**FORM- A** Name: \_\_\_\_\_\_\_\_\_\_\_**PracticeTest**\_\_\_\_\_\_\_\_\_\_\_

Anatomy and Physiology 212: Test #1: 50 points

**ON YOUR SCANTRON, PUT YOUR NAME AND TEST FORM LETTER ON FRONT TOP and SIDE!**

YOU MAY WRITE ON THIS TEST, although it will not be given back.

**Multiple Choice (1 pt each): Choose the one best answer for each question on scantron (double check for smears) and put “written” answers on the back of the scantron.**

1) **a) True** or b) False: In type 2 diabetes (Adult onset or also called NIDDM) the adipocytes of a person may become unable to recognize insulin as a signal for glucose uptake from the blood.

2) a) True or **b) False**: Optimal glucose absorption by brain cells requires the presence of insulin.

3) \_\_\_\_\_\_\_\_\_is a hormone made by the pineal gland that promotes the sleep phase of our circadian rhythm.

**a) Melatonin** b) Serotonin c) Somatostatin d) Thymopoietin

4) a**) True**  b) False: As a second messenger, inositol triphosphate (IP3) causes the opening of calcium channels and results in the contraction of specific smooth muscle cells.

5) Which type of hormone affects only the cells adjacent to the one that created it?

a) Autocrine **b) Paracrine**  c) Endocrine d) All of above

6) If oxytocin and prostaglandin both promote contraction of the uterus at birth. The activities of the two would be \_\_\_ relative to each other.

a) Pharmacological b) Antagonistic **c) Synergistic**  d) Down regulated

7) Calcium-rich kidney stones might be expected to occur if the \_\_\_\_\_\_was hyperactive and caused high blood levels of calcium (hypercalcemia).

a) C-cells of thyroid gland  **b) Parathyroid glands**  c) Pancreatic Beta cells d) A and B e) None of above

8) **a) True**  b) False: If you produce a large amount of cortisol, you would probably observe an increase in your blood glucose and a reduction in the amount of glycogen in your liver.

9) If you had kidney failure and were in need of a transplant and dialysis, which hormone could help make up for chronic anemia?

a) Albuterol b) Aspirin c) Aldosterone d) Prostacyclin **e) None of above**

10**) a) True** b) False: Hyperthyroid activity (excess T3) could easily explain why a person had an anorexic-like appearance and was always warm to the touch.

11) Which hormone promotes growth and other energy demanding reactions in body?

a) Thyroxine b) Insulin c) Growth hormone **d) All the above**

12) What specific adrenergic receptor causes the heart to beat more forcefully during stressful situations like this test? a) Alpha-1 b) Alpha-2 **c) Beta-1**  d) Beta-2 e) Beta-3

13) When a hormone like epinephrine binds its alpha-1 receptor, a \_\_\_\_\_\_\_\_\_\_\_is released inside the target cell that stimulates phospholipase-C to produce inositol triphosphate (IP3).

a) Calmodulin **b) G-protein**  c) cAMP d) Inhibitory post synaptic potential

14) Which hormone relies on an enzyme called tyrosine kinase to regulate the movement of glucose into an adipocyte?

a) Glucagon b) Oxytocin **c) Insulin**  d) Albumen

15) Which hormone is produced in an inactive state (pro-hormone) and clipped inside a Beta-cell making it active prior to release into the blood?

a) Testosterone  **b) Insulin**  c) Oxytocin d) Nitric oxide

16) Which of the following may occur because a diabetic cannot produce insulin?

a) Polyuria b) Polydipsia c) Polyphagia **d) All of the above**

17) Which hormone rapidly decreases plasma calcium, especially in infants?

**a) Calcitonin** b) Parathyroid hormone c) Thyroxine

18) Thyroxin is stored in the follicles of the thyroid gland in a fluid called\_\_\_\_\_.

A) Goiter B) Creatinism C) Acromegally **D) Colloid**  E)Plasma

19) a) True  **b) False:** The adrenal medulla produces sex-steroids, glucocorticoids and mineralocorticoids, and the adrenal cortex produces catecholamines like epinephrine and norepinephrine.

20) **a) True** b) False: Stress stimulates the secretion of adrenocorticotropic hormone (ACTH) which increases the amount of cortisol you produce.

21) Which of the following hormones has the least in common with the others?

**a) Glucagon** b) Aldosterone c) Erythropoietin d) Vasopressin (ADH)

22) Which hormone allows the heart to lower blood pressure?

A) Erythropoeitin **B) Atrial naturetic factor** C) Antidiuretic hormone D) Mineralocorticoids

E) None of above

23) \_\_\_\_\_\_is a pancreatic hormone that utilizes cyclic AMP as a second messenger to signal hunger in the liver cells.

a) Insulin  **b) Glucagon** c) Thyroxine d) All of above

24) a) True b) False: Fat soluble hormones (i.e. testosterone) pass through the plasma membrane easily, while water soluble hormones (i.e. epinephrine) cannot.

