount of digestion occur?
    1. small intestine
    2. stomach
    3. large intestine
    4. liver
45. Which structure does the appendix come off of?
    1. transverse colon
    2. descending colon
    3. ascending colon
    4. small intestine
46. Which vitamin is mainly formed by Escherichia coli?
    1. C
    2. D
    3. B6
    4. K
47. Which of these is a disaccharide?
    1. lactose
    2. glucose
    3. fructose
    4. galactose
48. Erythropoietin
49. Inhibits the production of red blood cells
50. Production is inhibited by testosterone
51. Is produced mainly by the heart
52. Production increases when blood oxygen decreases
53. The part of the brain that controls posture, operates at subconscious level and make movements efficient and coordinated is the
54. Cerebrum
55. Cerebellum
56. Parietal lobe
57. Reticular formation
58. The neurotransmitter that transmits the impulses at neuromuscular junction is called
59. Norepinephrine
60. Noradrenaline
61. Acetylcholine
62. Dopamine
63. The inactive digestive enzyme precursors are
64. Trypsinogen, amylase
65. Chymotrypsinogen, lipase
66. Sucrase, procarboxypeptidase
67. Procarboxypeptidase, trypsinogen
68. Because the small intestine needs bile only a few times a day, bile is stored and concentrated in the:
    1. Pancreas
    2. Gall bladder
    3. Liver
    4. Small intestine
69. The eye muscle supplied by the Abducent nerve (cranial nerve number six) is the;
    1. Medial rectus
    2. Superior rectus
    3. Lateral rectus
    4. Superior Oblique
70. Which of the following is true of red blood cell?
71. It is nucleated.
72. It has a lifespan of 100 days
73. Its production and formation depends on kidney function
74. It is produced in the yellow marrow
75. The cerebrospinal fluid,
76. Is reabsorbed into blood capillaries in the dura mater
77. Is secreted into the subarachnoid space from pia mater capillaries
78. Is found in the ventricles and subarachnoid space
79. Is found in the subarachnoid and epidural space
80. indicate whether the following statements are TRUE or FALSE
81. The central nervous system (CNS) consists of the brain and spinal cord
82. Neuroglias are the supporting cells in the CNS.
83. The peripheral nervous system is subdivided into the autonomic and the somatic nervous systems.
84. Saltatory conduction is much faster than nerve impulses that move along unmyelinated membranes.
85. Taste and smell are electrically stimulated senses.
86. The spinal cord is continuous with which region of the brain?
87. cerebrum
88. medulla oblongata
89. midbrain
90. pons
91. Nerve impulses from visual stimuli are integrated in which lobe?
92. frontal
93. temporal
94. parietal
95. occipital
96. In the eye, light rays are refracted onto:
97. the cornea
98. the lens
99. the retina
100. the blind spot
101. Indicate whether the following statements are TRUE or FALSE
102. The oesophagus has both a digestive and respiratory function.
103. The pyloric sphincter prevents the stomach contents from fl owing back into the oesophagus.
104. Hydrochloric acid (HCl) is produced by chief cells within the small intestine.
105. Gastric emptying is regulated by neuronal and hormonal reflexes.
106. Ageing causes physiological changes in the GI tract.
107. The primary phase in the regulation of gastric secretion and motility is called:
108. the swallowing phase
109. the gastric phase
110. the cephalic phase
111. the intestinal phase
112. The type of white blood cells that enter the brain to form microglia are the:
113. Lymphocyte
114. Monocytes
115. Neutrophils
116. Basophils
117. In which of the following secretions are the GI tract organs or regions correctly matched with the type of epithelium lines them?
118. Oral cavity and esophagus, stratified cuboidal
119. Stimach and small intestine, stratified squamous
120. Cecum, colon, and rectum, simple columnar
121. All of the above
122. What are the three phases of the swallowing process?
123. mastication, eruption, and dentition
124. oral, cranial, and pharyngeal
125. voluntary, pharyngeal, and esophageal
126. cardiac, gastric, and pyloric
127. The anterior nerve root of the spinal cord consists of
128. Motor nerves
129. Interneurons
130. Sensory neurons
131. Sympathetic neurons
132. Cones are stimulated to function by bright light
133. Which ONE of the following transfusions is likely to cause intravascular haemolysis?
134. Group O blood to group A recipient
135. Group B blood to group O recipient
136. Group O blood to group AB recipient
137. Rh‐positive blood to a Rh‐negative donor

**PART II: SHORT ANSWER QUESTIONS (SAQS) TOTAL 20 MARKS**

1. Briefly describe the components of blood 5mks
2. Explain briefly the physiology of hearing 5 Marks
3. State five general characteristics of the epithelial tissue 5 marks
4. Highlight five functions of the digestive system 5marks

**PART III: LONG ANSWER QUESTIONS 20 MARKS**

1. A 29-year-old Mr. Mbavu presented to a major trauma center with traumatic brain injury. Following cranial decompression, the patient was admitted to the intensive care unit for medical management and monitoring. This case report reviews the evidence for the management of traumatic brain injury.
2. Draw a well labeled diagram showing the major functional areas of the brain (5marks)
3. State four functions of the nervous system (4 Marks)
4. Describe briefly nerve impulse conduction (5 Marks)
5. Highlight the effects of the Autonomic nervous system on the cardiovascular system (3 on sympathetic and 3 on parasympathetic) (6 Marks)

**NB**

**The Cat should be type: Times New Roman font 12, spacing 1.5**

**Should be submitted on or before 30th December 2020 at 5.00 pm**

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**PREPARED BY: PETER MURAGE**

**LECTURER**