Final Exam- Requires Respondus LockDown Browser

Score for this quiz: 190.5 out of 200
Submitted Apr 8 at 4:46pm
This attempt took 99 minutes.

Question 1
2.5 / 2.5 pts

True/False:

Metaplastic cells are not better prepared to survive under stressful circumstances.

True
Correct!
False

Question 2
2.5 / 2.5 pts

True/False:

Hypertrophy can occur under normal and pathological conditions.

Correct!
True
False

Question 3
2.5 / 2.5 pts

Multiple Choice

Which are **true** of the mitochondria? Select all that apply.

Correct!
☑
It is involved in cellular respiration
☐
They are found far from the site of energy consumption
Correct!
☑
They play a role in apoptosis
☐
They control free radicals

Question 4
2.5 / 2.5 pts

Which are **true** of the cell membrane? Select **all** that apply.

Correct!
☑
Controls the transport of materials from the outside fluids to within
☐
The main structural component is made of proteins
Correct!
☑
Helps with the conduction of electrical currents in nerve and muscle cells
Correct!
☑
Aids in the regulation of cell growth and proliferation

Question 5
10 / 10 pts
Compare and contrast the two types of gangrenous necrosis.
Your Answer:

Dry gangrene occurs when blood supply is slowly reduced to an area. The area is dehydrated and becomes dark or black in color. Commonly seen in patients with diabetes. It is not very painful, but tissues eventually die.

Wet gangrene is casued with a sudden reduction in blood flow. The area is cold and swollen, with no pulse. This can occur from trauma. Bacteria is involved and is very painful. It has the appearance of pus, becasue it looks wet. There is also a foul smell.

In dry gangrene the affected tissue becomes dry and shrinks, the skin wrinkles, and its color changes to dark brown or black. The spread of dry gangrene is slow. It results from a cut off in arterial blood supply and is a form of coagulation necrosis. In wet gangrene, the

affected area is cold, swollen, and pulseless. The skin is moist, black, and under tension. Blebs form on the surface, liquefaction occurs, and a foul odor is caused by bacterial action. The spread of tissue damage is rapid.

Question 6
2.5 / 2.5 pts

True/False:

Cell proliferation is the process in which proliferating cells become more specialized cell types.

True
Correct!

False
False, cell differentiation

Question 7
2.5 / 2.5 pts

True/False:

Cell differentiation is the process of increasing cell numbers by mitotic cell division.

True
Correct!

False
False, cell proliferation

Question 8
2.5 / 2.5 pts
What are two important properties that stem cells possess?
Your Answer:

Stem cells possess potency and self-renewal.

Potency and self-renewal

Question 9
2.5 / 2.5 pts

These are cells of the same lineage that have not yet differentiated to the extent that they have lost their ability to divide:
Your Answer:

progenitor or parent cells

progenitor or parent cells

Question 10
10 / 10 pts

1. _____ is a systemic treatment that enables drugs to reach the site of the tumor as well as other distant sites.

2. The profound weight loss and wasting of fat and tissue that accompany cancer is known as _____.

Your Answer:

1. chemotherapy

2. cancer anorexia-cachexia syndrome

1. chemotherapy

2. cancer anorexia-cachexia syndrome

Question 11
5 / 5 pts

Short answer

Explain the challenges of diagnosing autoimmune disorders.

Your Answer:

There are about 80 autoimmune disorders identified, with many overlapping presentations. Blood tests can be more generic and results are imprecise. Markers can be elevated in the presecence of other diseases.

There are over 80 identified, many with overlapping presentations. Many manifestations are nonspecific and are seen in other non-autoimmune diseases. Blood testing isn't perfect either, as some tests are more generic and can be elevated in the presence of other diseases.

Question 12
2.5 / 2.5 pts

True/False:

The T cells that display the host's MHC antigens and T-cell receptors for a nonself-antigen are allowed to mature, a process termed negative selection.

True
Correct!
False

Question 13
2.5 / 2.5 pts

Multiple Choice:

Which lab value will typically be increased in a viral infection?

Neutrophils
Eosinophils
Basophils
Correct!
Lymphocytes

Question 14
10 / 10 pts

A 9-year-old boy with a peanut allergy was exposed to peanuts. He presents to the emergency room with an anaphylactic reaction. (1) What symptoms might he present with? (2) Does the quantity of exposure mean he will have a more severe reaction? (3) What is the initial immediate treatment? (4) What are 2 things people with anaphylaxis should always carry?
Your Answer:

1) Shortness of breath, skin redness/hives, GI discomfort such as cramping, nausau.

