There are two versions of the test – you have version A. Before you start the exam: Mark (A) on line 60 of your answer sheet, and mark sure that you put your exam in the correct pile at the end of the exam.

MULTIPLE CHOICE. Mark the letter that best completes the statement or answers the question. Use a #2 pencil, and if you need to erase, please do so completely. Please use the answer sheets provided by us.

GOOD LUCK!

1) Evidence suggests that mammalian PNS neurons are capable of accurate regeneration only if they
A) synapse on mammalian CNS neurons.
B) are unmyelinated.
C) are directed by CNS neurons.
D) receive stimulation and guidance from oligodendroglia.
E) receive stimulation and guidance from Schwann cells.

2) Stress can disrupt the performance of
A) cognitive tasks.
B) tasks mediated by the hippocampus.
C) the reproductive system.
D) memory tasks.
E) all of the above

3) Anxiety disorders are
A) now reasonably rare.
B) the most prevalent of all psychiatric disorders.
C) often treated with benzodiazepines or serotonin agonists.
D) both A and C
E) both B and C

4) Following cerebral ischemia,
A) postsynaptic neurons slowly die.
B) excessive activity is induced at NMDA receptors.
C) excessive numbers of calcium and sodium ions enter postsynaptic neurons.
D) glutamate is released in excessive quantities.
E) all of the above

5) Depression is often divided into two categories: reactive depression and __________ depression.
A) acute
B) bipolar
C) unipolar
D) endogenous
E) chronic

6) Which neural structure has a particularly dense population of glucocorticoid receptors?
A) hypothalamus
B) frontal cortex  
C) caudate  
D) hippocampus  
E) amygdala  

7) Which of the following symptoms is not typically associated with anxiety disorders?  
A) nausea  
B) tachycardia  
C) breathing difficulties  
D) hypotension  
E) high blood pressure  

8) If a person developed a brain tumor as a result of chronic cigarette smoking, the tumor would likely be  
A) metastatic.  
B) a meningioma.  
C) encapsulated.  
D) malignant.  
E) both A and D  

9) The amygdala is thought to play a role in  
A) memory for time.  
B) space and working memory.  
C) object recognition memory.  
D) memory for language.  
E) memory for the emotional significance of experiences.  

10) Posttraumatic Stress Disorder (PTSD)  
A) is sometimes treated with antidepressants.  
B) is an anxiety disorder.  
C) is sometimes associated with emotional numbing.  
D) can be associated with difficulties in sleeping.  
E) all of the above  

11) The process by which neurons passively die as the result of injury is  
A) apoptosis.  
B) dementia pugilistic.  
C) general paresis.  
D) necrosis.  
E) fasciculation.  

12) Glucocorticoids are released from the  
A) anterior pituitary.  
B) adrenal medulla.  
C) thymus.  
D) both A and B  
E) none of the above  

13) Monkeys with large medial-temporal-lobe lesions displayed deficits on the  
A) WAIS similar to those displayed by H.M.  
B) digit span test similar to those displayed by H.M.  
C) delayed nonmatching-to-sample test similar to those displayed by H.M.  
D) digit-span +1 test similar to those displayed by human amnesics.  
E) incomplete-pictures test similar to those displayed by H.M.
14) The adrenal cortex was identified by Selye as important in the stress response; today's theories also acknowledge the important contribution of the
   A) anterior pituitary.
   B) pituitary.
   C) parasympathetic nervous system.
   D) thymus.
   E) sympathetic nervous system.

15) H.M.'s greatest postsurgical problem is his
   A) deficit in short-term memory.
   B) anterograde amnesia.
   C) deficit on the digit-span test.
   D) retrograde amnesia.
   E) drop in IQ.

