GRADE 12 BIOLOGY
PRACTICE QUESTIONS WEEK 5

Name:_____
Date: _____

A very *quick selection*, cut and paste from various assignments, past quizzes, etc.

This should take max 30 mins (?)

UNIT A GENETICS

1. Alternate forms of a gene that influence the same characteristic and are found at the same location in homologous chromosomes are called:

a. Alleles b. phenotypes
c. genotypes d. prototypes

2. Mendel carried on most of his research with

a. Livestock b. plants c. guinea pigs d. fruit flies

3. If the genotype is YySsTT then yST would represent

a. The genotype of the offspring b. the phenotype of the offspring
c. a gamete of the parent d. a possible zygote

4. Which of the following is represented by word descriptions such as tall/green

a. Phenotype only b. genotype c. both a and b d. neither a or b

5. In humans brown eyes are dominant over blue eyes. A brown eyed woman who has a blue eyed child has the genotype

a. bb b. Bb c. BB d. all of the above

6. In humans red hair is recessive to dark hair. What are the chances of a dark-haired couple having a red-haired child, if each had a red-haired parent.

a. 0 b. 1/4 c. ½ d. ¾

7. Which cross will result in all of the offspring being hybrids for both traits? (two answers)

a. RRYY x RRYY **b. RRYY x rryy**
c. RrYy x RrYy **d. rryy x rryy**

8. Which cross will result in **all** of the offspring being homozygous recessive for both traits?

a. RRYY x RRYY b. RRYY x rryy
c. RrYy x RrYy d. rryy x rryy

9. Which cross will result in all of the offspring being homozygous dominant for the traits?

a. RRYY x RRYY b. RRYY x rryy
c. RrYy x RrYy d. rryy x rryy

10. A left-handed woman marries a right-handed man who is heterozygous. If left handedness is recessive, how many different phenotypes are possible in their children.

a. One b. two c. three d. four

11. If the blood type of parents were A and O, all possible blood types for the children would be:

a. A, O b. A, B c. A, AB d. B, AB

13. If one parent has type B blood, and the other type AB, the child's blood type is

a. A or O b. B or O c. A or B d. A, B, AB

14. A man with blood type AB could not be the father of a child with the blood type

a. A b. B c. AB d. O

15. If a human being inherits two X chromosomes, this individual will be:

a. Female b. male c. colour-blind d. sterile

16. The exchange of DNA between chromosomes during meiosis is known as:

a. Chromatic aberration
b. Crossing over
c. Genetic inheritance
d. Sperm production

17. A family has seven sons. The chance that their eighth child will be a daughter is:

a. 1 in 7 b. 1 in 8 c. 1 in 2 d. 7 in 8

23. In a pedigree chart it is noted that both parents have the characteristic and all the children have it. Under these circumstances, the characteristic

a. Must be autosomal dominant
b. Must be autosomal recessive
c. Could be either autosomal dominant or recessive
d. Must be a sex-linked trait

24. If a woman is a carrier for the colour-blind allele and her husband is perfectly normal, what are the chances that a son will be colour-blind?

a. None, since the father is normal
b. 50% since the mother is only a carrier
c. 100% because the mother has the gene
d. 25% because the mother is a hybrid

27. A woman heterozygous for polydactyly (have more digits than normal) is married to a normal man. If polydactyly is dominant, what are the chances that their children will have six fingers or toes?

a. 25% b. 50% c. 75% d. 0%

28. Maria has wavy hair (incomplete dominance) and marries a man with wavy hair. What are the chances they will have a child with wavy hair?

a. 100% b. 75% c. 50% d. 25%

29. Traits associated with X-linked genes are generally transmitted from:

a. A grandfather via a normal mother to her son
b. A grandfather via a normal mother to her daughter
c. A grandfather via a normal father to his son
d. A grandfather via a normal father to his daughter

2. Define the following in your own words:

a. Carrier:

b. Phenotype:

Which of the following is evidence for Darwin's theory of common descent?

A. There are patterns in the fossil record that suggest other species have diverged from a single ancestor species.

B. There are biogeographic patterns in the distribution of species, for instance distinct bird species on an island tend to resemble one another, suggesting a common ancestor.

C. There are common stages in the early embryological development of organisms representing several distinct vertebrate groups.

D. Anatomical structures, such as forelimbs, in different groups appear to be modified versions of structures that might have been present in a common ancestor.

E. All of the above.

5. Which of the following is **not** a part of Darwin's theory of natural selection?

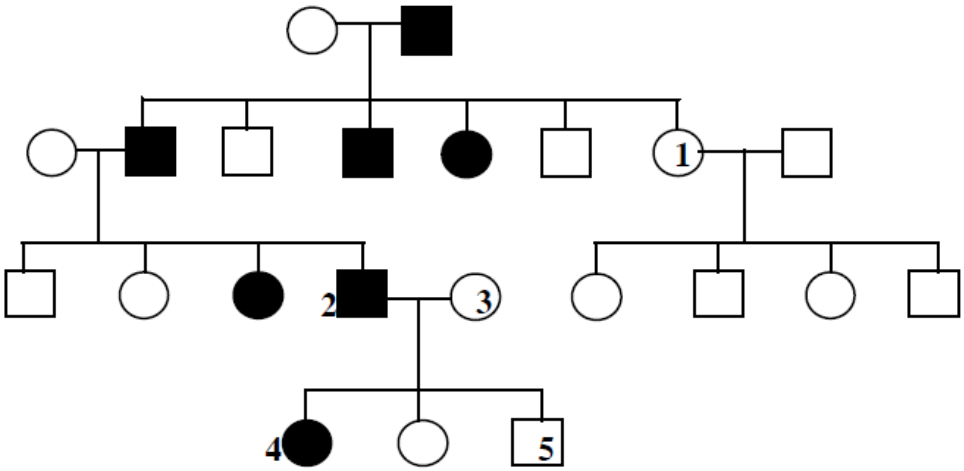
A. Individuals of a population vary

B. Organisms tend to over-reproduce themselves

C. There are limited resources for which individuals compete

D. Modifications an organism acquires during its lifetime can be passed to its offspring

E. Variations possessed by individuals of a population are heritable



a. For the pedigree above state the genotypes of individuals # 1- 5 in the following table using the letter ”A”. Use the uppercase letter to represent the dominant allele and lowercase letter to represent the recessive allele.

Individual	Genotype
1	
2	
3	
4	
5	