2) Does NOT play a role

3) epinephrine

4) idenitification of the allergy and EpiPen

(1) Any of the following reactions are accepted.

Grade I: erythema and urticaria, with or without angioedema.

Grade II: hypotension, tachycardia, dyspnea, and GI manifestations, like nausea, vomiting, diarrhea, and abdominal cramping from mucosal edema.

Grade III: bronchospasm, cardiac dysrhythmias, and cardiac collapse.

Grade IV: cardiac arrest

(2) No

(3) Epinephrine

(4) identification about allergy, EpiPen

Question 15
0 / 2.5 pts

Multiple Choice:

A 23-year-old African-American man with a history of severe lifelong anemia requiring many transfusions has nonhealing leg ulcers and recurrent periods of abdominal and chest pain. These signs and symptoms are most likely to be associated with which one of the following laboratory abnormalities?

Correct Answer

Sickle cells on peripheral blood smear

Loss of intrinsic factor
You Answered

Decreased erythropoietin

Decreased ferritin

Question 16
2.5 / 2.5 pts

Multiple Choice:

Which of the following is NOT true of vitamin B12 deficiency anemia?

Dietary deficiencies are not common

Peripheral neuropathy can be a result of deficiency

Vitamin B12 is bound to intrinsic factor
Correct!

MCV is decreased

Question 17
2.5 / 2.5 pts

Multiple Choice:

Each of the following are risk factors for secondary hyperlipidemia except?

Obesity

Diabetes mellitus

High cholesterol diet

Correct!

Autosomal dominant disorder of LDL receptor

Question 18
2.5 / 2.5 pts

Multiple Choice:

Risk factors for coronary heart disease include each of the following except:

Correct!

HDL > 60

Smoking

Hypertension

Family history of heart disease

Question 19
10 / 10 pts

Patient is found to have the above:

1. What risk factors mostly led to this disease state?
2. What is this person at risk for developing?
3. What lifestyle modifications would you suggest for them?

Your Answer:

1) Smoking, poor diet, hyperlipidemia, obesity, diabetes, increased age

2) Coronary artery disease, myocardial infarction

3) Stop smoking, healthy diet, lose weight/exercise, take medications

Answer: Picture is of an atherosclerotic plaque

1. **Hyperlipidemia, cigarette smoking, obesity and visceral fat, hypertension, diabetes mellitus. Increasing age, family history of premature CHD, and male sex. May also include C-reactive protein (CRP) and serum lipoprotein(a).**
2. **Coronary artery disease, angina, myocardial infarction, aneurysm, stroke (ischemia, thrombosis, emboli).**
3. **Stop smoking, lose weight/exercise, healthy diet (low-fat, low-cholesterol), adhere to medication for blood pressure, hyperlipidemia, and/or diabetes.**

Question 20
5 / 5 pts
_____ is the transfer of gases between the alveoli and the pulmonary capillaries.
Your Answer:

diffusion

Diffusion

Question 21
5 / 5 pts

Multiple Choice:

Each of the following can lead to atelectasis except:

Pleural effusion

Tumor mass
Correct!

Thrombus

Mucous plug

Question 22
8 / 10 pts

Short answer:

A 10-year-old boy who is having an acute asthma attack is brought to the ER. He is observed to be sitting up and struggling to breathe. His breathing is accompanied by use of accessory muscles, a weak cough, and audible wheezing sounds. His pulse is rapid and weak, and both heart and breath sounds are distant on auscultation. His parents relate that his asthma began to worsen after he developed a "cold," and now he doesn't get relief from his albuterol inhaler.

Explain the changes in physiologic function underlying his signs and symptoms.

Your Answer:

In asthma patients, airways begin to narrow. A trigger, such as a cold virus, can start a cascade of inflammatory cells to cause epithelial injury, resulting in airway inflammation. With severe airway inflammation, patient is experiencing remodeling, which is development of specific structural changes in the airway wall.

