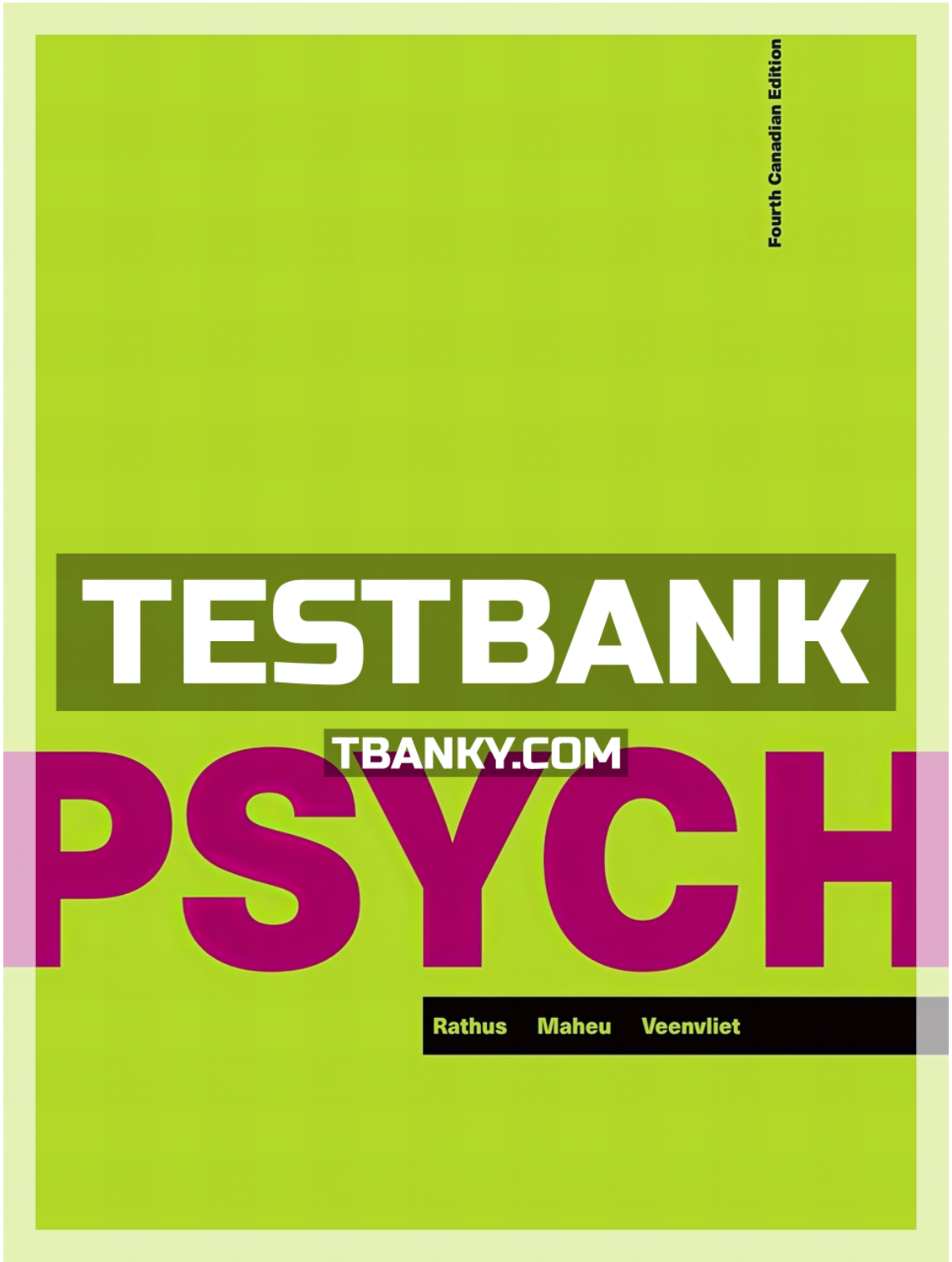
# TEST BANK FOR PSYCH 4TH CANADIAN EDITION RATHUS ISBN 9780176873981



# TRUE/FALSE

1 : Efferent neurons transmit messages from the brain or spinal cord to the muscles and glands.a. Trueb. False
A : true
B : false

Correct Answer : A

2 : Dopamine is a neurotransmitter involved in voluntary movements.a. Trueb. False
A : true
B : false

Correct Answer : A

3 : Deficiencies in norepinephrine can impair memory formation.a. Trueb. False
A : true
B : false

Correct Answer : A

4 : Stimulants like cocaine and amphetamines increase the release of norepinephrine.a. Trueb. False
A : true
B : false

Correct Answer : A

5 : The sympathetic nervous system has a calming effect.a. Trueb. False
A : true
B : false

Correct Answer : B

6 : The somatic nervous system controls the automatic functions of the internal organs and glands.a. Trueb. False
A : true
B : false

Correct Answer : B

7 : The central nervous system consists of only the spinal cord.a. Trueb. False
A : true
B : false

Correct Answer : B

8 : Reflexes are inborn behaviour patterns that have helped individuals to adapt to their environment even before they can understand and purposefully manipulate the environment.a. Trueb. False
A : true
B : false

Correct Answer : A

9 : The EEG uses X-rays to form images of brain structures.a. Trueb. False
A : true
B : false

Correct Answer : B

10 : The limbic system is fully evolved only in mammals.a. Trueb. False
A : true
B : false

Correct Answer : A

11 : The left side of the brain controls the right side of the body.a. Trueb. False
A : true
B : false

Correct Answer : A

12 : In most individuals, most of their language processing occurs in the right hemisphere.a. Trueb. False
A : true
B : false

Correct Answer : B

13 : A large majority of humans are entirely left-brained or entirely right-brained.a. Trueb. False
A : true
B : false

Correct Answer : B

14 : Epinephrine and norepinephrine are secreted by the adrenal medulla.a. Trueb. False
A : true
B : false

Correct Answer : A

15 : Charles Darwin’s book, Descent of Man, makes the case for the theory of evolution.a. Trueb. False
A : true
B : false

Correct Answer : A

16 : A behavioural geneticist studies inborn reasons why individuals may differ in their behaviour and mental processes.a. Trueb. False
A : true
B : false

Correct Answer : A

17 : If a psychological trait is thought to be polygenic, it is influenced by only one gene.a. Trueb. False
A : true
B : false

Correct Answer : B

# MULTIPLE CHOICE

18 : Which of the following range of functions is characteristic of the human nervous system?
A : the ability to process imagery and cognitions, but not physical movements
B : memory, planning, and voluntary movement
C : formation of ideas and thoughts
D : memory, planning and involuntary movement

Correct Answer : B

19 : Which of the following are nerve cells?
A : dendrites
B : axons
C : glial cells
D : neurons

Correct Answer : D

20 : Which of the following remove dead neurons and waste products from the nervous system and help assist with neuronal growth?
A : glial cells
B : neurons
C : myelin sheaths
D : neurotransmitters

Correct Answer : A

21 : What is a function of glial cells in the nervous system?
A : Glial cells remove waste products.
B : Glial cells assist in the prevention of Alzheimer’s disease.
C : Glial cells carry neurotransmitters along axons.
D : Glial cells carry hormones along axons.

