UNIT 8- HUMAN BODY SYSTEMS

- Human reproductive systems
- Human embryonic and fetal development
- Circulatory system and blood vessels
- Nervous system and parts of the brain
- Human immune system
- Compare structure and function of different animals.

1. Immune System-Slides 1 through 6
2. Brain- Slides 7 and 8
3. Human Reproductive System-Slides -9-14
4. Assessment-Slides 15-21
NON SPECIFIC or INNATE IMMUNE SYSTEM

HUMAN IMMUNE SYSTEM

A. NON-SPECIFIC
   1st Line

B. SPECIFIC
   2nd Line
         Humoral
         Cell Mediated
   B    T
NON SPECIFIC or INNATE IMMUNE SYSTEM

HUMAN IMMUNE SYSTEM

NON-SPECIFIC

Ist Line  2nd Line

Ist Line of Defense
*SKIN
*NOSE
*EYES-TEARS (Lysosome enzyme)
*MUCUS & CILIA-NOSE + THROAT
*STOMACH ACID

2nd Line of Defense
INFLAMMATION w. Histamines
INTERFERONS-proteins that inhibit virus from reproducing
FEVER
HUMAN SPECIFIC IMMUNE RESPONSE

T cells are white blood cells called lymphocytes - made in bone marrow and stored in thymus gland.

2 Types of T cells

MACROPHAGE - white blood cells

B cells are white blood cells called lymphocytes - made in bone marrow and stored in thymus gland.

2 Types of B cells

HUMORAL IMMUNITY

CELL MEDIATED IMMUNITY
HUMAN SPECIFIC IMMUNE RESPONSE can also be displayed as shown below.
VOCAB WORDS

• INNATE IMMUNITY-
• ACQUIRED IMMUNITY
  PASSIVE –like mothers milk
  ACTIVE-vaccine

*INTERFERONS-protein that stops virus from growing
*ANTIGENS-produces a response in the immune sys.
ANTIBODY-attacks pathogen and kills it—B cells
PATHOGEN-any organisms→disease

READ RED BOOKS-pp1021 +1022 -Bold print.
PART of the NERVOUS SYSTEM

Parts of the brain

Know the location of

* the cerebrum *cerebellum,
* Pons *medulla oblongata *brain stem
* frontal lobe*parietal lobe
* occipital lobe
* temporal lobe
LABEL THE PARTS OF THE BRAIN

Parts of the brain: Know the location of
1. the cerebrum  2. cerebellum  3. brain stem  4. Pons  5. medulla oblongata
Actual size EOC-Referring to the male human reproductive system are limited to the seminal vesicle, prostate gland, vas deferens, urethra, epididymis, scrotum, penis, and testes.
EOC-Referring to the female human reproductive system are limited to the ovaries, oviduct (fallopian tube), uterus, cervix and vagina.
HORMONES

MALE

PITUITARY GLAND

FSH  LH

Testes

sperm producing cells

Testosterone producing cells

Regulate sperm production

Testosterone

FEMALE

Hypothalamus

LHRH

Pituitary

LH, FSH

Ovaries

Progesterone, Estrogen
Label the diagrams below.

Where does fertilization occur?

From where to where does ovulation occur?

Where is the embryo implanted?

Which organ produces testosterone and the sperm?

Referring to the male human reproductive system are limited to the seminal vesicle, prostate gland, vas deferens, urethra, epididymis, scrotum, penis, and testes.

