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Names: _____

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Team # ____

SSSS 2017 Anatomy & Physiology Practice Test - KEY

Digestive, Respiratory, Immune

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Section 1 - Multiple Choice

Section 2 - Short Answer

Section 3 - Matching

Section 4 - True/False

Section 5 - Labelling

Take your time and pace yourself. Good luck!

Section 1 - Multiple Choice: Each correct answer earns one point.

1. A person, while lying on bed, experiences labored breathing and shortness of breath. Which of the following terms BEST describes this breathing pattern?

a) Tachypnea
b) Dyspnea
c) Orthopnea
d) Apnea

2. Which law states that that the total pressure of a gas mixture is the sum of the partial pressures of the individual gases?

a) Charles' Law
b) Dalton's Law
c) Boyle's Law
d) Henry's Law

3. Which of the following isn't a part of the small intestine?

a) Ileum
b) Cecenum
c) Duodenum
d) Jejunum

4. Which of the following has little effect on respiration?

a) Hydrogen ion concentration
b) Carbon dioxide ion concentration
c) Oxygen ion concentration
d) Nitrogen ion concentration

5. How many teeth does a normal adult human have? (Excluding wisdom teeth)

a) 28 teeth
b) 30 teeth
c) 32 teeth
d) 34 teeth

6. Which of the following is an enzyme that digests starch?

a) Maltase
b) Catalase
c) Rennin
d) Amylase

7. Which one of the following isn't an accessory muscle of inspiration?

a) Quadratus lumborum
b) Scalene Muscles
c) Sternocleidomastoid
d) Pectoralis minor

8. Which one of the following is the largest of the larynx cartilages?

a) Thyroid cartilage
b) Cricoid cartilage
c) Cuneiform cartilage
d) Corniculate cartilage

9. Which of the following is the largest of the volumes of lung capacity?

a) Residual Volume
b) Tidal Volume
c) Expiratory Reserve Volume
d) Inspiratory Reserve Volume

10. Where does chemical digestion start?

a) Stomach
b) Small Intestine
c) Mouth
d) Large Intestine

11. Which of the following isn't an accessory organ?

a) Gallbladder
b) Pancreas
c) Liver
d) Stomach

12. Which of the following isn't a function of the colon?

a) Absorbing water
b) Collects undigested waste
c) Feces are formed
d) Bacterial fermentation takes place

13. Which of the following structures of the respiratory systems is lined by by ciliated pseudostratified columnar epithelial tissue?

a) Nasopharynx
b) Oropharynx
c) Laryngopharynx
d) Pharynx

14. Which type of cartilage are the C-rings of the trachea made from?

a) Fibrous cartilage
b) Hyaline cartilage
c) Elastic cartilage
d) Annulus cartilage

15. Which of the following hormones makes up a big portion of the mucous secretions of the submandibular and sublingual glands that gives a lubricating quality to the secretions of the glands?

a) Lecithin
b) Motilin
c) Mucin
d) Secretin

16. After ingestion, the first type of macromolecule to be worked on by enzymes in the human digestive system is?

a) Protein
b) Carbohydrate
c) Lipid
d) Nucleic Acid

17. Which of the following organs of the digestive system has the lowest pH?

a) Small intestine
b) Large intestine
c) Stomach
d) Liver

18. Which of the following is the outer layer of the intestines is the?

a) Mucosa
b) Serosa
c) Submucosa
d) Muscularis

19. Which of the following places are lymph nodes not found in?

a) Brain
b) Small intestine
c) Liver
d) Pancreas

20. Which of the following types of white blood cells are the phagocytes in tissues that are in contact with the external environment?

a) Neutrophils
b) Dendritic cells
c) Basophils
d) Macrophages

Section 2 - Short Answer: All or nothing, no partial credit unless specified.

1. Describe Boyle's Law (2 pts)

At constant temperature, the pressure of a given quantity of gas is inversely proportional to its volume.