Correct Answer : A

22 : What is an axon’s total range of possible length?
A : from a few millimetres up to 10 millimetres
B : from a few millimetres up to one-half metre
C : from a few millimetres up to a few metres
D : from a few millimetres to one kilometre

Correct Answer : C

23 : What part of a neuron receives messages from neighbouring neurons?
A : the terminal buttons
B : the dendrite
C : the soma
D : the axon

Correct Answer : B

24 : What part of a neuron sends messages to neighbouring neurons?
A : the soma
B : the terminal buttons
C : the axon
D : the dendrite

Correct Answer : B

25 : Which of the following is found inside a neuron’s cell body?
A : dendrite
B : axon
C : terminal button
D : nucleus

Correct Answer : D

26 : The axon contains small, bulblike structures that hold neurotransmitters. What are these structures called?
A : myelin sheaths
B : glial cells
C : terminal buttons
D : dendrites

Correct Answer : C

27 : What is the white, fatty material that insulates a neuron?
A : the myelin sheath
B : the synaptic cleft
C : the soma
D : the cortex

Correct Answer : A

28 : Which part of the neuron minimizes leakage of electrical currents travelling along the axon?
A : the cortex
B : the myelin sheath
C : the synaptic cleft
D : the soma

Correct Answer : B

29 : Eight-month-old Bianca has difficulty learning to walk and performing other physical tasks, although these will become much easier for her in coming months. What is partially responsible for her current difficulty?
A : Her neurons lack axons.

B : Her neurons lack dendrites.
C : Her neurons lack myelin sheaths.
D : Her neurons lack somas.

Correct Answer : C

30 : Why is a child without complete myelinization of neurons unable to engage in activities requiring visual-motor coordination?
A : The myelin in the afferent neurons is damaged, causing the axon to swell.
B : The axon does not have sufficient myelin coating.
C : The leakage of myelin along the axon is minimized.
D : The dendrite is not insulated with myelin.

Correct Answer : B

31 : When someone steps on your toe, what carries information to the spinal cord and the brain?
A : glial cells
B : motor neurons
C : interneurons
D : sensory neurons

Correct Answer : D

32 : Which of the following “tells” you to quickly pull your foot back when someone steps on your toe?
A : sensory neurons
B : glial cells
C : interneurons
D : motor neurons

Correct Answer : D

33 : If someone steps on your toe, resulting in pain and the movement of your foot, which of the following happens?
A : Motor neurons transmit the sensation of pain to the spinal cord and to the brain, followed by sensory neurons sending the message to your foot to move.
B : Sensory neurons transmit the sensation of pain to the spinal cord and to the brain, followed by sensory neurons sending the message to your foot to move.
C : Sensory neurons transmit the sensation of pain to the spinal cord and to the brain, followed by motor neurons sending the message to your foot to move.
D : Motor neurons transmit the sensation of pain to the spinal cord and to the brain, followed by sensory neurons sending the message to your foot to move.

Correct Answer : C

34 : If you accidentally touch a hot iron, what type of neurons carries the nerve impulses that cause you to quickly remove your hand?
A : sensory neurons
B : afferent neurons
C : glial neurons
D : motor neurons

Correct Answer : D

35 : What are the greyish unmyelinated neurons that are involved in spinal reflexes called?
A : white matter
B : interneurons
C : grey matter
D : glial cells

Correct Answer : C

36 : Which of the following analogies about sensory neurons is most accurate?
A : Sensory neuron is to motor neuron as afferent neuron is to efferent neuron.
B : Sensory neuron is to motor neuron as interneuron is to glial cell.
C : Sensory neuron is to motor neuron as glial cell is to interneuron.
D : Sensory neuron is to motor neuron as efferent neuron is to afferent neuron.

Correct Answer : A

37 : What has happened to the myelin in a person with multiple sclerosis?
A : The myelin is completely absent.
B : The myelin has been damaged.
C : The myelin has disintegrated.
D : The myelin has been replaced with hard fibrous tissue.

Correct Answer : D

38 : According to Luigi Galvani, how do messages travel along neurons?
A : by electrochemical transmission
B : by electrical transmission
C : by chemical transmission
D : by reflexes

Correct Answer : A

39 : Who demonstrated that messages travelling along neurons move by electrochemical transmission?
A : Luigi Galvani
B : William James
C : Wilhelm Wundt
D : Thomas Edison

Correct Answer : A

40 : What do we call the electrochemical discharge of a nerve cell?
A : afferent impulse
B : synapse
C : neurotransmitter
D : neural impulse

Correct Answer : D

41 : What is the approximate resting potential of a neuron?
A : +70 millivolts

B : +40 millivolts
C : –40 millivolts
D : –70 millivolts

Correct Answer : D

42 : What happens to a cell membrane when a section of a neuron is stimulated by neighbouring neurons?
A : It becomes permeable to sodium ions.
B : It becomes positive to sodium ions.
C : It becomes impermeable to sodium ions.
D : It becomes polarized to sodium ions.

Correct Answer : A

43 : What do we call the electrical capacity across a neural membrane when it is not responding to other neurons?
A : polarization
B : depolarization
C : action potential
D : resting potential

Correct Answer : D

44 : What occurs when a neuron’s cell membrane has become permeable to sodium ions?
A : The cell has been altered to a degree of approximately –40 millivolts.
B : A section of the cell has become permeable to potassium chloride ions.
C : A section of the neuron has been stimulated by a neighbouring neuron.
D : An action potential of about –70 millivolts has been initiated.

Correct Answer : C

45 : The polarization of a neuron results in a resting potential of about –70 millivolts. This is followed by depolarization and an action potential of +110 millivolts. What is the resulting membrane voltage?
A : +180 millivolts
B : +40 millivolts
C : –40 millivolts
D : –180 millivolts

Correct Answer : B

46 : What is the membrane voltage when the cell membrane becomes permeable to sodium ions?
A : +70 millivolts
B : +40 millivolts
C : –40 millivolts
D : –70 millivolts

Correct Answer : B

47 : What is the approximate action potential inside an axon at a so-called “disturbed” area?
A : +110 millivolts

B : +70 millivolts
C : –40 millivolts
D : –70 millivolts

Correct Answer : A

48 : What do we call the electrical impulse that stimulates the conduction of a neural impulse along an axon?
A : an action potential
B : a final potential
C : an electric potential
D : a resting potential

Correct Answer : A

49 : After an action potential occurs, the cell become permeable to what type of ions?
A : sodium chloride ions
B : sodium ions
C : potassium chloride ions
D : hydrogen ions

Correct Answer : B

50 : What term refers to the strength of incoming messages required for neurons to fire?
A : resting potential
B : threshold
C : minimum
D : neuronal potential

Correct Answer : B

51 : Why do sensory neurons fire impulses of the same magnitude, regardless of whether someone squeezes your hand gently or tightly?
A : because of overstimulation of the sensory neuron
B : because of the all-or-none principle
C : because of damage in the sensory neuron
D : because of the stimulation threshold

Correct Answer : B

52 : Which of the following refers to a neuron firing an impulse of the same strength whenever an action potential is triggered?
A : polarization
B : resting potential
C : refractory period
D : the all-or-none principle

Correct Answer : D

53 : How could sodium be prevented from passing through the neuronal membrane?
A : by the neuron being in the refractory period
B : because the neuron is decaying
C : because the neuron is not myelinated

D : by the neuron simply not functioning properly

Correct Answer : A

54 : Following the firing of a neuron, what is the phase during which a neuron's action potential cannot be triggered?
A : relative refractory period
B : all-or-none period
C : refractory period
D : resting potential

Correct Answer : C

55 : Which of the following applies to a synapse?
A : The synapse sends chemical messages from axon to axon.
B : A synapse is bordered by an axon.
C : A synapse is bordered by the dendrite of the transmitting neuron.
D : The synapse is the fluid-filled gap between an axon terminal and a dendrite.