Referring to the female human reproductive system are limited to the ovaries, oviduct (fallopian tube), uterus,
REPRODUCTION-HUMAN EMBRYONIC DEVELOPMENT

**Zygote**

Day 1: Fertilisation

Day 2: Cleavage

Day 3: Compaction

Day 4: Differentiation

Day 5: Cavitation

Day 6: Zona hatching

Day 7: Implantation

Day 9: Cell mass differentiation

Day 12: Bilemmal disc formation

Day 12: Mesoderm formation

Day 18: Mesoderm spreading

Day 23: Amniotic sac enlargement
Label each of the stages of development from fertilization to the embryo. Define each word/label used.
What factors affect blood flow?
Exercise
Diet,
Weight
Cholesterol level
Pressure,
Diabetes
Smoking
1. The illustration below shows four lobes of the human brain.
   - What lobe is designated by label 2?
     A. temporal
     B. parietal
     C. occipital
     D. frontal

2. Which lobe of the brain is designated by number 4?
   A. occipital lobe
   B. parietal lobe
   C. frontal lobe
   D. temporal lobe

3. Which of the following is not one of the four lobes of a primate's cerebral hemisphere?
   A. Optic
   B. occipital lobe
   C. parietal lobe
   D. frontal lobe
   E. temporal lobe

4. After an initial infection, B-cells recognize the measles virus. How is this helpful in human immune response?
   A. The B-cells use this recognition to defend the body against other pathogens, such as bacteria.
   B. The B-cells more quickly recognize and respond to any other virus that invades the body.
   C. The B-cells produce antibodies more quickly if the measles virus is encountered again.
   D. The B-cells transfer this recognition to T-cells, which will then devour the viruses
5. Which of the following statements best describes the relationships among possible environmental influences, the p53 gene, and cancer?

A. Environmental influences can lead to mutations in the p53 gene, which can cause certain cancers.
B. Increased levels of p53 protein, rather than environmental influences, can cause certain cancers.
C. Mutations in the p53 gene increase environmental influences that can cause certain cancers.
D. Genes such as p53 are less casual than environmental influences in stimulating certain cancers.

6. What is the body's first line of defense against infection by foreign organisms?
   A. Antibodies   B. lymph nodes   C. white blood cells   D. the skin

7. What is immunity?
   A. The body's ability to produce cells that inactivate foreign cells or substances.
   B. The body's ability to regulate homeostasis through feedback loops.
   C. The body's ability to produce the "fight or flight" response.
   D. The body's ability to use the endocrine system to fight disease.

8. How does a vaccine work?
   A. It prevents the disease-causing agent from entering the body.
   B. It attacks the disease-causing agent as soon as it enters the body.
   C. It triggers the immune system to produce antibodies to fight the disease-causing agent.
   D. It allows the blood to filter out the disease-causing agent.
9. White blood cells are an important part of the human immune response. Two types of white blood cells, neutrophils and macrophages, act as phagocytes. Phagocytes perform which of the following functions in the human body?

A. They produce antibodies.
B. They bind to antigens and develop into plasma cells.
C. They form a barrier against pathogens.
D. They engulf and destroy bacteria

10. Although vaccines cannot be used to treat a person who is sick, they can help to prevent infections. Vaccinations tell the body to create "memory cells", which will function later to create antibodies against certain pathogens. When a person is vaccinated, what are they injected with?

A. antibodies to a disease bacterium
B. live, inactive viruses
C. weakened viruses or antigens from the virus
D. blood from a person who has had the disease

11. An activity that occurs in the human body is shown below. This activity helps to do which of the following?

- A. provide protection against pathogens
- B. produce antibiotics to control disease
- C. eliminate harmful gene alterations
- D. regulate production of ATP by the cell
12. Which of the following describes a way that a person's health can be affected by heredity?
   A. A person with a family history of obesity is more likely to catch a common cold.
   B. A person with a family history of high blood pressure is more likely to have heart disease.
   C. A person with a family history of obesity is less likely to enroll in a weight loss plan.
   D. A person with a family history of cancer is less likely to be screened for cancer.

13. Many species of bacteria have become resistant to antibiotics because antibiotics have been so widely used. Now, bacteria that used to be killed by antibiotics are more difficult to treat. What is the best way to proceed in dealing with this public health problem?
   A. Antibiotics should no longer be used.
   B. Antibiotics should be made available to anyone without a prescription.
   C. Antibiotics should only be prescribed to people with bacterial infections.
   D. Anti-viral medications should now be used instead of antibiotics.