2. Define and write out the equation that calculates inspiratory capacity. Abbreviations are allowed. (2 pts)

IC = TV + IRV Inspiratory capacity = Tidal volume + inspiratory reserve volume

3. State and list the percentages of the forms of carbon dioxide when it's transported. (2 pts)

Carbonic Acid - 90% Carbamino compounds – 5% Dissolved gas – 5%

4. List the following from most specific to least specific: Bronchi, alveoli, bronchiole, bronchus (2 pts)

Alveoli, bronchiole, bronchi, bronchus

5. Explain why the C-rings of the trachea are incomplete. (2 pts)

The incompletely C-rings allow the trachea to collapse slightly to allow food to pass down the esophagus.

6. Describe the components of both red pulp and white pulp. (2 pts, 1 pt for each)

Red pulp - contains red blood cells, lymphocytes, and macrophages
White pulp - contains mostly lymphocytes

7. Name the 3 groups of nodules within the body. (1 pt for each correct group listed, 3 pts in total)

Tonsils, Adenoids, Peyer's patches

8. State the function of surfactant in the lungs. (2 pts)

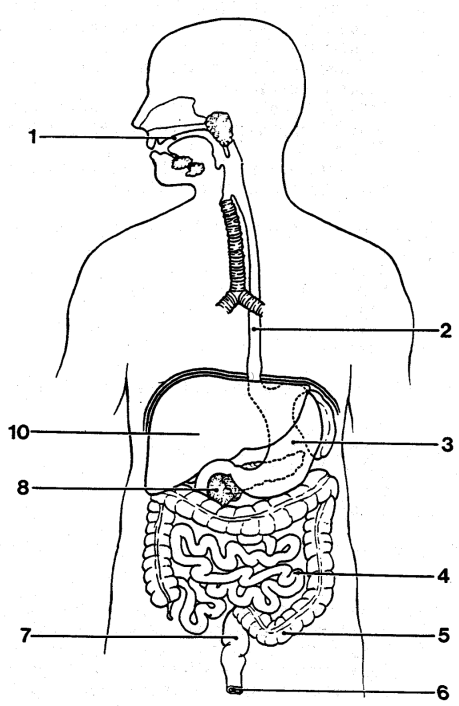
Lower the surface tension at the air/liquid interface within the alveoli of the lung

9. Explain what compliance measures in the lungs. (2 pts)

Measures how well the lung can expand and return to shape (elasticity).

10. State the function of cytotoxic cells in the immune system. (2 pts)

Cytotoxic cells find and destroy cells infected by viruses using antigens to tell the difference between healthy cells and infected cells.



11. State the name and function of 2. (1 pt for name, 1 pt for function)

Esophagus, peristalsis

12. State the name and function of 4. (1 pt for name, 1 pt for function)

Small intestine, most of enzymatic digestion and absorption of nutrients

13. State the name and function of 8. (1 pt for name, 1 pt for function)

Pancreas, converts food into fuel for the body, helps in digestion and regulates blood sugar

14. State the name and function of 1. (1 pt for name, 1 pt for function)

Mouth, chewing food into a ball and start of starch digestion

15. State the name and function of 10. (1 pt for name, 1 pt for function)

Liver, filters blood coming from the digestive tract, also detoxifies chemicals and metabolizes drugs. Bile from the liver digests fat in the small intestine

16. What are the 4 common signs of inflammation? (2 pts, .5 points for each correct sign)

Redness, heat, swelling, and pain

17. What are the five types of pathogens? (2.5 pts, .5 points for each correct type)

Viruses, bacteria, fungi, protozoa, and worms

18. Explain difference between passive and active immunity - give an example of each. (2 pts, 1 pt for each)

Active - Produced by contact with antigen, few side effects, immunity isn't immediate, lasts for a long time. Vaccine containing **antigens** or self-produced
Passive - Produced by antibodies from outside, side effects, immediate immunity, lasts for a short time. Antibodies from mother to child, vaccine containing **antibodies**

19. A person with type AB blood contains what antigens? (2 pts)

A person with type AB blood contains antigens for type A and type B blood

20. Name the hormone produced by the medulla of the thymus thought to help T-cells mature. (2 pts)

Thymosin

Section 3 - Matching Section: Each correct answer earns one point.

Match the antibody to the details of that antibody.