Correct Answer : D

56 : What is the name of the microscopic space between neurons, where messages are transmitted?
A : receptor site
B : terminal
C : transmitter site
D : synapse

Correct Answer : D

57 : When a neural impulse reaches an axon terminal, what is released in varying amounts?
A : hormones
B : electrical impulses
C : neurotransmitters
D : electrochemical substances

Correct Answer : C

58 : Within the neuron, where are neurotransmitters stored?
A : in the dendritic branches
B : in the terminal branches
C : in the synaptic clefts
D : in the synaptic vesicles

Correct Answer : D

59 : When neurotransmitters make initial contact with a neuron, where do they arrive in order to then trigger the firing of that neuron?
A : the synaptic vesicles
B : the terminal buttons
C : the receptor sites
D : the transmitter sites

Correct Answer : C

60 : Which of the following statements notes how neurotransmitters affect neurons?
A : Most neurotransmitters have a limited, negligible effect on nearby neurons.
B : Some neurotransmitters excite nearby neurons, while some neurotransmitters inhibit nearby neurons.
C : Neurotransmitters can affect nearby neurons when the individual consciously allows such connections to occur.
D : Most neurotransmitters inhibit nearby neurons.

Correct Answer : B

61 : Which of the following statements describes how neurotransmitters travel through a neuron?
A : Neurotransmitters are stored in the axon.
B : When the neural impulse reaches the dendritic branches, the vesicles release varying amounts of neurotransmitters.
C : A neurotransmitter conveys a message to a neighbouring neuron by travelling along the axon to the terminal fibres.
D : Neurotransmitters find their way to neuronal receptor sites and subsequently trigger firing.

Correct Answer : D

62 : Excitatory neurotransmitters cause other neurons to fire. What neurons prevent other neurons from firing?
A : sensory neurons
B : inhibitory neurons
C : motor neurons
D : interneurons

Correct Answer : B

63 : Vladimir is deficient in dopamine, causing him to progressively lose control of various muscles. What disease does Vladimir likely have?
A : Parkinson’s disease
B : Alzheimer’s disease
C : thyroid disease
D : Huntington’s disease

Correct Answer : A

64 : The toxin curare prevents a particular substance from binding to receptor sites on neurons, resulting in paralysis and often death. What is the name of the substance?
A : dopamine
B : serotonin
C : noradrenaline
D : acetylcholine

Correct Answer : D

65 : Both botulism spores and a toxin known as curare have the same effect on nervous system functioning. What substance do botulism spores and curare prevent from being released into the synapse?
A : serotonin
B : dopamine

C : acetylcholine
D : noradrenaline

Correct Answer : C

66 : While visiting a South American jungle in the early part of the 20th century, Eugene was shot with a poison dart and immediately became paralyzed. What substance was blocked from action by the toxin in the dart, causing the paralysis?
A : dopamine
B : serotonin
C : noradrenaline
D : acetylcholine

Correct Answer : D

67 : Minutes after eating a few bites of food in a local restaurant, Mary was unable to breathe and began to experience muscular paralysis. What substance was blocked from action after she ate food contaminated with botulism?
A : noradrenaline
B : serotonin
C : acetylcholine
D : dopamine

Correct Answer : C

68 : The Shakespearean character Juliet took a potion that paralyzed her and affected the muscles used for breathing. What substance was blocked from action by the potion?
A : serotonin
B : acetylcholine
C : dopamine
D : noradrenaline

Correct Answer : B

69 : Acetylcholine is involved in memory. In which part of the brain is it most prevalent?
A : the hippocampus
B : the medulla
C : the amygdala
D : the cerebellum

Correct Answer : A

70 : Often found in the hippocampus, which neurotransmitter helps to control voluntary muscle contractions?
A : serotonin
B : endorphins
C : dopamine
D : acetylcholine

Correct Answer : D

71 : Which of the following are formed in the hippocampus?
A : sensations

B : endorphins
C : motor movements
D : memories

Correct Answer : D

72 : What neurotransmitter is likely deficient in a person with Parkinson's disease?
A : acetylcholine
B : norepinephrine
C : serotonin
D : dopamine

Correct Answer : D

73 : Muhammad Ali suffers from Parkinson's disease. What chemical is deficient in his brain?
A : acetylcholine
B : dopamine
C : norepinephrine
D : serotonin

Correct Answer : B

74 : According to one theory, people who suffer from schizophrenia may have too many receptor sites for a certain neurotransmitter? What is the name of the neurotransmitter?
A : norepinephrine
B : serotonin
C : dopamine
D : acetylcholine

Correct Answer : C

75 : A neuropsychologist saw a person exhibiting uncontrollable movement, recognizing the symptoms as resulting from an imbalance of which neurotransmitter?
A : dopamine
B : norepinephrine
C : serotonin
D : acetylcholine

Correct Answer : A

76 : Phenothiazines are a group of drugs used to treat schizophrenia. What neurotransmitter is blocked from action by phenothiazines?
A : noradrenaline
B : acetylcholine
C : dopamine
D : endorphins

Correct Answer : C

77 : Phenothiazines, a group of drugs used to treat schizophrenia, block the action of dopamine. If used over a long period, what severe side effect may develop from being treated with these drugs?
A : Alzheimer's disease

B : thought disorders
C : hallucinations
D : Parkinson’s-like symptoms

Correct Answer : D

78 : Which statement best describes the property and effects of the neurotransmitter norepinephrine?
A : It is an inhibitory neurotransmitter that slows the heartbeat and decreases arousal.
B : It is an excitatory neurotransmitter that slows the heartbeat and decreases arousal.
C : It is an inhibitory neurotransmitter that speeds heartbeat and increases arousal.
D : It is an excitatory neurotransmitter that speeds heartbeat and increases arousal.

Correct Answer : D

79 : What is the most likely effect of a drug that blocks the reuptake of norepinephrine?
A : psychomotor retardation
B : drowsiness
C : sleeplessness
D : too much sleep

Correct Answer : C

80 : Cocaine and amphetamines increase the production of which neurotransmitters?
A : norepinephrine and dopamine
B : acetylcholine and endorphins
C : acetylcholine and GABA
D : GABA and endorphins

Correct Answer : A

81 : Deficiencies in what neurotransmitter have been linked to depression, eating disorders, and insomnia?
A : serotonin
B : acetylcholine
C : noradrenaline
D : dopamine

Correct Answer : A

82 : Jeff is very aggressive and has symptoms of alcoholism and depression. What neurotransmitter is Jeff most likely deficient in?
A : dopamine
B : norepinephrine
C : serotonin
D : acetylcholine

Correct Answer : C

83 : Which of the following neurotransmitters is believed to help reduce anxiety?
A : norepinephrine
B : serotonin
C : dopamine

D : GABA

Correct Answer : D

84 : Which of the following statements is supported by research on the neurotransmitter known as GABA?
A : GABA is an excitatory neurotransmitter that causes other neurons to fire.
B : Tranquilizers and alcohol may act on GABA receptors and reduce anxiety.
C : An excess of GABA may be involved in depression.
D : Many classes of antianxiety drugs increase the sensitivity of GABA receptors.

Correct Answer : B

85 : Endorphins are “endogenous.” What does this mean?
A : They decrease most external messaging to the brain.
B : They increase pain messages to the brain.
C : They occur naturally in the brain and the bloodstream.
D : They decrease the functioning of the immune system.

