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MCQ ANSWERS SAMPLE

ANP 1105A

Midterm #2

1. **The integration centre of the autonomic nervous system is the:**

   A. medulla oblongata
   B. vagus nerve
   C. brain stem
   D. hypothalamus
   E. none of the above

2. **Homeostasis is the condition in which the body maintains:**

   A. the lowest possible energy usage
   B. a static state with no deviation from preset limits
   C. a dynamic state with an unlimited range of changes
   D. constant levels of hormones and neurotransmitters
   E. a relatively constant but dynamic internal environment

3. **Anterior pituitary <u>does NOT</u> produce:**

   A. growth hormone (GH) and follicle stimulating hormone (FSH)
   B. somatomedin C and oxitocin
   C. thyroid stimulating hormone (TSH) and growth hormone (GH)
   D. luteinizing hormone (LH) and corticotrophin (ACTH)
   E. follicle stimulating hormone (FSH) and corticotrophin (ACTH)

4. **Posterior pituitary:**

   A. is the site of storage of the hormone inducing uterine and breast muscle contraction
   B. produces tropic hormones
   C. is linked to the hypothalamus via the hypothalamic-hypophyseal portal veins
   D. both A) and B)
   E. both B) and C)

5. **The "resting and digesting" processes in our body are regulated by the_____division of the autonomic nervous system:**

   A. sympathetic
   B. somatic
   C. peripheral
   D. parasympathetic

6. **An example of an ultra-short loop negative feedback control would be:**

A. suppression of LH and FSH secretion by gonadotropin releasing hormone (GnRH)
B. regulation of insulin levels by glucose
C. suppression of CRH secretion by CRH
D. regulation of blood calcium levels

7. **Releasing and inhibiting hormones are produced by the ----------to control the production of hormones by the----------.**

A. hypothalamus anterior pituitary
B. hypothalamus; posterior pituitary
C. posterior pituitary; hypothalamus
D. pineal gland hypothalamus
E. anterior pituitary hypothalamus

8. **Hypersecretion of GH in anchildren leads to:**

A. gigantism
B. goiter
C. dwarfism
D. exophthalmos
E. acromegaly

9. **Hormone secretion can be stimulated by:**

A. another hormone
B. circulating levels of a substance regulated (controlled) by a particular hormone
C. neural stimulation
D. all of the above

10. **Which of the following is TRUE about hormonal receptors?**

A. they become down-regulated by persistently low levels of a specific hormone
B. they become up-regulated by persistently low levels of a specific hormone
C. steroid hormones do not require any receptors to exert their physiological effect
D. thyroid hormone receptors are located on the cellular membrane

11. **Which of the following is TRUE about the autonomic nervous system?**

A. The sympathetic nervous system causes an increase in heart rate and blood pressure
B. The regulatory responses of the endocrine system to homeostatic imbalance are faster than responses of the nervous system.
C. Axon terminals of the preganglionic and postganglionic neurons of the sympathetic nervous system release acetylcholine.
D. The parasympathetic nervous system regulates body temperature

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12. Choose the TRUE statement about endocrine regulation:

A. drop in blood glucose level leads to release of insulin by the pancreatic endocrine cells
B. endocrine organs secrete hormones into a series of ducts
C. releasing hormones (RH) from the hypothalamus are delivered directly to the anterior pituitary cells by hypothalamic neurons.
D. endocrine regulation usually involves negative feedback to prevent severe changes in the body.

13. Which of the following statements is FALSE?

A. Metabolic rate and metabolism of glucose as well and fat are regulated by both the sympathetic and parasympathetic nervous system.
B. Under stressful conditions, the sympathetic nervous system dominates over the parasympathetic.
C. Sympathetic cardiac nerves stimulate HR whereas parasympathetic nerves slow down HR
D. The sympathetic nervous system has a more widespread effect in the body than does the parasympathetic nervous system.