14. How do human diseases caused by bacteria and diseases caused by viruses react to antibiotics?
   • A. Neither responds to antibiotics.
   • B. Both respond to antibiotics.
   • C. Viral diseases respond to antibiotics; bacterial diseases do not.
   • D. Bacterial diseases respond to antibiotics; viral diseases do not.

15. The immune system has both specific and nonspecific defenses against viral infections. Which statement describes a nonspecific response of the immune system in fighting viral infections?
   • A. T cells are produced to search out and destroy the viruses.
   • B. Memory B cells are activated to rapidly respond to the viral infection.
   • C. Plasma cells quickly replicate and release antibodies that bind to the viruses.
   • D. Virus-infected cells produce interferons that lead to the inhibition of viral replication.
15. A fertilized egg undergoes several stages before it is successfully implanted. The diagram below shows these stages as the fertilized egg travels through the female reproductive system. In which of the following structures of the female human reproductive system is the blastocyst implanted during normal human development?

A. Ovary  B. uterus  C. vagina  D. amniotic sac

16. The drinking of alcoholic beverages by a pregnant woman is harmful to the development of her fetus. This is most damaging early in a pregnancy because during this time

A. the lungs of the fetus become functional.
B. alcohol can easily enter the mouth of the fetus.
C. many of the essential organs of the fetus are forming.
D. the fetus cannot excrete wastes

17. Sperm are created through meiosis in an area of the testes called the seminiferous tubules. Through which structure do the sperm travel to exit the testes?

A. vas deferens  B. seminiferous tubules  C. scrotum  D. epididymis

18. Which of the following is true of a zygote?

A. It forms into a blastocyst
B. It is an unfertilized egg
C. It produces haploid male gametophytes
D. It is made up of only one cell
19. Which of the following describes fertilization?

A. cell differentiation to form a blastula  
B. formation of germ layers in a deuterostome  
C. a sperm joining an egg to form a zygote  
D. sperm and egg production

20. Below is a diagram of the male reproductive system. Which structure is represented by the letter D?

A. Scrotum  
B. testes  
C. prostate gland  
D. epididymus

21. Abnormalities present in the cells that line the uterus may prevent the production of offspring by directly interfering with which process?

A. the development of the embryo  
B. the differentiation of gametes into zygotes  
C. the secretion of estrogen by the ovary  
D. the production and release of egg cells

22. What is the human embryo called after the eighth week of development?

A. a zygote  
B. an infant  
C. a fetus  
D. a morula
1. The rate at which blood flows through the human body changes in response to many factors. Which statement describes one of these factors and its effect on blood flow?

A. A high viscosity of blood causes an increased resistance in the blood vessels and leads to slow blood flow.
B. A low blood pH decreases the rate of diffusion through the blood vessels and leads to slow blood flow.
C. The changing of the shape of red blood cells to a crescent shape decreases resistance and lead to a faster blood flow.
D. The narrowing of blood vessels increases pressure and leads to a faster blood flow.

2. Which of the following factors would most directly affect blood flow through the circulatory system?

A. Blood pressure  B. blood sugar  C. respiratory rate  D. outside temperature

3. What causes blood pressure?

A. cholesterol in the blood  B. stress that exercise puts on heart muscle
C. contraction of the ventricles in the heart  D. removal of oxygen from the blood

4. Which of the following best describes the connection between cardiovascular disease and age?

A. As people age, their blood vessels become more elastic leading to less cardiovascular disease.
B. As people age, the heart becomes more efficient with each pump, increasing cardiac output.
C. As people age, blood pressure decreases leading to more cardiovascular disease.
D. As people age, plaque builds up in the arteries increasing vessel resistance, which leads to disease.