Correct Answer : C

86 : Rashid just finished a 42-kilometre marathon. In spite of the physical strain, why does he feel euphoric and elated?
A : because of a release of dopamine
B : because of a release of endorphins
C : because of a release of acetylcholine
D : because of a release of serotonin

Correct Answer : B

87 : Which of the following is linked to feeling pleasure and the alleviation of pain?
A : acetylcholine
B : norepinephrine
C : serotonin
D : endorphins

Correct Answer : D

88 : Bella was involved in a serious car accident that caused multiple injuries requiring medical attention. Bella recalled that she felt no pain immediately after the accident. What substance was released into her bloodstream and prevented her from feeling pain?
A : endorphins
B : dopamine
C : serotonin
D : norepinephrine

Correct Answer : A

89 : Endorphins operate in the brain by blocking the receptor sites for chemicals that transmit what kind of messages?
A : messages for memory formation
B : messages for feeling pain
C : messages for moving the body

D : messages for feeling sadness

Correct Answer : B

90 : What neurotransmitter may increase the functioning of the immune system?
A : any excitatory neurotransmitter
B : endorphins
C : dopamine
D : any inhibitory neurotransmitter

Correct Answer : B

91 : What is a nerve?
A : a cell body that incorporates many components such as the nucleus
B : a bundle of axons from many neurons
C : a soma, or entire organism
D : an independent neuron cell

Correct Answer : B

92 : Considered together, the brain and spinal cord form what nervous system?
A : the central nervous system
B : the peripheral nervous system
C : the autonomic nervous system
D : the sympathetic nervous system

Correct Answer : A

93 : What branch of the nervous system transmits sensory and motor messages, such as those that enable you to pick up a pen?
A : the peripheral nervous system
B : the autonomic nervous system
C : the sympathetic nervous system
D : the parasympathetic nervous system

Correct Answer : A

94 : What are the two main divisions of the peripheral nervous system?
A : the somatic nervous system and motor nervous system
B : the autonomic nervous system and central nervous system
C : the sympathetic nervous system and parasympathetic nervous system
D : the autonomic nervous system and somatic nervous system

Correct Answer : D

95 : What branch of the nervous system transmits messages about sight, sound, smell, taste, and tactile information?
A : the sympathetic nervous system
B : the somatic nervous system
C : the autonomic nervous system
D : the central nervous system

Correct Answer : B

96 : Nadia has difficulty with voluntary body movements such as running and lifting. Complications in what nervous system are causing this difficulty?
A : the peripheral nervous system
B : the autonomic nervous system
C : the sympathetic nervous system
D : the somatic nervous system

Correct Answer : D

97 : What are the two divisions of the autonomic nervous system?
A : the peripheral nervous system and central nervous system
B : the peripheral nervous system and somatic nervous system
C : the sympathetic nervous system and parasympathetic nervous system
D : the somatic nervous system and motor nervous system

Correct Answer : C

98 : Jerome has just completely messed up his presentation in front of the class, and he feels very embarrassed and emotional. What part of his nervous system is most active?
A : the peripheral nervous system
B : the parasympathetic nervous system
C : the autonomic nervous system
D : the central nervous system

Correct Answer : C

99 : Why might people experience indigestion when they are anxious or fearful?
A : The sympathetic division of the autonomic nervous system predominates during feelings of fear or anxiety.
B : The parasympathetic branch inhibits digestion.
C : The sympathetic division of the autonomic nervous system stimulates the digestive process.
D : The central nervous system predominates during feelings of fear or anxiety.

Correct Answer : A

100 : While going for a run or doing any other physical exercise, what part of the autonomic system is active?
A : the peripheral branch
B : the parasympathetic branch
C : the central nervous branch
D : the sympathetic branch

Correct Answer : D

101 : People highly trained in yoga and meditation can control their heart rate and blood pressure, raising and lowering it at will. What controls these functions?
A : the somatosensory cortex
B : the autonomic nervous system
C : the motor cortex
D : the motor nervous system

Correct Answer : B

102 : Fatima was driving at night when a deer suddenly jumped in front of her car. She pulled over to the side of the road to calm her rapid heartbeat and her anxious feelings. What branch of the autonomic nervous system controls these responses?
A : the sympathetic nervous system
B : the parasympathetic nervous system
C : the somatosensory nervous system
D : the peripheral nervous system

Correct Answer : A

103 : Suppose you are studying psychology when you hear something stirring underneath your desk. When you lean over to investigate and see a rat scurry across the floor, what part of your nervous system suddenly becomes active?
A : the peripheral nervous system
B : the sympathetic nervous system
C : the central nervous system
D : the parasympathetic nervous system

Correct Answer : B

104 : Which of the following defines a spinal reflex?
A : an unlearned response to a stimulus that possibly involves only two neurons
B : a learned response to a stimulus that possibly involves only one neuron
C : an acquired response to a stimulus that possibly involves only one neuron
D : a voluntary response to a stimulus that possibly involves only two neurons

Correct Answer : A

105 : Spencer has obtained a head injury while snowboarding. He is showing symptoms of headache, nausea, cognitive impairment, and motor impairment. What is he likely suffering from?
A : frontal lobe injury
B : temporal lobe injury
C : myelin deterioration
D : concussion

Correct Answer : D

106 : Which Canadian neuroscientist is credited with helping patients with epilepsy?
A : Donald Hebb
B : Wilder Penfield
C : Brenda Milner
D : Phineas Gage

Correct Answer : B

107 : After a serious car accident, Dr. Murray tests the reflexes of an unconscious victim. What does the lack of response indicate about the victim’s injuries?
A : They are in the victim’s cerebrum.
B : They are in the victim’s frontal lobes.
C : They are in the victim’s spinal cord.
D : They are in the victim’s limbic system.

Correct Answer : C

108 : What is the relationship between the location of brain damage and the area in which sensation or control in the body is lost?
A : Damage at the back of the brain results in a loss of sensation or control on the front of the body.
B : Damage at the front of the brain results in a loss of sensation or control on the back of the body.
C : Damage on one side of the brain results in a loss of sensation or control on the opposite side of the body.
D : Damage on one side of the brain results in a loss of sensation or control on the same side of the body.

Correct Answer : C

109 : What brain study technique does a researcher most likely use in a sleep study?
A : magnetic resonance imaging (MRI) method
B : electroencephalograph graph (EEG) method
C : positron emission tomography (PET) scan
D : computerized axial tomography (CAT) scan

Correct Answer : B

110 : What kind of technique is an electroencephalograph (EEG)?
A : one that creates an image of the area of the brain that responds to a flashing light
B : one that traces the amount of glucose in the brain
C : one that passes X-rays through a certain area of the brain
D : one that detects very small amounts of electrical activity in the brain

Correct Answer : D

111 : A neurologist suggests Irena undergo a brain-imaging test to help understand her recent diagnosis of epilepsy. What brain-imaging test uses a computer to integrate measurements of radiation passing through the brain at multiple angles?
A : magnetic resonance imaging (MRI) technique
B : video imaging procedure
C : computerized axial tomography (CAT) scan
D : electroencephalograph (EEG) technique

Correct Answer : C

112 : What brain study technique involves an X-ray beam passing through the head?
A : computerized axial tomography (CAT) scan
B : electroencephalograph (EEG) technique
C : magnetic resonance imaging (MRI) technique
D : positron emission tomography (PET) scan

Correct Answer : A

113 : How does the positron emission tomography (PET) scan make a computer-generated image of brain activity?
A : by measuring the amount of blood flow shifts in the brain
B : by measuring the amount of glucose metabolized in areas of the brain
C : by measuring the amount of electrical activity on the surface of the brain
D : by measuring the amount of radiation passing through areas of the brain

Correct Answer : B

114 : What brain study technique requires the injection of a mild radioactive substance mixed with glucose?
A : magnetic resonance imaging (MRI) technique
B : electroencephalograph (EEG) technique
C : positron emission tomography (PET) scan
D : computerized axial tomography (CAT) scan