16) After the axon of a standard multipolar neuron is cut, the cell body sometimes degenerates. This is called __________ degeneration.
   A) distal
   B) anterograde
   C) transneuronal
   D) retrograde
   E) proximal

17) Stressed individuals are more likely than unstressed individuals to report being ill. This may occur because
   A) illness while stressed is more uncomfortable.
   B) stress contributed to the cause of the illness.
   C) they expect to be more ill.
   D) all of the above
   E) none of the above

18) Phobic disorders, panic disorders, and obsessive compulsive disorders are all categories of
   A) anxiety disorder.
   B) unipolar affective disorder.
   C) depression.
   D) schizophrenia.
   E) mania.

19) The main reason why LTP is one of the most widely studied neuroscientific phenomena is that it
   A) can easily be studied in humans.
   B) can be induced by both electrical and chemical stimulation.
   C) occurs in mammals.
   D) involves readily accessible neocortical circuits.
   E) involves a synaptic change similar to the synaptic change that is believed to be the basis of memory storage.

20) Strokes are caused by
   A) tardive dyskinesia.
   B) cerebral hemorrhage.
   C) cerebral ischemia.
   D) all of the above
   E) both B and C
21) Support for the hypothesis that long-term potentiation is the mechanism of memory came from the discovery that
A) the induction of maximal LTP in the hippocampus blocks learning of the Morris-water-maze task.
B) LTP can be elicited by levels of stimulation that mimic normal neural activity.
C) LTP effects are prominent in neural structures that have been implicated in memory (e.g., hippocampus).
D) behavioral conditioning can produce LTP-like effects.
E) all of the above

22) A major contribution of H.M.'s case was the following: It
A) provided support for the view that there are distinct modes of short-term and long-term storage.
B) effectively challenged the view that memorial functions are diffusely and equivalently distributed throughout the brain.
C) provided evidence of memory without conscious awareness.
D) was the first to strongly implicate the medial temporal lobes in memory.
E) all of the above

23) When there is a disturbance of consciousness following a blow to the head and there is no evidence of physical damage, the diagnosis is
A) laceration.
B) contusion.
C) concussion.
D) hematoma.
E) aneurysm.

24) Disorders characterized by extreme feelings of anxiety and severe stress responses in the absence of an apparent precipitating stimulus are classified as
A) depression.
B) obsessive-compulsive disorders.
C) tachycardia.
D) generalized anxiety disorders.
E) phobic anxiety disorders.

25) H. pylori has been implicated as a causal factor in
A) stress.
B) brain tumors.
C) heart disease.
D) gastric ulcers.
E) immune dysfunction.

26) NMDA-dependent LTP occurs only when the high-intensity, high-frequency stimulation activates the
A) the adrenal gland.
B) presynaptic neurons but not the postsynaptic neurons.
C) presynaptic and postsynaptic neurons together.
D) postsynaptic neurons but not the presynaptic neurons.
E) hippocampus.

27) Luteinizing hormone (LH) and follicle-stimulating hormone (FSH) are synthesized in the:
A) gonads.
B) anterior pituitary (adenohypophysis).
C) hypothalamus.
D) posterior pituitary (neurohypophysis).
E) medial temporal lobe.
28) Disorders characterized by recurring uncontrollable anxiety-producing thoughts and impulses are classified as __________ disorders.
A) panic
B) phobic
C) schizophrenic
D) manic-depressive
E) obsessive-compulsive

29) Long-term potentiation has been most frequently studied in the
A) cerebellum.
B) hippocampus.
C) neocortex.
D) amygdala.
E) Aplysia.

30) Aneurysms can be
A) caused by infection.
B) caused by vascular poisons.
C) congenital.
D) all of the above
E) none of the above

31) The main difference in the core physiological reactions to physical versus psychological stressors is that only physical stressors
A) activate the adrenal medulla.
B) increase blood pressure.
C) increase epinephrine levels.
D) activate the adrenal cortex.
E) none of the above

32) Which of the following subjects suffered ischemia-produced hippocampal damage?
A) N.A.
B) H.M.
C) R.B.
D) R.M.
E) P.B.