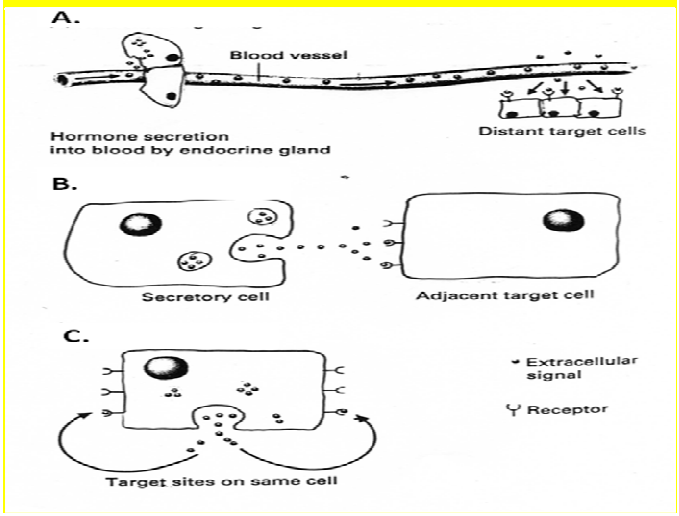
14. Which of the following is TRUE about hormones?

A. Steroid hormones are water soluble and thus easily cross cellular membranes.
B. All hormones are secreted/released to blood via exocytosis.
C. Oxitocin stimulates uterine muscle contraction in a negative feedback manner
D. Protein and peptide hormones directly stimulate gene transcription via binding to DNA associated receptors
E. Steroid and thyroid hormones are transported in blood by albumin and hormone-specific proteins (globulins)

15. Protein hormones influence cellular activities by:

A. binding to surface receptors and activation of G-protein
B. production of second messengers, e.g., cyclic AMP
C. activation or inhibition of enzymes
D. both A) and B)
E. all of the above

16. Which of the following (A, B or C) represents the autocrine stimulation?



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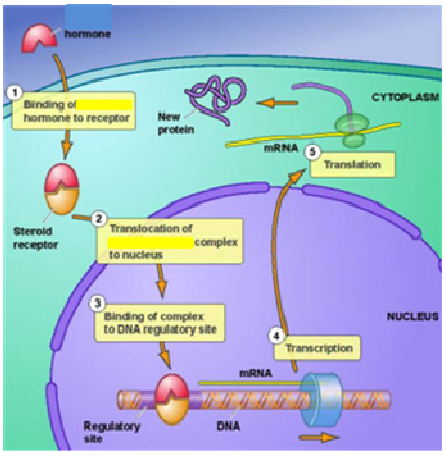
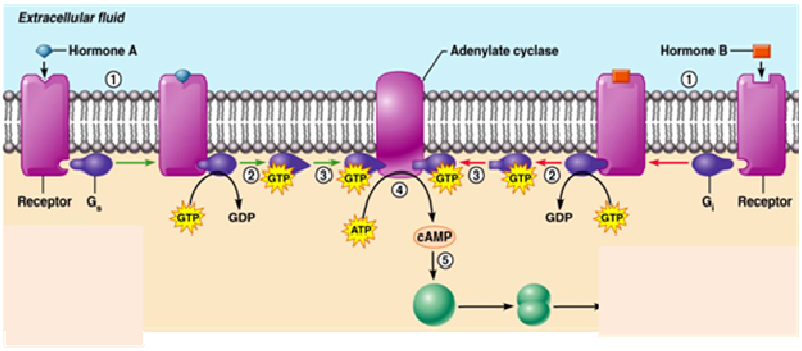
17. Which of the following (A or B) represents mechanism of action of a steroid hormone?

A.



B.



18. The information (stimulus) detected by the body's receptors, travels via the the_____ to the _____.:

A. motor neurons; control center
B. sensory neurons; control center
C. afferent pathway; effector
D. efferent pathway; control center

19. Neurotransmitter released from the preganglionic nerve fibres of the sympathetic nervous system (SNS) is _____and released from the postganglionc nerve fibers of the SNS is_____

A. epinephrine; acetylcholine
B. acetylcholine; acetylcholine
C. epinephrine; epinephrine
D. acetylcholine; epinephrine

20. Which of the following is NOT a phase of erythropoiesis?

A. ejection of the nucleus
B. mitosis of reticulocytes
C. synthesis of hemoglobin molecules
D. production of ribosomes

21. **Thrombopoetin is a hormone that:**

A. stimulates platelet production
B. blocks the activity of thrombin
C. activates thrombin
D. dissolves thrombi (plural of thrombus)

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22. A type of anemia in which RBCs have changed shape, are rigid and tend to occlude blood vessels and thus may lead to hypoxia is called…….anemia.