Correct Answer : C

115 : What brain study technique involves a person lying in a powerful magnetic field and being exposed to radio waves that cause part of the brain to emit signals?
A : computerized axial tomography (CAT) scan
B : electroencephalograph (EEG) technique
C : positron emission tomography (PET) scan
D : magnetic resonance imaging (MRI) technique

Correct Answer : D

116 : What does the magnetic resonance imaging (MRI) technique assess?
A : multiple angles of radiation throughout the brain
B : subtle shifts in blood flow throughout the brain
C : tracers within the brain
D : electrical activity within the brain

Correct Answer : B

117 : What brain imaging technique includes repeated scans that allow researchers to see the brain at work?
A : positron emission tomography (PET) scan
B : functional magnetic resonance imaging (fMRI) technique
C : computerized axial tomography (CAT) scan
D : magnetic resonance imaging (MRI) technique

Correct Answer : B

118 : Sam is making the arrangements for his month-long trip to Australia. What part of the brain is assisting Sam in making plans and in solving difficult travel details?
A : the prefrontal cortex
B : the medulla
C : the cerebrum
D : the pons

Correct Answer : A

119 : After Damian fell off a ladder, he had trouble concentrating, could not sleep, and struggled with breathing properly. Which part of Damian’s brain has likely been damaged?
A : the pons
B : the medulla
C : the hypothalamus
D : the cerebellum

Correct Answer : A

120 : An injury to what part of the brain can lead to stumbling, a lack of motor coordination, and loss of muscle tone?
A : the cerebrum
B : the hypothalamus
C : the cerebellum
D : the thalamus

Correct Answer : C

121 : After having a stroke, Nalah could no longer coordinate her dance movements. What area of her brain was most likely damaged?
A : the cerebellum
B : the amygdala
C : the thalamus
D : the medulla

Correct Answer : A

122 : Damage to which of the following can harm attentiveness and possibly lead to a coma?
A : the thalamus
B : the medulla
C : the reticular formation
D : the hypothalamus

Correct Answer : C

123 : What part of the brain is significantly affected by drinking alcohol?
A : the reticular formation
B : the hippocampus
C : the amygdala
D : the cerebellum

Correct Answer : A

124 : What structure serves as a relay station for incoming sensory stimulation and then directs this information to another area of the brain?
A : the reticular formation
B : the pons
C : the thalamus
D : the amygdala

Correct Answer : C

125 : What brain structure transmits sensory information from the eyes to the visual cortex within the occipital lobe?
A : the reticular formation
B : the thalamus
C : the hypothalamus
D : the amygdala

Correct Answer : B

126 : In which of the following does the hypothalamus play a role?
A : sensation and perception
B : self-regulating behaviours
C : balance and coordination
D : sexual behaviour

Correct Answer : D

127 : What area of the brain is most likely damaged in someone who is unable to sweat?
A : the reticular formation
B : the hypothalamus
C : the thalamus
D : the hippocampus

Correct Answer : B

128 : When studying electrical stimulation of the brain using rats with implanted electrodes, you observe the rats exhibit compulsive eating and drinking behaviours. In what area of the brain is the electrode most likely implanted?
A : the amygdala
B : the thalamus
C : the hypothalamus
D : the pituitary gland

Correct Answer : C

129 : Which of the following physiological areas is involved in memory, emotion, and in regulating basic drives such as hunger, sex, and in aggression?
A : the limbic system
B : the lymph system
C : the somatic system
D : the endocrine system

Correct Answer : A

130 : When a person has a damaged hippocampus, what difficulty most likely occurs?
A : a lack of motor coordination
B : an inability to form new memories
C : an inability to sweat
D : a lack of reflex responses

Correct Answer : B

131 : After a gunshot wound to the head, a patient can recall old memories but cannot form new memories. What part of the brain was most likely wounded?
A : the hippocampus
B : the thalamus
C : the cerebrum
D : the cerebellum

Correct Answer : A

132 : Based on studies with monkeys, cats, and other animals, what type of behaviour is

associated with the amygdala?
A : aggressive behaviour
B : dating behaviour
C : sexual behaviour
D : eating behaviour

Correct Answer : A

133 : Which of the following functions is associated with the amygdala?
A : body temperature regulation
B : fear
C : hunger and thirst
D : balance

Correct Answer : B

134 : What might be the result of destroying the amygdala in an animal?
A : aggressive or fearful response
B : hyperactive response
C : no response
D : non-aggressive or docile response

Correct Answer : D

135 : What is the largest part of the human brain?
A : the cerebellum
B : the cerebrum
C : the medulla
D : the limbic system

Correct Answer : B

136 : What term refers to the “wrinkles” in the cerebral cortex?
A : crevices
B : cerebrals
C : fissures
D : callosums

Correct Answer : C

137 : What structure connects the hemispheres of the cerebral cortex?
A : the cerebrum
B : the thalamus
C : the corpus callosum
D : the cerebellum

Correct Answer : C

138 : What area of the brain allows people to think deeply and to make decisions?
A : the cerebral cortex
B : the hippocampus
C : the thalamus
D : the amygdala

Correct Answer : A

139 : A patient comes to his eye doctor complaining of visual difficulties. After a thorough examination, the doctor finds no anatomical problem in the patient's eyes. The doctor refers the patient to a neurologist to investigate possible damage to which of the following areas of the brain?
A : the occipital lobe
B : the frontal lobe
C : the parietal lobe
D : the temporal lobe

Correct Answer : A

140 : Rick was playing around with a friend when he fell and hit his head. Soon after, he had difficulty with his vision. In what lobe did he likely sustain an injury?
A : the parietal lobe
B : the temporal lobe
C : the frontal lobe
D : the occipital lobe

Correct Answer : D

141 : In what area of the cortex does the processing of visual stimuli occur?
A : the frontal lobe
B : the occipital lobe
C : the parietal lobe
D : the temporal lobe

Correct Answer : B

142 : Audrey has suffered a stroke and is having difficulty hearing. In what lobe did she likely sustain injury?
A : the temporal lobe
B : the occipital lobe
C : the frontal lobe
D : the parietal lobe

Correct Answer : A

143 : Carlos was in a car accident and hit his head. Later, he had trouble hearing. In what lobe did he likely sustain damage?
A : the occipital lobe
B : the parietal lobe
C : the temporal lobe
D : the frontal lobe

Correct Answer : C

144 : If a neurosurgeon stimulates a specific area of your brain and you feel heat in your left leg, what part of the brain was likely stimulated?
A : the motor cortex
B : the somatosensory cortex

C : the hypothalamus
D : the thalamus

Correct Answer : B

145 : In what lobe is the somatosensory cortex located?
A : the temporal lobe
B : the frontal lobe
C : the occipital lobe
D : the parietal lobe

Correct Answer : D

146 : In what lobe is the motor cortex located?
A : the occipital lobe
B : the temporal lobe
C : the parietal lobe
D : the frontal lobe

Correct Answer : D

147 : To make you raise an arm or move a finger, what brain area would a neurosurgeon need to stimulate?
A : the visual cortex
B : the somatosensory cortex
C : the auditory cortex
D : the motor cortex

Correct Answer : D

148 : In which of the following are the association areas of the brain primarily involved?
A : motor movements
B : learning, thought, and language
C : sensation
D : somatosensory functions

Correct Answer : B

149 : In deciding how to best resolve the issue of how to keep his three children happy while dividing up his estate, Mr. Vincent is primarily using which of the following areas of his brain?
A : the emotional centre of the brain
B : the limbic system
C : the hypothalamus
D : the prefrontal region

Correct Answer : D

150 : Jake suffers from damage to the Broca’s area of his cerebral cortex. What condition does he likely experience?
A : amnesia
B : anger
C : aphasia
D : hearing loss

Correct Answer : C

151 : What neurological problem is caused by Wernicke's aphasia?
A : a serious impairment in reading comprehension
B : an inability to pronounce words while reading
C : an impaired ability to understand another's words and express one's own thoughts
D : very slow and laborious speech

Correct Answer : C

152 : After being in severe car accident, Jennifer has damage to the Broca's area of her brain. What are the likely effects of this damage?
A : Although Jennifer will still be able to understand language, she will have difficulty speaking.
B : Jennifer will not be able to comprehend nor properly produce language.
C : Jennifer will be able to speak but it will be much slower than before the brain damage.
D : Jennifer will have both impaired understanding and producing speech.