1. IgA c
2. IgD e
3. IgG a
4. IgE b
5. IgM d

a) Capable of crossing placenta to fetus, makes up about 75% of all human antibodies, has 4 forms

b) Binds to allergens and triggers histamine release from mast cells and basophils

c) Prevents colonization by pathogens **before** reaching bloodstream - most import antibody in local immunity

d) Expressed on the surface of B cells and in a secreted form with very high avidity

e) Antigen receptor on B cells that have not been exposed to antigens

Match the description to the disease/disorder. Not all descriptions may be used.

1. Systemic Lupus Erythematosus f

2. Grave's Disease p

3. Emphysema a

4. Contact Dermatitis h

5. Hepatitis j

6. Crohn's Disease e

7. Cystic Fibrosis l

8. Acute Rhinitis o

9. Pleurisy d

10. AIDS k

11. Tuberculosis q

12. Bronchitis c

13. Pneumonia n

14. Rheumatoid Arthritis s

15. Pulmonary Edema g

a) A long-term, progressive disease of the lungs that primarily causes shortness of breath due to over-inflation of the alveoli

b) Uncontrolled growth of abnormal cells that start off in one or both lungs; usually in the cells that line the air passages

c) An inflammation of the lining of your bronchial tubes

d) A condition in which a membrane consisting of a layer of tissue that lines the inner side of the chest cavity and a layer of tissue that surrounds the lungs becomes inflamed

e) A type of inflammatory bowel disease that may affect any part of the gastrointestinal tract from mouth to anus

f) An autoimmune disease in which the body's immune system mistakenly attacks healthy tissue in many parts of the body

g) A condition caused by excess fluid in the lungs, which collects in the numerous air sacs in the lungs, making it difficult to breathe

h) A red, itchy rash caused by direct contact with a substance or an allergic reaction to it

i) Abnormal enlargement of the butterfly-shaped gland below the Adam's apple

j) Inflammation of the liver

k) A disease in which there is a severe loss of the body's cellular immunity, greatly lowering the resistance to infection

l) A progressive, genetic disease that causes persistent lung infections and limits the ability to breathe over time because of a thick, sticky buildup of mucus in the lungs, pancreas, and other organs.

m) Chronic liver damage from a variety of causes leading to scarring and liver failure.

n) Lung inflammation caused by bacterial or viral infection, in which the air sacs fill with pus and may become solid.

o) Irritation and inflammation of the mucous membrane inside nose

p) A type of autoimmune problem that causes the thyroid gland to

produce too much thyroid hormone

q) An infectious bacterial disease characterized by the growth of nodules (tubercles) in the tissues, especially the lungs

r) Complete or partial collapse of a lung or a lobe of a lung

s) An autoimmune disease that causes chronic inflammation of the joints and other areas of the body

Section 4 - True/False: Each correct answer earns one point.

1. The hyoid bone is part of the larynx (T/F) F

2. Exterior of lobule (in the thymus) secretes thymosin thought to aid T cells to mature (T/F) F

3. The vestibular folds of the larynx have no function in speech. (T/F) T

4. Another word for swallowing is deglutition. (T/F) T

5. Mass contractions are mixing contractions that occur in the small intestine. (T/F) F

6. Teeth are distributed in two dental arches. One is called the maxillary arch and the other is called the mandibular arch. (T/F) T

