1. The nervous system exhibits all these major functions except
A) monitoring changes.
B) releasing neurotransmitters into synapses.
C) integrating impulses.
D) effecting responses.
E) All of the above are functions of the nervous system ... therefore I select this answer.

2. Lactic acid
A) is a cell poison produced by infections and makes athletes very tired.
B) is a byproduct of fermentation and is how alcoholic beverages get their alcohol.
C) is a cell toxin that is due to aerobic respiration and causes muscle soreness.
D) is a product of chemical reactions to acquire energy by muscles in an environment with too little oxygen.
E) Two of the above are correct.

3. When the spinal cord is severed in the region of the lumbar vertebrae, the person will have which condition?
A) Paraplegia
B) Quadraplegia
C) Tersaplegia
D) Monoplegia
E) The person will have a slipped disk.

4. The point at which an impulse from one nerve cell is communicated to another nerve cell is the
A) electrical junction.
B) synapse.
C) axonal crevice.
D) effector.
E) Two of the above are correct.

5. The cells responsible for the production of cerebrospinal fluid are
A) Schwann cells.
B) ependymal cells.
C) sarcomeres.
D) astrocytes.
E) interneurons.

6. Why is stress such a problematic situation in our society?
A) Because it is thought to be a major contributor to many diseases and disorders such as diabetes, heart attacks, obesity
B) Because in modern society, the release of stress hormones without a convenient way to have them dissipate (such as activity) leads people to have a high level of stress hormones much of their lives
C) The stresses in society encourage people to inject steroids to help in relaxation
D) Two of the above are correct.
E) All of the above are correct.

7. The part of the neuron that receives stimuli in a typical unipolar neuron is
A) axon.
B) dendrite.
C) neurolemma.
D) Schwann cell.
E) the brain.

8. On the homunculus for the cerebrum, which structure would you anticipate would have the largest representation compared to its relative size in the body?
A) The lips
B) The leg
C) The foot
D) The brain
E) The elbow

9. The sympathetic and parasympathetic are subdivisions of the
A) nervous system chemostatic mechanism.
B) voluntary paratricular nervous system.
C) involuntary paratricular nervous system.
D) voluntary autonomic system.
E) involuntary autonomic system.

10. The term applied to the nerves that are in the brain are
A) PNS.
B) CNS.
C) central nervous system.
D) proximal nervous system.
E) Two of the above are correct.

11. Which of the following is true of the "bare zone"?
A) It is larger in muscles that are contracted.
B) It is smaller in muscles that have high troponin complexes.
C) It closes during muscle fiber contraction.
D) Two of the above are correct.
E) All of the above are correct.

12. The muscles that CONTRACT to help in dilating the size of the opening of the pupil in dim light is
A) the superior rectus muscle.  
B) the radial muscles.  
C) the circular muscles.  
D) the inferior oblique muscle.  
E) the gastrocnemius.

13. The muscle that is responsible for modulating the movement of the malleus is the  
A) tensor tympani muscle.  
B) sartorius muscle.  
C) malleus muscle.  
D) errector pili muscle.  
E) stapedius muscle.

14. What is the function of the sclera of the eye?  
A) Provides a tough outer covering to protect the eye  
B) Provides a clear cornea to allow light into the eye  
C) Provides a rich blood supply to the retina  
D) A and B are correct.  
E) A and C are correct.

15. The type of cells in the retina that helps an individual see black and white is (are)  
A) the nasal rodentia.  
B) the rods.  
C) the cones.  
D) the nucleomembranoretinal squamous epithelial tissue.  
E) Two of the above are correct.

16. The stereocilia are useful for  
A) maintaining the balance between the semicircular canals and the vestibulocochlear nerve.  
B) movement of hormones from one region of the body to another as in the parathyroid gland.  
C) helping discern the positional balance of the body...such as when you move your head to the side.  
D) Two of the above are correct.  
E) None of the above are correct.

17. Unipolar neurons  
A) have a very small conducting region and a very large receptive region.  
B) have a very large conducting region and a very small receptive region.  
C) have a very small receptive region and a very small conducting region.  
D) have a very large secretory region and a very large receptive region.  
E) have a very small secretory region and a very small conducting region.

18. What is the main function of the cones in the eye?  
A) Depth perception  
B) Color vision  
C) Vision in dim light  
D) Accommodation for near vision  
E) To allow the path of light to be straight and not curved in the retina

19. Which animal would you predict to have the greatest amount of binocular vision?  
A) Fish (such as goldfish or a minnow)  
B) Owl  
C) Cat  
D) Both A and B are correct.  
E) Both B and C are correct.

20. The homunculus is useful for  
A) identification of parts of the skeleton.  
B) understanding the path of blood in the body.  
C) mapping the nervous system to regions of the body.  
D) understanding the evolution of early man to modern man in terms of physiology.  
E) none of the above

21. Preparing the body for the "fight or flight" response is the role of the  
A) sympathetic nervous system.  
B) cerebrum.  
C) parasympathetic nervous system.  
D) motor nervous system.  
E) Two of the above are correct.

22. The "resting and digesting" division of the autonomic nervous systems is  
A) the parasympathetic division.  
B) the sympathetic division.  
C) the somatic division.  
D) the central nervous system.  
E) Two of the above are correct.