Correct Answer : A

153 : Which of the following are involved in language processing?
A : Broca's and Wernicke's areas
B : the limbic area and Broca's areas
C : the cerebellum and Wernicke's areas
D : angular gyrus and Broca's areas

Correct Answer : A

154 : Which statements regarding sex differences in the brain is most accurate?
A : There are no sex differences in the brain.
B : Men's brains have less interconnectivity within specific regions compared to women.
C : Regions of the brain tied to empathy are activated to a greater extent in women than in men.
D : Women have decreased processing across hemispheres compared to men.

Correct Answer : C

155 : For a right-handed person, what is processed within the left hemisphere of the brain?
A : visual-spatial functions
B : logical analysis
C : mathematical computation
D : emotion

Correct Answer : B

156 : What cognitive function is involved in the left hemisphere of the brain?
A : mathematical computation
B : language comprehension
C : logical analysis
D : visual-spatial differentiation

Correct Answer : C

157 : What happens during surgery to control epilepsy?

A : Patients have their corpus callosum severed.
B : Patients lose their ability to retrieve visual and auditory memories.
C : Patients lose their cerebral cortex.
D : Patients have their hypothalamus removed.

Correct Answer : A

158 : Janet will undergo a split-brain operation to treat epilepsy. What procedure must the surgeon perform during the operation?
A : make an incision between the frontal and parietal lobes
B : cut both the right and left hemispheres in half
C : sever the frontal lobe in half
D : sever the corpus callosum

Correct Answer : D

159 : Why is the corpus callosum severed in epileptic patients?
A : to rid the patient of brain seizures
B : to confine the seizures to one hemisphere
C : to minimize seizure activity in both hemispheres
D : to reduce severe depression

Correct Answer : B

160 : What occurs in a patient’s brain after undergoing a split-brain operation?
A : The patient develops numerous personalities with varying traits and behaviours in each one.
B : Patients with their eyes closed can verbally describe an object when it is in one hand, but not when it is in the opposite hand.
C : The two hemispheres will work together even when the person is playing the piano or solving math problems.
D : The patient’s brain becomes plasticized, and behaviours will change drastically.

Correct Answer : B

161 : Research on plasticity in the brain suggests which of the following?
A : The brain’s plasticity is halted after early adolescence.
B : The brain remains plastic throughout the life span.
C : Plasticity of the brain stops after the age of 50.
D : The brain is only plastic until about five years of age.

Correct Answer : B

162 : How do the endocrine glands regulate vital bodily functions?
A : by secreting hormones
B : by secreting endorphins
C : by secreting neurotransmitters
D : by secreting saliva

Correct Answer : A

163 : What is often referred to as the “master gland”?
A : the adrenal glands
B : the hypothalamus
C : the thyroid gland

D : the pituitary gland

Correct Answer : D

164 : Isaac visits an endocrinologist because he is not producing enough growth hormone. What gland does the endocrinologist study to determine what is wrong?
A : the hypothalamus
B : the adrenal gland
C : the pancreas
D : the pituitary gland

Correct Answer : D

165 : Tovah must bottle-feed her baby because she is unable to produce enough of a certain hormone. What hormone stimulates the production of breast milk?
A : epinephrine
B : melatonin
C : oxytocin
D : prolactin

Correct Answer : D

166 : What does the hormone oxytocin stimulate?
A : the production of ova
B : the onset of labour
C : the production of milk
D : the production of sperm

Correct Answer : B

167 : What gland influences physical growth, maternal behaviour, and the production of urine?
A : the thyroid gland
B : the pituitary gland
C : the adrenal gland
D : the hypothalamus

Correct Answer : B

168 : Although Bobby is only ten years old, he is 1.83 metres (6 feet) tall. Tests will likely reveal a problem with which of the following?
A : the pituitary gland
B : the adrenal gland
C : the thyroid gland
D : the pancreas

Correct Answer : A

169 : Bonny is 16 years old yet is only 1.22 metres (4 feet) tall. What gland is likely deficient in its hormone production?
A : the pituitary gland
B : the hippocampus
C : the adrenal gland
D : the thyroid gland

Correct Answer : A

170 : What is the function of the hormone vasopressin?
A : Vasopressin acts as a mood-elevating hormone.
B : Vasopressin stimulates labour in pregnant women.
C : Vasopressin acts an antidiuretic, which inhibits urine production when bodily fluids are low.
D : Vasopressin stimulates the production of breast milk in women.

Correct Answer : C

171 : Which of the following regulates the pituitary gland?
A : the hippocampus
B : the hormone centre
C : the hypothalamus
D : the thyroid

Correct Answer : C

172 : Lewis is taking a melatonin pill because he heard it helps improve which of the following?
A : vision
B : intellectual growth
C : sleep
D : hearing

Correct Answer : C

173 : What hormone might a person take if he or she is having trouble sleeping?
A : melatonin
B : prolactin
C : corticosteroids
D : thyroxin

Correct Answer : A

174 : Which of the following conditions causes some people to be overweight?
A : hypothyroidism
B : hypoglycemia
C : hyperglycemia
D : hyperthyroidism

Correct Answer : A

175 : Jin Li, whose body secretes very small amounts of thyroxin, feels sluggish and has gained 5 kilograms. What is his condition?
A : He has hypoglycemia.
B : He has hyperthyroidism.
C : He is overweight.
D : He is anorexic.

Correct Answer : C

176 : Nigel’s growth is stunted and he exhibits symptoms of developmental delay. From what

does he likely suffer?
A : too much thyroxin
B : cretinism
C : hypothyroidism
D : hyperthyroidism

Correct Answer : B

177 : What can cause cretinism in children?
A : deficiency in thyroxin
B : hyperthyroidism
C : too much thyroxin
D : hyperglycemia

Correct Answer : A

178 : Seeing a fast-moving vehicle veer off the road up onto the sidewalk a few metres in front of her, Isabelle was able to quickly move out of the way by jumping over a barricade onto a safe area. Which of the following is most relevant in terms of facilitating this quick movement that saved Isabelle's life?
A : the release of epinephrine (adrenaline) from the sebaceous glands
B : the release of norepinephrine (noradrenaline) from the pituitary glands
C : the release of epinephrine (adrenaline) from the adrenal glands
D : the release of norepinephrine (noradrenaline) from the thyroid glands

Correct Answer : C

179 : What does the adrenal cortex secrete?
A : oxytocin
B : corticosteroids
C : thyroxin
D : tyrosine

Correct Answer : B

180 : Where in the body is testosterone produced?
A : the testes, ovaries, and adrenal glands
B : the testes only
C : the ovaries only
D : the testes and ovaries

Correct Answer : A

181 : What is likely to happen if you take anabolic steroids?
A : an increased resistance to stress
B : an increase in the body's energy supply
C : a decrease in muscle mass
D : serious brain damage

Correct Answer : B

182 : Which of the following sex characteristics are involved in reproduction?
A : secondary sex characteristics

B : primary sex characteristics
C : first sex characteristics
D : second sex characteristics

Correct Answer : B

183 : Where in the body are estrogens produced?
A : only the ovaries
B : the hypothalamus
C : both the testes and ovaries
D : only the testes

Correct Answer : C

184 : What substance promotes the growth of female reproductive organs and helps maintain pregnancy?
A : luteinizing hormone
B : progesterone
C : oxytocin
D : estrogen

Correct Answer : B

185 : What is the term for the fact that species who are better able to adapt to their environment are more likely to survive and reproduce?
A : natural selection
B : struggle for existence
C : mutation
D : maturity

Correct Answer : A

186 : Which of the following statements is a basic tenet of the theory of evolution?
A : Species that have mutations rarely manage to survive.
B : Species that naturally select are less likely to reproduce.
C : Species that survive do not transmit their traits to future generations.
D : Species that do not adapt decrease in numbers and may become extinct.

