Wilder (B. G.)

QUESTIONS upon a course of forty lectures in Human Physiology for the use of the candidates for graduation at the Medical School of Maine — session of 1875.

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These questions are given as indicating some of the more important parts of the subject. Three written examinations were held upon the nutritive functions during the earlier part of the course; more attention is therefore here paid to the functions of the nervous system.

At the examination, *twenty* of these questions will be offered.

The answers will be in writing. In diagrams all parts are to be named in full, or by initial letters.

A mark of *six* on a scale of *ten* will pass the candidate in this study.

Those who fail will be examined *orally*.

1. Diagram of ciliated cells, and state where they are found.
2. Diagrams of the two kinds of muscular fibres; state their location and manner of action.
3. Diagram of a branched nerve cell.
4. Diagram of medullated nerve fibre. State the views of Schultze and Ranvier as to its structure.
5. Locate the mucous membrane.
6. Locate the serous membrane.
7. Give a table of the proximate chemical elements.
8. Name five proteids.
9. Describe deglutition.
10. What digestive fluids are able to convert cooked starch into glucose?
11. What is the action of gastric juice upon milk? Upon lean meat?
12. Diagram of a section through the walls of stomach.
13. Peculiar function of pancreatic juice?
14. Latest views as to the absorption of undigested albumen and its destination in the economy.
15. Give reasons for regarding hunger, thirst, and desire for air, as general as well as local appetites.
16. What is Trommer's test for sugar?
17. Upon what does the acidity of the gastric juice probably depend?
18. What two poisonous gases ascend and descend respectively?

19. What is the most healthy mode of warming and ventilating a room?
20. Define osmosis.
21. How does absorption seem to differ from osmosis?
22 What is the usual explanation of the non-digestion of the stomach by the gastric juice?
23. State the general purpose of digestion.
24. Diagram of an intestinal villus.
25. Diagram of two kinds of blood corpuscles; state their average size.
26. With what Protozoa may they be compared?
27. State the difference between plasma and serum.
28. What is thought to be the function of the red corpuscles?
29. What mammals have oval corpuscles? and how do they differ from the corpuscles of birds and reptiles?
30. Diagram of the right heart.
31. Diagram of the left heart.
32. Diagram of an artery, a capillary and a vein.
33. How do the smaller arteries differ from the largest.
34. In what places could you make pressure with the fingers to stop bleeding from an artery cut below the elbow?
35. State the present opinion as to the power of the left ventricle.
36. Name the causes of the venous circulation.
37. Enumerate the ductless glands.
38. State the latest view of the functions of spleen and liver, as regards blood-corpuscles.
39. What is a true gland?
40. Diagram of the secretory glands.
41. Diagram of a liver lobule.
42. Diagram of an urinferous tubule.
43. Name the sources and eliminating organs of urea.
44. The same of cholesterine.
45. What uses are assigned to the bile?
46. Describe the glycogenic function of the liver.
47. Name the sources of animal heat.
48. Why are two garments warmer than one, bulk for bulk?
49. On a cloudy day what colored clothing is the warmest?
50. Diagrams of the thorax before and after full inspiration, as to both lateral walls and diaphragm.
51. Name the causes of expiration.
52. State the difference between air inspired and air expired.
53. Define tidal, reserve and complementary air, and state their amounts.
54. Define residual air, and state the relation which it has to the other air during respiration.
55. Describe Sylvester's method for resuscitating suffocated persons.
56. Diagram of the sympathetic nerve and its plexuses.
57. How do the fibres of the sympathetic differ from those of the cerebrospinal system?

58. Illustrate three modes of action through the sympathetic.
59. What striated muscle receives fibres from the sympathetic?
60. Describe the common experiment for illustrating the action of vaso-motor nerves.
61. How may the cranial nerves be classified?
62. How do the nerves of taste differ from the other nerves of special sense?
63. What two explanations might be given of internal strabismus?
64. State the effect of galvanizing the facial nerve.
65. State the effect upon the heart of galvanizing the pneumogastric.
66. Give a diagram of a cross section of the cord, including the nerve roots, etc.
67. State the effect of irritating an anterior root inside of a section.
68. State the effect of irritating a posterior root inside of a section.
69. State the effect of section of a nerve trunk.
70. What inference would you make if, after an accident, the patient lost the power of motion and sensation in the lower limbs?
71. Define natural reflex action and give an example. Name and illustrate one other kind of reflex action.
72. Contrast reflex action in the viscera with that of the voluntary muscles.
73. State two different views as to the decussation of the motor and sensory conductors in the cord.
74. State two different views as to the connection between the two sides of the body and the brain.
75. What are the functions of the gray matter of the cord?
76. What use is assigned to the ganglia upon the posterior roots?
77. Diagram of the parts developed from the posterior and middle cerebral vesicle.
78. From the anterior.
79. Define commissures; name three transverse commissures and the organs which they join.
80. Diagram of the lamprey's brain from above
81. The same from one side.
82. State a peculiarity of the cerebellum; what three views are held as to its function?
83. In what respect may the medulla be regarded as the vital point?
84. Diagram of the pneumogastric nerve.
85 How is respiration affected after section of the pneumogastrics?
86. State the difference in source and function of the superior and inferior laryngeal nerves.
87. State the general rule as to the correspondence of mental power with the brain.
88. What animals have larger brains than man?
89. How do man and the gorilla compare as to absolute and relative size of brain?
90. What animals have relatively larger brains than man?

91. Compare male and female brains as to absolute and relative size.
92. State three objections to phrenology, as now practised.
93. What reasons are there for thinking that some correlation may exist between mental faculties and special regions of the brain?
94. What is the condition of the brain in sleep?
95. Diagram of a section of the eye-ball, indicating the blind and yellow spots.
96. Diagram of a section of the retina.
97. Explain the accommodation of the lens to near and remote vision.
98. Account for our seeing objects right side up, when they are inverted upon the retina.
99 Diagram of the tympanum.
100. Diagram of the vestibule and semicircular canals.
101. Diagram of the cochlea, as if uncoiled.
102. The same in cross-section.
103. Explain the mechanism of hearing.
104. Diagram of the larynx in vertical cross-section.
105. Explain the movements of the parts in producing sounds of high and low pitch.
106. At what part of the step is the height most reduced?
107. Give instances of disease symmetrically affecting the two sides.
108. Give instances where parts at the two ends of the body are symmetrically affected.
109. State the lecturer's belief as to the homology of the thumb and the little toe; show that the objection based upon a difference in the number of segments is not a sound one.
110. State the laws of union of double monsters.
111. State the present belief as to the origin of double monsters as compared with twins.
112. In which sex and upon which limbs have six fingers and toes been more frequently observed?