A. iron-deficiency
B. sickle cell
C. hemorrhagic
D. pernicious

23. Which of the following might trigger erythropoiesis?

A. decreased tissue demand for oxygen
B. polycythemia
C. moving from a high altitude to a low altitude
D. excessive menstrual bleeding
E. kidney failure

24. Dissolution (lysis) of fibrin mesh requires_____and_____:

A.	thrombin;	calcium
B.	plasminogen activator;	plasmin
C.	heparin;	vitamin K
D.	antitrypsin;	magnesoium
E.	vonWillebrand factor	magnesium

25. Which of the following statements is TRUE?

A. Lack of the coagullation factor VIII is the main cause of sickle cell anemia.
B. Hemophilia A and B are the hereditary disorders affecting men but carried by women
C. Thalassemia is a hereditary disorder common in people of the African-American origin.
D. Polycythemia vera is a hereditary disease characterized by a low number of RBCs

26. The first two stages of hemostasis involve:

A. platelet plug formation and blood coagulation
B. vasodilation and platelet plug formation
C. vasoconstriction and platelet plug formation
D. mobilization of the vonVilebrandt factor and platelet activation

27. Which of the following cause ONLY the extrinsic pathway of blood coagulation to be followed?

A. the release of tissue factor by damaged tissue cells
B. sticking of platelets to roughened blood vessel walls
C. activation of a proenzyme exposed to collagen
D. release of heparin by the liver
E. the conversion of prothrombin to thrombin

28. Aged and damaged RBCs:

A. are engulfed by macrophages of the large intestine
B. are degraded to globin and heme and excreted from the body with feces
C. are engulfed by macrophages of the spleen
D. are degraded to amino acids, blilirubin and iron that are all stored in the body for future use
E. are hemolyzed in blood and released with urine

29. Which of the following is true about the macrocytic (megaloblastic) anemia?

A. It is characterized by a presence of large RBCs that have limited capacity to carry oxygen
B. It is characterized by a presence of small RBCs that still have their nuclei
C. It is caused by iron deficiency
D. Both A) and C)
E. all of the above

30. What erythrocyte production disorder results from an autoimmune disease associated with vitamin B12 absorption?

A. Hemorrhagic anemia
B. Aplastic anemia
C. Pernicious anemia
D. Megaloblastic anemia
E. Microcytic anemia

31. Which of the following statements is <u>FALSE?</u>

A. Blood is considered a type of connective tissue.
B. The only complete cells in blood are leukocytes.
C. Platelets and mature RBCs do not contain nuclei
D. The globin portion of the hemoglobin molecule binds and carries O2.

32. Select the correct statement regarding RBCs:

A. the main sites of RBCs formation in adults are the spleen and the liver
B. red bone marrow is the main site of RBCs formation in adults
C. each RBC contains about 250 million haemoglobin molecules
D. Both A) and C) are true
E. Both B) and C) are true

33. _____ plays an important role in clot formation.

A. Thrombin
B. Plasmin
C. Heparin
D. Urokinase
E. Streptokinase

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34. During blood vessel injury, the role of the von Willebrand factor is:

A. to convert plasminogen to plasmin
B. to initiate platelets adhesion to the exposed collagen fibers
C. to initiate release of prostacyclin
D. to release histamine that causes vasoconstriction of the injured vessel

35. Ali has a platelet count of 700,000 per microliter of blood. Which of the following statements is TRUE about Ali's platelets count?