Correct Answer : D

187 : Which statement is most consistent with the perspective of evolutionary psychology?
A : Social behaviour evolves and can be transmitted from one generation to the next.
B : Species who have adjusted to various environmental challenges have had their populations decrease.
C : Species that survive do not transmit their traits to future generations.
D : Species that do not adapt decrease in numbers and may become extinct.

Correct Answer : A

188 : Which statement is most consistent with the theory of evolutionary psychology?
A : Behaviour patterns are termed species-specific because they evolve within all species.
B : Psychologists have found no human behaviours that are instinctive.
C : Social behaviour does not evolve, yet it is transmitted from generation to generation.
D : Instinctive behaviour can be modified by learning.

Correct Answer : D

189 : Which of the following is the main reason dogs have a more developed sense of smell than humans?
A : training
B : experience
C : environment
D : heredity

Correct Answer : D

190 : What relationship do behavioural geneticists try to understand?
A : the relationship between heredity and environmental influences
B : the relationship between heredity and nutrition
C : the relationship between heredity and behaviour
D : the relationship between heredity and nature

Correct Answer : A

191 : Dr. Barnes is researching the brains of individuals who are alcoholic and have a history of alcoholism in their families. What is most likely Dr. Barnes's profession?
A : behavioural geneticist
B : neurosurgeon
C : substance abuse counsellor
D : brain surgeon

Correct Answer : A

192 : What are the fundamental building blocks of heredity?
A : alleles
B : ova and sperm
C : genes
D : zygotes

Correct Answer : C

193 : How many chromosome pairs are in the human body?
A : 21
B : 23
C : 42
D : 46

Correct Answer : B

194 : What term refers to the code that determines one's species and one's inherited traits?
A : genetic code
B : chromosome code
C : inherited code
D : DNA code

Correct Answer : A

195 : Which term refers to the fact that many traits are influenced by a combination of genes rather than a single gene?
A : phenotype
B : genotype
C : polygenic
D : nature

Correct Answer : C

196 : Our outer, physical appearance is based on which aspect of our genetic makeup?
A : sex chromosomes
B : genotype
C : sex-type
D : phenotype

Correct Answer : D

197 : How many chromosomes do we inherit from our mother?
A : 16
B : 23
C : 26
D : 46

Correct Answer : B

198 : During prenatal testing, Rob and Melissa's doctor discovered an extra chromosome on the 21st pair of chromosomes. What condition will their child likely have at birth?
A : dizygotic twins
B : Down syndrome
C : developmental delay
D : monozygotic twins

Correct Answer : B

199 : Which of the following factors will result in the development of Down syndrome?
A : one less chromosome on the 23rd pair
B : one extra chromosome on the 23rd pair
C : one less chromosome on the 21st pair
D : one extra chromosome on the 21st pair

Correct Answer : D

200 : What do scientists examine when conducting a kinship study?
A : the degree of environmental influence on traits and behaviour patterns
B : traits and behaviour patterns of those who are biologically related and biologically unrelated
C : the relationship between adopted individuals
D : traits and behaviour patterns in people who are in the same family

Correct Answer : B

201 : Jerry and his young nephew exhibit the same musical talent, yet Jerry's brother, who is the child's biological father, does NOT demonstrate this skill. Why is this possible from a genetic standpoint?

A : Parents and children share 100 percent overlap in genetic endowment.
B : Siblings share 50 percent genetic endowment with their uncles.
C : Aunts and uncles related by blood to their nieces and nephews have 25 percent overlap in genetic endowment.
D : Siblings share a 100 percent overlap in genetic endowment.

Correct Answer : C

202 : Leila's parents are both left-handed. What are the chances that Leila will also be left-handed?
A : 10 percent
B : 40 percent
C : 50 percent
D : 100 percent

Correct Answer : C

203 : In what circumstance of relationship between people might certain behaviours have a genetic component?
A : if the people share a similar environment early in their lives
B : if a first cousin also shares the same behavioural trait
C : if the people are part of the same adopted family
D : if the people are close blood relatives

Correct Answer : D

204 : Tim and Tina have learned that they are expecting a baby. The doctor has told them that the zygote has divided into two separate cells. What does this information mean to Tim and Tina?
A : A Down syndrome baby will result.
B : The pregnancy will result in miscarriage.
C : Dizygotic twins will result.
D : Monozygotic twins will result.

Correct Answer : D

205 : Which statement is most relevant for dizygotic twins?
A : Dizygotic twins are referred to as identical twins.
B : Dizygotic twins develop when two ova are fertilized.
C : Dizygotic twins demonstrate differences that are the result of nurture.
D : Dizygotic twins share 100 percent of their genes.

Correct Answer : B

206 : What type of twins develops when two ova are fertilized?
A : identical twins
B : zygotic twins
C : dizygotic twins
D : monozygotic twins

Correct Answer : C

207 : What is an effective research method for behavioural geneticists studying schizophrenia?
A : studying dizygotic twins reared together, whose biological mother is schizophrenic

B : studying monozygotic twins reared together, whose biological mother is schizophrenic
C : studying dizygotic twins reared apart, whose biological mother is schizophrenic
D : studying monozygotic twins reared apart, whose biological mother is schizophrenic

Correct Answer : D

208 : What are researchers attempting to do when they study twins raised in adoptive homes?
A : sort out the effects of nature versus genetics
B : determine evidence for a genetic role in the appearance of a trait
C : determine the parenting skills of the adoptive parents
D : assess the degree of environmental similarity between the twins

Correct Answer : B

# FILL IN THE BLANK

209 : The parts of a neuron that extend like roots from the cell body to receive incoming messages from thousands of adjoining neurons are called _____.

Correct Answer : dendrites

210 : The term that describes the reduction of the resting potential of a cell membrane from approximately 70 millivolts to zero is _____.

Correct Answer : depolarize

211 : Following a neuron's firing, the phase in which a neuron's action potential cannot be triggered is called the _____.

Correct Answer : refractory period

212 : Messages travel from neurons to other neurons, muscles, and glands via chemical messengers called _____.

Correct Answer : neurotransmitters

213 : The process whereby unused neurotransmitters are reabsorbed by the axon terminal of the sending neuron is called _____.

Correct Answer : reuptake

214 : Dopamine deficiencies are linked to _____ disease.

Correct Answer : Parkinson's

215 : The division of the peripheral nervous system that transmits to the central nervous system messages about sights, sounds, smells, temperature, and body positions is called the _____.

