**MEDICAL PHYSIOLOGY FINAL QUALIFYING EXAM 2014- PAPER 2**

1. A patient is referred to physiotherapy outpatient clinic with an MRI investigation indicative of a basal ganglia injury. As the therapist attending to the patient you would expect that the patient will have a problem with?
2. Sensory integration
3. Short term memory
4. **Control of movement**
5. Neuroendocrine control
6. Which of these statements is nottrue about the anatomical dead space?
7. It is the conducting zone of the respiratory system.
8. **It is the non-conducting zone of the respiratory system.**
9. It is the part of the airway where no gaseous exchange occurs.
10. It consists of all the anatomical structures between the nose and the bronchioles.
11. At which stage of spermatogenesis does the developing spermatozoon acquire its haploid state?
12. Primary spermatocyte.
13. **Secondary spermatocyte.**
14. Spermatids.
15. Spermatozoa.
16. What is the physiologic role of the polar body in oogenesis?
17. To donate its cytoplasm to the oocyte.
18. To supply the oocyte with the much needed nutrients.
19. **To receive half the number of chromosomes thereby making the ovum haploid.**
20. To stimulate the development of primitive ovarian follicles at about day 105.
21. Which of the following is not a physiologic role of oxytocin?
22. Contraction of uterine smooth muscle.
23. Stimulation of the formation of prostaglandins.
24. Ejection of milk.
25. **Secretion of milk.**
26. Which of the following is not a stimulus for activation of the vagus nerve?
27. Sight of food.
28. Smell of food.
29. **Thought of food.**
30. Taste of food.
31. During facilitation on endocrine system, a physiotherapy lecturer pointed out that the function of somatostatin is to
32. **Inhibits insulin and glucagon release**
33. Stimulates insulin and glucagon release
34. Stimulator of glucagon release
35. Acts as obesity hormone
36. Considering the following tubes

1. epididymis

2. oviduct

3. ejaculatory duct

Which of the following is the correct order in which sperms travel through them?

* 1. **1, 3, 2**
  2. 3, 1, 2
  3. 2,1,3
  4. 2,3,1

1. Histamine is the chemical released to the body and directly affects the blood vessels supplying the injured area in a
2. Fungal reaction
3. Bacterial reaction
4. **Inflammatory reaction**
5. Viral reaction
6. Epithelia that consist of more than one layer of cells are referred to as
7. Striated
8. Stipulated
9. Interconnected
10. **Stratified**
11. The entry of lipid-rich chyme into the duodenum stimulates the secretion of hormones that promote
12. Relaxation of the gall bladder.
13. Inhibition of secretion of pancreatic juice.
14. **Contraction of the gall bladder.**
15. Stimulation of gastric activity.
16. How does increased concentrations of 2, 3-diphosphoglycerate affect the content of oxygen in haemoglobin?
17. It strengthens the oxygen-haemoglobin bond thereby increasing the amount of oxygen in haemoglobin.
18. **It weakens the oxygen-haemoglobin bond thereby liberating oxygen from haemoglobin.**
19. It doubles the amount of oxygen liberated from heamoglobin.
20. It has no effect.
21. In foetal circulation, a greater proportion of oxygenated blood
22. Flows in the arteries of the foetus.
23. **Flows in the veins of the foetus.**
24. Is channeled to the lower parts of the body of the foetus.
25. Flows from the foetal placenta to the maternal placenta.
26. Calculate the pulse pressure for a person with Blood Pressure of 130/70 mmHg.
27. 200 mmHg.
28. 130 mmHg.
29. 70 mmHg.
30. **60 mmHg.**
31. Which of these processes does not contribute to the formation of urine in the human kidney?
32. **Glomerular absorption.**
33. Glomerular filtration.
34. Tubular reabsorption.
35. Tubular secretion.
36. Which of the following is the most numerous among leukocytes?
37. **Lymphocytes**
38. Neutrophils
39. Eosinophils
40. Basophils
41. Inhalation occurs as a result of
42. **Upward movement of the diaphragm**
43. Movement of the ribs closer together due to contraction of inhalation intercostal muscles
44. Elongation and flattening of the diaphragm
45. Both a and b
46. Repeated stimulation of skeletal muscle causes tetanus. For tetanus to occur, which electrolyte must have accumulated in the intracellular fluid?
47. Na+
48. K+
49. Cl-
50. **Ca2+**
51. A person with myasthenia gravis notes increased muscle strength when he is treated with an acetylcholinesterase inhibitor. The basis of his improvement is increased
52. Amounts of acetylcholine released from motor nerves
53. **Levels of acetylcholine at the muscle end plates**
54. Number of acetylcholine receptors on the muscle end plates.
55. Amount of norepinephrine released from motor nerves
56. When compared with the cones of the retina the rods
57. **Are more sensitive to low-intensity light**
58. Adapt to darkness before the cones
59. Are most highly concentrated in the fovea centralis
60. Are primarily involved in color vision
61. Which of the following structures has a primary function to coordinate rate, range force and direction of movement
62. Primary motor cortex
63. Premotor cortex and supplementary motor cortex
64. **Cerebellum**
65. Basal ganglia
66. The chief stimulant for respiration that affects the centre in the medulla is
67. Increased nitrogen in the blood
68. **Increased carbon dioxide in the blood**
69. Increased oxygen in the blood
70. Increased calcium levels in the blood
71. Insulin
72. **Increases the uptake and utilization of glucose by muscle and adipose-tissue**
73. Increases the uptake and utilization of glucose by most nerve cells
74. Decreases the uptake of amino acids by muscle cells
75. Decreases the uptake of all nutrients
76. The blood clotting mechanism is initiated by
77. Platelets binding together
78. The conversion of fibrinogen to fibrin
79. **A cut or rupture of blood vessels**
80. An increase in blood calcium
81. Hypoxia induces the kidney to produce one of the following
82. Platelets
83. Intrinsic factors
84. Urobilin
85. **Erythropoietin**
86. When a person moves from supine position to a standing position which of the following compensatory changes occurs?
87. Decreased heart rate
88. **Increased contractility**
89. Decreased total peripheral resistance
90. Decreased cardiac output

1. At which site is systolic blood pressure the highest?
2. Central vein
3. Pulmonary artery
4. Right atrium
5. **Renal artery**
6. The physiologic function of the relatively slow conduction through the artrioventricular node is to allow sufficient time for
7. Run of blood from aorta to the arteries
8. Venus return to the atrium
9. **Filling of the ventricles**
10. Reporalization of the ventricles
11. Which of the following causes an increase in both glomerular filtration rate and renal plasma flow?
12. Hyperproteinemia
13. A ureteral stone
14. **Dilatation of the efferent arteriole**
15. Dilatation of afferent arteriole
16. Which of the following ions has a higher concentration in intracellular fluid than extracellular fluid?
17. Na+
18. **K+**
19. Cl-
20. Ca2+