Recruitment of inflammatory cells from the bloodstream into the bronchial wall, where they directly attack the invading organisms and secrete inflammatory chemicals that are toxic to the organisms causes airway inflammation. Swelling of the bronchial wall, mucus secretion, constriction of the airway; bronchial hyper-responsiveness to stimuli causes airway obstruction or narrowing. *They may discuss on a cellular level as well:*

Upon a trigger, the cascade of neutrophils, eosinophils, lymphocytes, and mast cells cause epithelial injury. This causes airway inflammation, which further increases hyperresponsiveness and decreased airflow. Mast cells release histamine and leukotrienes. These cause major bronchoconstriction, inflammation, and mucus secretion. Mast cells can trigger multiple cytokine release, which causes more airway inflammation. The contraction of the airways and subsequent swelling leads to further airway obstruction.

Question 23
5 / 5 pts

T/F – Make true if False

Oligodendrocytes produce myelin in the PNS.

Your Answer:

False

Answer: False, oligodendrocytes produce myelin in the CNS.

Question 24
5 / 5 pts

T/F – Make true if False

Someone in the early stages of Alzheimer's disease requires assistance for their activities of daily living.

Your Answer:

False

Answer: False, in the early stages of Alzheimer's disease, individuals are still independent with their ADLs.

Question 25
10 / 10 pts

Long Answer Essay

A 75-year-old male is brought to the emergency department via ambulance at 5 pm. The patient's spouse reports that when they woke up (approximately at 6 am) he reported to her that he was having some blurred vision but decided to go about his day. As the day progressed, he started experiencing tingling and feelings of weakness on the entire left side of his body. He has a past medical history of diabetes. Based upon these symptoms and past medical history, what

do you suspect this patient is experiencing? How would you confirm this diagnosis? What treatment should be administered? Explain why you chose that treatment.

Your Answer:

Patient was more than likely experiencing an ischemic stroke. A CT scan and MRI will be ordered to determine if a blood clot was blocking blood flow and to rule out hemorrhagic stroke. If a clot is located and the patient is outside the 4 hour treatment window, a catheter based method to break the clot would be needed.

Answer: This patient is more than likely experiencing an ischemic stroke. A CT scan and MRI would be needed to determine if a clot was blocking blood flow to the brain tissue and to rule out a hemorrhagic stroke. If a clot is found, this patient would need to be re-perfused through catheter-base methods as they are outside of the 3-4.5 treatment window for the use of tPA drugs.

Question 26
0 / 5 pts

Multiple Choice:

Risk factors for gallstone formation include each of the following EXCEPT:

Obesity
Correct Answer

Male gender

Age (40's)
You Answered

Pregnancy

Question 27
5 / 5 pts

Multiple choice

Risk factors for the development of peptic ulcer include each of the following EXCEPT:

pylori infection

Family history of PUD

NSAID use

Alcohol use

Correct!

Stress

Question 28
5 / 5 pts

Short answer

What are rhythmic movements designed to propel the chyme along the small intestine toward the large intestine?

Your Answer:

peristalsis

Answer: Peristaltic movements

Question 29
5 / 5 pts

True/False:

Anti-diarrheal medication can be used with all types of diarrhea.

True

Correct!

False

Question 30
2.5 / 2.5 pts
Which of the following is characteristic of chronic transplant rejection?
Correct!

Involves humoral immunity

It responds well to immunosuppressive therapy

Involves increased T lymphocytes

Question 31
2.5 / 2.5 pts

A patient is said to be in stage 2 kidney disease. What would you expect their GFR to be?

A. 97 mL/min/1.73m^2
B. 42 mL/min/1.73m^2
C. 70 mL/min/1.73m^2
D. 14 mL/min/1.73m^2

A.

B.
Correct!

C.

D.

Question 32
5 / 5 pts

Short Answer:

Explain how the kidney can maintain a constant GFR despite variations in the arterial blood pressure of the rest of the body.

Your Answer:

There are 3 mechanisms that regulate remal blood flow and regulate the GFR:

1) renal autoregulation

2) nervous system control

3) hormonal control

Answer: The renal autoregulatory system causes the efferent arteriole to constrict leading to an increased resistance to outflow from the glomeruli with a subsequent increase in glomerular pressure and the GFR. When the afferent arteriole constricts there is a reduction in renal blood flow, glomerular pressure, and the GFR.