A. it is normal
B. it indicates thrombocytopnia
C. it indicates thrombocytosis
D. none of the above

36. Which of the following statements is true?

A. Under normal, healthy conditions anticoagulants such as thrombin and activated factor X inactivate procoagulants and prevent formation of clots
B. Under normal, healthy conditions anticoagulants such as antithrombin III and heparin inactivate procoagulants and prevent formation of clots
C. Under normal, healthy conditions the number of platelets is about 15,000 to 40,000 in each microliter of blood
D. Blood loss leads to decreased production of thrombopoietin

37. Which of the following statement <u>IS NOT true</u> about blood?

A. Blood has a pH of 7.45 – 7.55
B. Blood has a temperature of 38 C°
C. Blood accounts for approximately 8% of an adult male's body weight
D. Blood volume may be decreased by dehydration

38. Which of the following is true about anemia?

A. Iron deficiency anemia is characterized by low hemoglobin, low ferritin and high transferring levels
B. Iron deficiency with anemia is characterized by high hematocrit
C. Sports anemia is characterized by low RBC count and can be cured by iron supplements
D. Pernicious anemia is due to low iron content in the diet

39. In a centrifuged sample of blood, what makes up a buffy coat?

A. Red blood cells
B. Platelets only
C. plasma
D. White blood cells and plateles

40. Sameer had an untreated strep throat that led to calcification of his heart's bicuspid (mitral) valve. Now, he suffers from a reduced rate of blood flow:

A. from the left ventricle to the aorta
B. from the inferior vena cava into the right atrium
C. from the left atrium into the left ventricle
D. from the right atrium into the right ventricle
E. from the right ventricle into the pulmonary artery

41. The endocardium is:

A. the outermost muscular layer of the heart
B. the innermost lining of the heart
C. the thick muscular layer of the heart that provides pumping action
D. a double-walled membranous sac that encloses the heart

42. The coronary arteries arise from:

A. inferior vena cava
B. superior vena cava
C. pulmonary trunk
D. aorta
E. right atrium

43. Cardiac muscle fibres remain depolarized longer than skeletal muscle fibres because:

A. voltage-gated sodium channels close more quickly to trap sodium inside longer
B. voltage-gated potassium channels open at the same time as sodium channels, allowing more positively charged potassium to enter
C. it takes longer to reach threshold, and the duration of depolarization is directly proportional to the time it takes to reach threshold
D. the intercalated discs are very thick relative to the rest of the sarcolemma and it takes longer for potassium to exit the cell to cause repolarization
E. right after sodium influx and closure of sodium channels, calcium enters the cytosol of the cardiac muscle cells and prolongs depolarization

44. Which of the following lists the elements of the heart's conduction system in the correct order?

A. SA node, AV bundle, bundle branches, AV node, Purkinje fibres
B. AV node, AV bundle, SA node, bundle branches, Purkinje fibres
C. SA node, AV node, AV bundle, bundle branches, Purkinje fibres
D. SA node, AV bundle, bundle branches, AV node, Purkinje fibres

45. The left ventricular wall of the heart is thicker than the right ventricular wall because it has to:

A. pump blood with greater pressure and against greater resistance
B. accommodate a greater volume of blood
C. expand the thoracic cage during diastole
D. pump blood through a smaller valve

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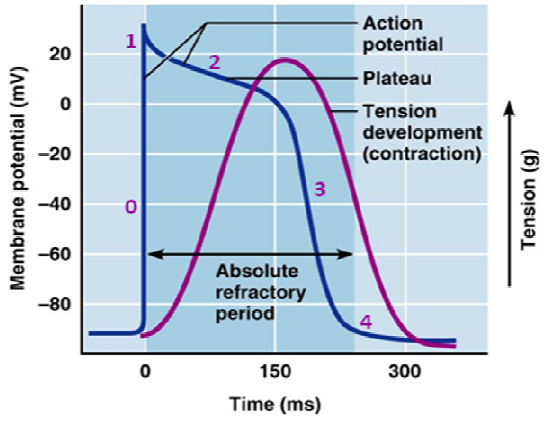
46. The chordate tendinae:

A. Close the atrio-ventricular valves
B. Prevent AV flaps from everting
C. Control the papillary muscles
D. Open semilunal valves

47. Oxygenated blood flows to the _____ through the_____:

A.	right atrium;	superior vena cava
B.	right atrium;	pulmonary artery
C.	left atrium;	pulmonary veins
D.	left atrium;	coronary veins

48. Which of the following represents depolarization?



A. 0, 1, 2
B. 1, 2, 3
C. 2, 3, 4
D. 3, 4