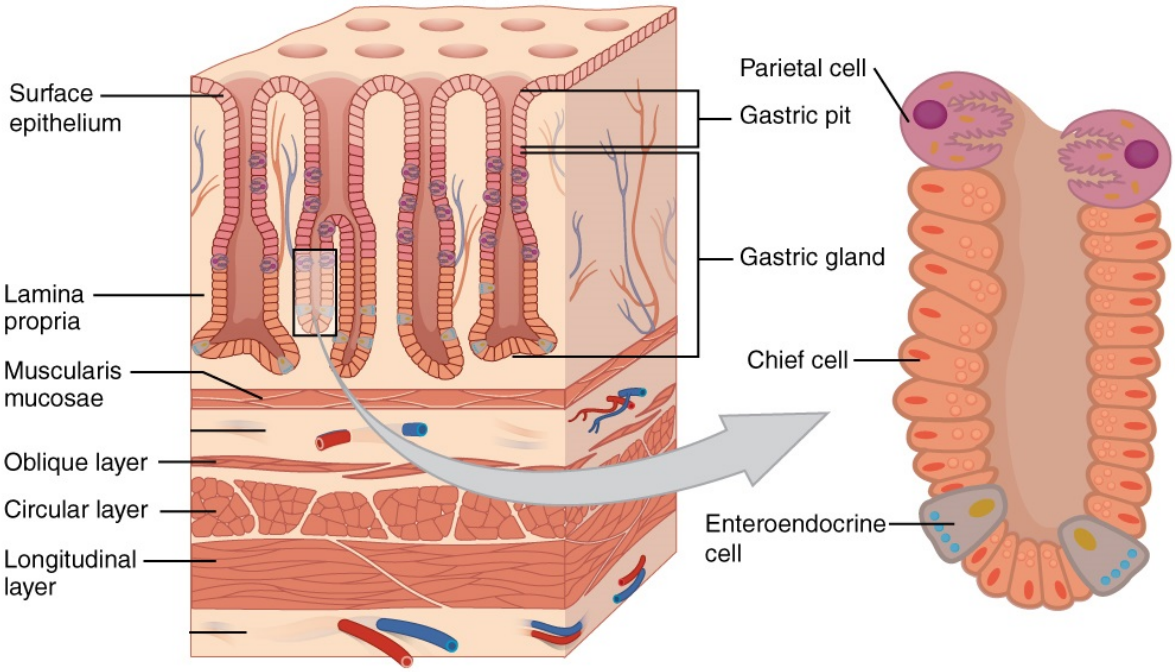
7. Type O blood is considered the universal recipient. (T/F) F

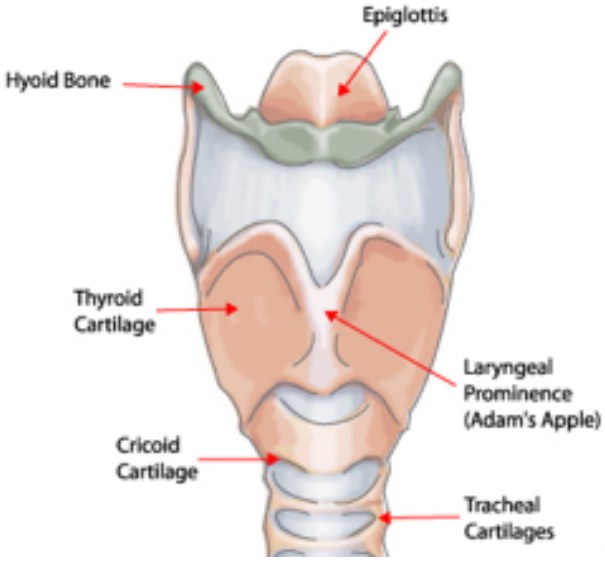
8. Monocytes circulate in the blood for 1-2 days before being called macrophages once they reach organs. (T/F) T

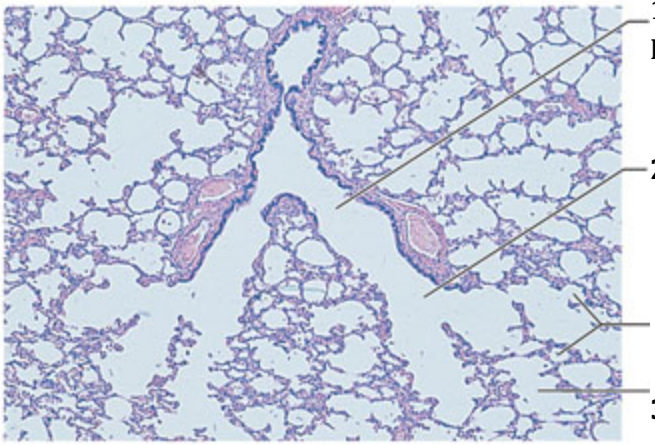
9. Natural flora in the intestine cause pathogens to grow. (T/F) F

10. SALT (skin-associated lymphatic tissue) is associated with the hypodermis of the skin. (T/F) F

Section 5 - Labelling: Each correct answer earns one point.







1. Respiratory Bronchiole

2. Alveolar Duct

3. Alveoli