23. When a person cannot see objects well due to age-related stiffening of the lens/cornea, they have a condition called  
A) presbyopia.  
B) myopia.  
C) hyperopia.  
D) stifopia.
The following questions (#24 - #32) are TRUE or FALSE. If the question is TRUE select letter "A", and if the question is FALSE select "B".

24. The semicircular canals allow for the perception of balance in 3-dimensional space.
   A) True
   B) False

25. The sense of taste has the following flavor category associated with it...camphoraceous.
   A) True
   B) False

26. The mechanical sense is the sense of vision.
   A) True
   B) False

27. The chemical sense is either the sense of taste or the sense of smell.
   A) True
   B) False

28. The region of the brain that is shaped like an "X" and carries signals from one of the special senses is the olfactory chiasma.
   A) True
   B) False

29. The outermost meningeal layer of the brain is called the dura mater and consists of a network of fine, spider-web like filaments.
   A) True
   B) False

30. An axosomatic neuron receives stimulation from another neuron at its cell body.
   A) True
   B) False

31. The microglia are cells in the nervous system that assist the nervous system have a strong immune response to invader organisms.
   A) True
   B) False

32. The infundibulum is the stalk-like projection that connects the hypothalamus to the thalamus in the brain and is the site of emotions.
   A) True
   B) False

33. Which of the following hormones is produced by the anterior pituitary gland?
   A) Growth Hormone
   B) Oxytocin
   C) Antidiuretic Hormone
   D) Two of the above are correct.
   E) All of the above are correct.

34. The term cross-bridges refers to
   A) the tendon attaching to the bony insertion point.
   B) the actin heads attaching to the myosin fibers in a muscle cell.
   C) the muscle cell attaching to the tendon.
   D) the myosin heads attaching to the actin fibers in the muscle cell.
   E) Two of the above are correct.

35. Growth hormone
   A) is also called gigantism.
   B) promotes long bone growth during the formative years.
   C) secretion results in a decrease in muscle mass.
   D) is regulated by the posterior pituitary.
   E) Two of the above are correct.

36. Oxytocin
   A) is an example of a calcium blocking agent.
   B) release in the placenta stimulates uterine contractions.
   C) exerts effects during menstruation.
   D) controls protein production.
   E) Two of the above are correct.

37. Which of the following is true of ACTH?
   A) It is a hormone of the posterior pituitary gland.
   B) Stands for adrenocorticoid hormone.
   C) It is a hormone that will stimulate production of hormones in the adrenal glands.
   D) Two of the above are correct.
   E) All of the above are correct.

38. When we speak of a second messenger system, which of the following is true?
   A) It is a system of action used by non-steroidal hormones.
B) The most common type of second messenger is acetylcholine.
C) The second messenger will cause changes in the production of proteins within the nucleus.
D) Two of the above are correct.
E) All of the above are correct.

39. Steroid hormones exert their action by
A) finding an appropriate cell receptor and initiating cAMP activity.
B) acting on the nucleus of a cell and initiating or altering the expression of a gene.
C) stimulating the cell via the plasma membrane receptors.
D) increasing blood pressure.
E) Two of the above are correct.

40. The "founding father" for the science of endocrinology is
A) Arnold Adolph Berthold.
B) Sigmund Freud.
C) Marshall Hall.
D) Santiago Ramon Y. Cajal.
E) Wilder Penfield.

41. The scientist most renowned for his discovery of the modern approach to Neuroscience is
A) Wilder Penfield.
B) Marshall Hall.
C) Arnold Adolph Berthold.
D) Santiago Ramon Y. Cajal.
E) Sigmund Freud.

42. The hypophyseal portal system refers to the
A) the blood communication system of the posterior pituitary.
B) the neural communication system of the anterior pituitary.
C) the blood communication system of the anterior pituitary.
D) the neural communication system of the posterior pituitary.
E) None of the above are correct.

43. The positive feedback loop involving the placenta and uterus uses what hormone?
A) Prolactin
B) ADH
C) Oxytocin
D) Triiodothyronine
E) None of the above

44. The sense of smell is designed to detect
A) gaseous chemicals.
B) photons.
C) mechanical stimulation.
D) A and C are correct.
E) B and C are correct.

45. Which of the following is true about myelin?
A) Produced by the Schwann Cells
B) Produced by the Ependymal Cells
C) Produced by the Oligodendrocytes
D) Two of the above are correct.
E) None of the above are correct.

46. The experiments that laid the foundation for the field of endocrinology included:
A) removal, reimplantation, and transplantation of the testes in chickens.
B) studies on the invagination of the retina.
C) studies on the effects of perfluorooctanes on the growth and development of rats.
D) the grand study in the 1800s where the neuron was found to have a hypophyseal corpus attachment to the reticular formation in the mouse.
E) None of the above are correct.

47. Which of the following is true about depolarization?
A) The cell becomes more electronegative at the site of depolarization.
B) Positive ions enter the cell during depolarization.
C) It is an early step in the transmission of a nerve impulse.
D) Two of the above are correct.
E) All of the above are correct.

48. Referred pain is
A) when a region of the body with sensory pain structures (such as the skin) will send pain signals to other tissues in the body (such as the brain) to indicate discomfort.
B) when a region of the body lacking pain structures (such as the heart) sends signals to other regions that have pain structures (such as the left arm) and this will allow the region without pain structure to express pain.
C) when your physician sends you to a nociception clinic to address chronic pain issues.
D) Two of the above are correct.
E) All of the above are correct.