Correct Answer : somatic nervous system

216 : A brain-imaging test that involves an injection of a mild radioactive substance mixed with glucose or a tracer is called a(n) _____.

Correct Answer : PET scan

217 : An MRI uses a powerful magnetic field and _____to cause parts of the brain to emit signals.

Correct Answer : radio waves

218 : Heart rate, blood pressure, and respiration are controlled by an area of the brain called the _____.

Correct Answer : medulla

219 : The area of the brain located just forward of the medulla and that transmits information about body movement is called the _____.

Correct Answer : pons

220 : The area of the brain that, if injured, could result in impaired motor coordination is called the _____.

Correct Answer : cerebellum

221 : The visual cortex is located in the _____.

Correct Answer : occipital lobe

222 : The language areas of the cortex (for most people) are located in the _____ hemisphere.

Correct Answer : left

223 : The endocrine system consists of _____ that secrete hormones.

Correct Answer : ductless glands

224 : The gland known as the “master gland” is the _____.

Correct Answer : pituitary

225 : Regulating the sleep-wake cycle, the pineal gland secretes a hormone called _____.

Correct Answer : melatonin

226 : The gland that influences the body’s metabolism is called the _____.

Correct Answer : thyroid

227 : The adrenal medulla secretes epinephrine and _____.

Correct Answer : norepinephrine

228 : Two key concepts within evolutionary psychology are natural selection and _____.

Correct Answer : adaptation

229 : A stereotyped pattern of behaviour that is triggered in a specific situation is called a(n) _____.

Correct Answer : instinct

230 : Genes are segments of chromosomes, which consist of molecules of _____.

Correct Answer : DNA

231 : As they determine whether a person is male or female, the 23rd pair of chromosomes are called _____.

Correct Answer : sex chromosomes

232 : Studies of the distribution of traits or behaviour patterns among related people are known as _____ studies.

Correct Answer : kinship

233 : The name for the fertilized egg cell that carries genetic messages from both parents is _____.

Correct Answer : zygote

# ESSAY

234 : How do neurons communicate?Describe how a neural impulse travels from a sending neuron to a receiving neuron. In your description, be sure to include the parts of a neuron and what happens at the synapse.

Correct Answer : Essay should include the following:Description of sequence of neural impulseDendrites—receive messages from other neuronsCell body—contains nucleus of the cellAxon—has insulating myelin sheath and speeds transmissionTerminal button of axon—releases neurotransmittersSynapse—gap between sending neuron and receiving neuronReceiving neuron—has receptor sitesDescription of process at synapseAs impulse reaches axon terminal of sending neuron, neurotransmitters (chemical messengers) are released and travel across synapse; they fit into specific receptor sites on receiving neuron—completing the transmission.

235 : Discuss two neurological/psychological disorders that have been linked to neurotransmitters. For each disorder, (a) describe the symptoms and (b) discuss what researchers have learned about the role of neurotransmitters in the disorder.

Correct Answer : Essay should include discussion of two of the following diseases:Alzheimer's diseasea) Symptom—impairment to the formation of new memoriesb) Role of neurotransmitter—ACh is abundant in hippocampus a structure involved in the formation of new memories. ACh deficiency is connected to Alzheimer's. Evidence is found in memory loss of maze-learning rats.Parkinson's diseasea) Symptom—progressive loss of muscle control, muscle tremors, jerky uncoordinated movementsb) Role of neurotransmitter—Dopamine acts on the brain to affect voluntary movements. Dopamine deficiency is connected to Parkinson's.Schizophreniaa) Symptom—confusion and false perceptionsb) Role of neurotransmitter—Schizophrenics may have more receptors for dopamine in brain areas associated with emotional responding, which results in overuse of dopamine. Treatment inhibits these receptors.

236 : a) Describe the functions of the sympathetic and parasympathetic divisions of the autonomic nervous system.b) Provide a real-life example that demonstrates the effects of these two systems in humans.

Correct Answer : Essay should include the following:a) Description of the two divisions of the autonomic nervous system and their opposing effectsSympathetic—involved in flight or fight response—increases heart rate and breathing, increases glucose metabolism, inhibits digestion and salivation. When someone is stressed, anxious, or fearful, eating is difficult.Parasympathetic—calming responses during relaxation—slows heart rate and breathing, stimulates digestion and salivation.b) Any example that involves an arousing or stress-inducing situation that is complemented by a calming, restful situation and includes some of the effects described in (a).

237 : Compare and contrast three brain-imaging techniques. Be sure to include what each technique can tell us about a person's brain.

Correct Answer : Essay should include discussion of three of the following:Comparison and contrastEEG—records electrical activity in the brain (brain waves)—can detect certain brain waves associated with sleep, relaxation, or neurological problems.CT scan—X-rays of the brain—can reveal deformities, blood clots, tumours, other problems.PET scan—tracing metabolized glucose in the brain by measuring positively charged particles—shows areas of the brain that are most active during different tasks.MRI—person lies in magnetic field and is exposed to radio waves—measures signals from the brain and allows for repeated observation of changes in blood flow while patient is involved in different tasks.fMRI—can observe brain while it works with repeated scans of the brain.DTI – measures the movement of water molecules in and around neuronal structures. Provides tractographs (detailed maps of neural pathways).Contrast could include differences in what is measured in each scan (i.e., CT—X-rays, PET—glucose).

238 : a) Discuss why psychologists are interested in studying identical twins that have been raised in different environments.b) What is the main conclusion of these studies?

Correct Answer : Essay should include the following:a) Identical twins have almost identical genetics. Studying identical twins reared in different environments can provide a clearer picture of the contribution of genetics. Because identical twins raised in the same family have shared a similar environment, it is difficult to evaluate the relative contribution of genetics and environment.b) Results of the Minnesota study of identical twins reared apart show that they are about as similar as identical twins living together on measures of intelligence, personality, temperament, interests, and social attitudes. Therefore, these traits are likely to be genetically influenced.

239 : Imagine meeting four people who have sustained injury to different parts of their brain. Person A has irreversible damage to her frontal lobe. Person B has irreversible damage to his parietal lobe. Person C has irreversible damage to her temporal lobe, and person D has irreversible damage to his occipital lobe. In general, what would be the effects of each of these injuries?

Correct Answer : Essay should include discussion of the following:Frontal lobe—problems associated with speech, problem solving, planning, decision making, emotional responses, personality changes, motor skillsParietal lobe—sensory problemsTemporal lobe—auditory deficits, problems comprehending speech, or problems finding the right wordsOccipital lobe—visual problems

240 : What is the advantage of knowing that a mental illness is caused by a neurochemical problem? How might a better understanding of brain chemistry help psychologists develop a better definition of mental illness?

Correct Answer : Essay should include the following:Discussion of advantages—may make it easier to focus in on treatment optionsUnderstanding the role of neurotransmitters in the brain helps psychologists examine what happens when these neurotransmitters are out of balance (too much or too little). This understanding can help in defining the causes of mental illnesses.

241 : Design experiments using each of the following methods to learn something about the brain:a. MRIb. PETc. CATd. fMRIIn each case, think about what your research question would be and how you would go about answering it. Specify your subject population, research question, and the design of the experiment. How would the information gained from each study differ from the others?

Correct Answer : Essays should include the following:Description of well-designed experiments for each method, and a demonstrated understanding of what each technique measures.

242 : You are asked to determine whether schizophrenia is strongly genetically based. Design a study (or studies) to try and address this question. Explain how you would use the results to arrive at an answer to your research question.

Correct Answer : Essay should include the following:Description of a twin study to examine their genetic link, including a hypothesis and a discussion of an experimental and control group.Explanation of how schizophrenia would be measured.