33) Robert Wadlow, an extraordinarily tall individual, suffered from Gigantism. What was the root cause of his disease?
A) drank too much milk as a child
B) pituitary tumor
C) thymus dysfunction
D) adrenal tumor
E) stress

34) Which of the following tasks is commonly used to study spatial abilities in rats?
A) Morris water maze
B) radial-arm maze
C) Mumbly box
D) all of the above
E) both A and B

35) Gonadotropin releasing hormone (GnRH) is synthesized in the:
A) gonads.
B) anterior pituitary (adenohypophysis).
C) hypothalamus.
D) posterior pituitary (neurohypophysis).
E) thymus.
36) The physiological response to physical or psychological threat is generally referred to as
A) anxiety.
B) hypertension.
C) stress.
D) arousal.
E) depression.

37) The NMDA receptor is a type of ionotropic __________ receptor.
A) GABA  B) nitric oxide  C) glutamate  D) dopamine  E) serotonin

38) One major difference between the amnesia associated with advanced Korsakoff's syndrome and that associated with bilateral medial-temporal-lobe damage is that patients with advanced Korsakoff's syndrome have
A) a retrograde amnesia for remote events.
B) severe anterograde amnesia.
C) a mild retrograde amnesia for recent events.
D) difficulty forming new explicit long-term memories.
E) severe deficits in consolidation.

39) Depressed patients who do not experience periods of mania are said to suffer from __________ depression.
A) reactive
B) unipolar
C) bipolar
D) acute
E) endogenous

40) The creation of new hippocampal cells in adulthood is blocked by
A) maternal grooming.
B) stress.
C) pyramidal cells.
D) seizures.
E) antibodies.

41) Healthy axons sometimes respond to the degeneration of adjacent axons by developing __________ that grow to the synaptic sites that have been abandoned by the degenerating axons.
A) nodes of Ranvier
B) dendritic spines
C) Schwann cells
D) phagocytes
E) collateral sprouts

42) In the short-term, stressors produce physiological changes that
A) increase the ability to deal effectively with the stressor.
B) disrupt the ability to deal effectively with the stressor.
C) are maladaptive.
D) both A and B
E) both A and C

43) In the brains of deceased Alzheimer's patients, there is much less
A) epinephrine.
B) serotonin.
C) acetylcholine.
D) norepinephrine.
E) dopamine.

44) The milk ejection reflex can be associated primarily with which hormone:
   A) vasopressin
   B) oxytocin
   C) luteinizing hormone (LH)
   D) cortisol
   E) thyrotrophin-releasing hormone

45) Which of the following is true of depression?
   A) It improves memory.
   B) Roughly 10% of people suffering from an affective disorder will commit suicide.
   C) It is more common in males than females.
   D) A and B
   E) B and C

46) Hippocampal cells that become active only when the subject is in particular locations are called
   A) complex cells.
   B) location cells.
   C) place cells.
   D) spot cells.
   E) simple cells.

47) Antibodies are manufactured by a class of lymphocytes called
   A) B cells.
   B) white blood cells.
   C) leucocytes.
   D) T cells.
   E) antigens.

48) Endocrine glands are ductless glands; they release
   A) hormones to the outside world.
   B) substances to the outside world.
   C) perspiration, among other things.
   D) hormones into the circulatory system.
   E) chromosomes into nuclei.

49) Brain-imaging studies have consistently revealed degeneration of the __________ in patients with
   anxiety disorders.
   A) thalamus
   B) cingulate cortex
   C) amygdala
   D) all of the above
   E) none of the above

50) Which neurotransmitter has been consistently implicated in anxiety disorders?
   A) GABA
   B) glutamate
   C) serotonin
   D) dopamine
   E) both A and C
MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

1) E
2) E
3) E
4) E
5) D
6) D
7) D
8) E
9) E
10) E
11) D
12) E
13) C
14) E
15) B
16) D
17) D
18) A
19) E
20) E
21) E
22) E
23) C
24) D
25) D
26) C
27) B
28) E
29) B
30) D
31) E
32) C
33) B
34) E
35) C
36) C
37) C
38) A
39) B
40) B
41) E
42) A
43) C
44) B
45) B
46) C
47) A
48) D
49) E

50) E