Question 33
10 / 10 pts
A patient presents in the emergency department with severe dehydration secondary to vomiting. The following are the results of their blood work: pH = 8.2, PCO_2 = 39 mm, and HCO_3^- = 33 mEq/L. Based upon these results, what type of acid-base disorder are they experiencing? Is compensation occurring? Describe a treatment intervention for this disorder. Normal values are as follows: pH = 7.35-7.45, PCO_2 = 35-45 mm, HCO_3^- = 22-26 mEq/L.
Your Answer:

Metabolic alkalosis. There is no respiratory compensation because the PCO2 levels fall within normal range. Treatment is fluid replacement with normal saline solution.

Answer: The patient is in metabolic alkalosis. The respiratory system is not compensating as PCO_2 compensation falls within normal limits. Fluids are replaced with normal saline solution.

Question 34
5 / 5 pts

Multiple Choice:

Signs and symptoms of Addison's disease include each of the following EXCEPT:

Hyperpigmentation

Weight loss

Muscle weakness
Correct!

Hyperglycemia

Question 35
2.5 / 2.5 pts
An endocrine hormone is released into circulation to act on a target organ.
Correct!

True

False

Question 36
2.5 / 2.5 pts
Hormones work through receptors, and the speed of this action varies.
Correct!

True

False

Question 37
5 / 5 pts

A 45-year-old woman presents with fatigue, weight gain, and cold intolerance. Lab findings show a low serum T4 and elevated TSH.

1. What diagnosis would her history and lab findings indicate?
2. What type of treatment should be given?

Your Answer:

1) Hypothyroidism

2) Synthetic T4 thyroid hormone called thyroxine is used to treat hypothyroidism

Answer: (1) Hypothyroidism; (2) synthetic T4 thyroid hormone, thyroxine

Question 38
5 / 5 pts
Symptoms of diabetic ketoacidosis (DKA) include each of the following EXCEPT:

Polydipsia

Dehydration

Fruity smell on the breath
Correct!

Bradycardia

Question 39
2.5 / 2.5 pts

Multiple Choice:

Which of the following would a patient likely report if you suspect they have OA?

Pain in their MCP joint
Correct!

Stiffness in the morning that resolves in less than 30 minutes

Pain that would be described as “acute”

They feel “looser” after they move around

Question 40
2.5 / 2.5 pts

Blood circulates through bone by what means? **(mark all that apply)**

Correct!

Via the central Haversian and Volkmann canals
Correct!

An anastomosis between perforating and nutrient arteries
Correct!

Diffusion through the endosteal surface of the bone and the canaliculi

Question 41

5 / 5 pts
If someone loses their balance when walking on uneven terrain, explain how tendons and ligaments work to protect the joint and structures within it.
Your Answer:

Tendons and ligaments are in proprioception, menaing have awareness of one's position in space or movement of the body. When they undergo stretch, like walking on uneven terrian, the proprioception nerve fibers cause a reflex response to adjust the tension in the muscle. This will allow the body to maintain balance. The molecualr structure of tensons and ligamants are of a collagen that contributes to high tensile strength.

The tendons and ligaments of joints serve in proprioception (the awareness of ones' position in space or movement of the body). When these structures undergo stretch or torsional strain, these proprioceptive nerve fibers will cause a reflexive response to adjust the tension on the muscles (to maintain balance and not fall over) that support the joint protecting the capsule and other joint structures.

Question 42
10 / 10 pts
A 72-year-old male is said to be in phase 3 of gout. He is obese and has a history of alcohol abuse. Develop a treatment plan including specific pharmacologic intervention and a non-pharmacologic recommendation to manage his disease.
Your Answer:

Phase three gout is called inter-critical phase. The goal is to prevent future attaks by maintaining normal uric acid levels, hense prevent disease progression. Allopurinol is used to reduce uric acid levels. Lifestyle changes, such asweight loss, reduction in alcohol consumption, and avoid foods high in purines (fish, bacon, shellfish).

Phase 3 of gout is called inter-critical gout. The patient is asymptomatic, and no joint abnormalities are present. The goal of treatment in this phase is to maintain normal uric acid levels and prevent progression of the disease. Allopurinol is a prescription drug that is used to reduce uric acid levels. This patient should be encouraged to lose weight and decrease his alcohol consumption. He should also avoid purine rich foods such as fish, bacon, and liver. (*Note – the student has to provide 1 pharmacologic intervention and 1 non-pharmacologic recommendation.)