25) Which type of diabetes is almost always associated with an absence of beta cells in pancreatic islets?

a) Type 1 or IDDM b) Type 2 or Non-IDDM c) Diabetes Insipidus d) Gestational diabetes

26) A water soluble hormone called \_\_\_\_\_\_is produced by the adrenal \_\_\_\_\_\_\_\_ and can also be used as a neurotransmitter to help you manage stress.

a) DHEA, Zona Fasciculata b) Aldosterone, Zona Glomerulosa

**c) Epinephrine, Medulla**  d) Acetylcholine, Cortex

e) Thyroxine, Colloid

27) The first step in hemostasis is what?

a) Forming fibrin cross-links b) Platelet degranulation c) Activation of plasmin **d) Vasospasm**

28) Testosterone and progesterone have\_\_\_\_\_\_\_as the base of their chemical structure.

a) Cholesterol b) Protein c) Glucose d) Catecholamine

29) The breakdown of a clot is referred to as\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a) Embolism b) Thrombosis  **c) T hrombolysis**  d) Hematoma

30) Which of the following allows your body to store iron (Fe++) in your liver?

a) Hemoglobin  **b) Apoferritin** c) Albumen d) Tyrosine kinase

31) \_\_\_\_\_\_\_\_is a particle in the blood that carries triglycerides from Dr. Wilson’s intestine to his body after eating a nasty pile of fried potatoes and sausage for breakfast.

a) Very low density lipoprotein b) Low density lipoprotein c) High density lipoprotein **d) Chylomicron**

32) During starvation, children often times are unable to produce enough \_\_\_\_\_\_\_\_and Kwashiorkor (ascites) develops when fluids accumulate in their abdomen giving them a “pot-bellied” appearance?

**a) Albumen**  b) Aldosterone c) Fibrinogen d) Hemoglobin

33) A low levels of oxygen in a tissue is called what?

A) Anoxia B) Hypoxia c) Anemia d) Hematopoesis

34) Which of the following could increase your blood volume or hematocrit?

A) Injection of erythropoeitin b) Receive a blood transfusion c) Move to the mountains

d) Hold their breath for long periods of time several times a day for a month or two

**e) All of the above**

35) a)True **b)False:** The typical female hematocrit is about 47% and a typical male hematocrit is about 42%.

36) **a) True**  b) False: EDTA and sodium citrate are chemicals that prevent blood clotting in collected blood samples by removing the calcium.

37) Which of the following could increase the packed cell volume (hematocrit) of a person’s blood?

a) Massive dehydration b) Severe hyperglycemia c) Excess erythropoietin

d) Removal of excess plasma **e) All the above**

38) If a small blood sample in a capillary tube was centrifuged, you would want to examine the \_\_\_\_\_\_to look to see if the person had too may white blood cells.

a) Red blood cells  **b) Buffy coat**  c) Plasma color d) Changes in all three are equally indicative of disease

39) Which of the following formed elements HAS a nucleus?

a) Platelet b) Red blood cell  **c) White blood cell**  d) A and B e) All of the above

40) If a person weighed 220 pounds (100 kilograms) they would probably have about \_\_\_\_\_liters of blood if they experienced massive exsanguination and LOST TWO LITERs of blood prior to the completion of hemostasis.

a) 4 liters **b) 6 liters**  c) 10 liters d) 16 liters

41) \_\_\_\_\_\_and \_\_\_\_\_\_\_\_in the spleen and liver help break up old red blood cells after about 120 days.

**a) Macrophages, Narrow sinusoids**  b) Jaundice, Erythropoietin

c) Erythropoiesis, Second messengers d) Malaria, Agglutination

42) Which type of anemia could occur if you rapidly lost two liters of blood?

a) Synthetic **b) Hemorrhagic**  c) Hemolytic d) Polycythemic

43) The \_\_\_\_\_\_\_\_clotting cascade is initiated (started) when platelets come in contact with collagen in the wall of the blood vessel. **a) Intrinsic**  b) Extrinsic

44) What plasma protein becomes “sticky” after thrombin acts upon it near the end of the clotting cascade?

a) Albumen b) Globulin **c) Fibrinogen**  d) Vitamin K

45) Serum has had what material removed?

a) Plasmin b) Erythrocytes **c) Fibrinogen**  d) Globulin

46) Which of these is a granulocyte associated with protection from parasites?

a) Monocyte b) Lymphocyte  **c) Eosinophil**  d) Red blood cell

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**47) 2 points each nn the Back of the scantron:**

A) Draw the anatomical relationship of the anterior/posterior pituitaries, the hypothalamus and related blood vessels/capillaries/axons.

B) Name one hormone produced by the hypothalamus, one hormone produced by the posterior pituitary and one hormone produced by the anterior pituitary AND ***ONE*** FUNCTION for each hormone (minimum 5-10 words per item).

**Extra Credit: Write one-word answers on the back of the scantron**

1 Pt: Name a type of hormone that consists of a fatty acid: ***Prostaglandins like thromboxane***  **See notes and book**

1 Pt: Tyrosine kinase adds what functional group to the hydroxyl on the amino acid ? ***Phosphate-see notes/book***

**Did you write FORM A on your scantron?**