

**LSN Chapter 11 Multiple Choice Test****Multiple Choice**

*Identify the choice that best completes the statement or answers the question.*

- \_\_\_\_\_ 1. A characteristic that an organism can pass on to its offspring is called a:
- phenotype
  - trait
  - genotype
  - gene
- \_\_\_\_\_ 2. A(n) \_\_\_\_\_ is the form of a gene that is hidden when the dominant allele is present.
- allele
  - dominant allele
  - recessive allele
  - genotype
- \_\_\_\_\_ 3. If a recessive trait is expressed in an organism's phenotype, what can you determine about its genotype?
- Both alleles in the genotype are recessive.
  - At least one allele in the genotype is recessive.
  - You cannot determine anything about the organism's genotype.
  - Both alleles in the genotype are dominant.
- \_\_\_\_\_ 4. Genetics is the:
- study of pea plants.
  - study of heredity.
  - phenotype of an organism.
  - a characteristic that can be passed on.
- \_\_\_\_\_ 5. How do flowering plants reproduce?
- Ovulation
  - Pollination
  - Cross-breeding
  - Breeding
- \_\_\_\_\_ 6. An organisms genotype describes:
- the form of a trait it displays.
  - its physical characteristics.
  - the way it looks.
  - the alleles of the gene it contains.
- \_\_\_\_\_ 7. A \_\_\_\_\_ is a unit that determines traits.
- chromosome
  - gene
  - allele
  - DNA
- \_\_\_\_\_ 8. For each trait, pea plants contain two forms of the same gene. These different forms of the same gene are called:
- alleles
  - genotypes
  - chromosomes
  - All of the above

- \_\_\_\_\_ 9. During his experiments, Mendel found that:
- all traits do not blend
  - in the first generation all of the offspring showed the dominant trait.
  - in the second generation the ratio of purple flowers to white flowers was 3:1.
  - All of the above
- \_\_\_\_\_ 10. Mendel studied \_\_\_\_\_ traits in pea plants.
- flower color
  - pod color
  - seed shape and color
  - All of the above
- \_\_\_\_\_ 11. If a green seed (yy) is crossed with another green seed (yy) what can you predict about the offspring?
- the phenotype will be green
  - the genotype will be yy
  - the recessive trait will show
  - All of the above
- \_\_\_\_\_ 12. If a **true-breeding** purple plant is crossed with a **true-breeding** white flowered plant, the possible phenotypes of the first generation of peas are:
- all white.
  - all purple.
  - 50% purple and 50% white.
  - 75% purple and 25% white.
- \_\_\_\_\_ 13. When Mendel's first generation pea plants were allowed to self-pollinate, the ratio of purple to white flowers in the second generation was:
- 1:3
  - 1:1
  - 3:1
  - 4:1
- \_\_\_\_\_ 14. What is a true-breeding plant?
- A plant that never produces offspring with the same form of a trait when it self-pollinates.
  - A plant that has been pollinated by human influence.
  - A plant that will always produce offspring with the same form of a trait when it self-pollinates.
  - A plant that will always produce offspring with a different form of a trait when it self-pollinates.
- \_\_\_\_\_ 15. The ratio of 25:5 is the same as the ratio:
- 1:5
  - 3:1
  - 5:1
  - 4:1
- \_\_\_\_\_ 16. A \_\_\_\_\_ is the form of a gene that, when present, covers up the appearance of the \_\_\_\_\_.
- recessive allele, dominant allele
  - dominant gene, recessive gene
  - dominant allele, recessive allele
  - recessive gene, dominant gene

- \_\_\_\_\_ 17. If a pea plant contains a recessive allele for wrinkled seeds and a dominant allele for smooth seeds, the organism's phenotype must be:
- smooth seeds.
  - wrinkled seeds.
  - half of the seeds are smooth and half are wrinkled.
  - not really smooth or wrinkled seeds, a mixture of both traits.
- \_\_\_\_\_ 18. You find a pea plant with purple flowers. From this you know that its:
- genotype must be PP.
  - phenotype can either be Pp or PP.
  - genotype must be Pp.
  - phenotype is purple.
- \_\_\_\_\_ 19. In order to show all of the possible combinations of alleles from parents, we use:
- punnett squares.
  - phenotypes.
  - genotypes.
  - None of the above
- \_\_\_\_\_ 20. Walter Sutton:
- is a famous scientist who strongly disagreed with Mendel's findings.
  - came up with ideas about genetics before Mendel, but never spoke of his findings.
  - discovered chromosomes, which contain genes, in grasshoppers.
  - disproved Mendel's theories about heredity, by showing there is no way to predict traits in offspring.
- \_\_\_\_\_ 21. The works of Gregor Mendel and Walter Sutton:
- are combined in the laws of heredity.
  - contradict each other.
  - occurred at the same time.
  - dealt with the same organisms.
- \_\_\_\_\_ 22. When fertilization occurs, offspring inherit:
- one homologous chromosome in a pair from each parent.
  - a complete set of chromosomes from one of the parents.
  - two homologous chromosomes in pairs from each parent.
  - a random amount of chromosomes from each parent.
- \_\_\_\_\_ 23. \_\_\_\_\_ is the mathematical chance that an event will occur.
- Punnett square
  - Probability
  - Prediction
  - Crossing over
- \_\_\_\_\_ 24. A punnett square is helpful in predicting:
- only genotypes of offspring.
  - only phenotypes of offspring.
  - both the genotypes and the phenotypes of the offspring.
  - None of the above
- \_\_\_\_\_ 25. A gene:
- is a segment of DNA located on chromosomes.
  - determines an organism's traits.
  - typically contains one allele from each parent.
  - All of the above

\_\_\_\_ 26.

	<b>R</b>	<b>R</b>
<b>R</b>		
<b>r</b>		

In the above cross, a round seed pea plant (RR) is crossed with a round seed pea plant (Rr). What are the possible genotypes for seed shape in the cross?

- RR, RR, RR, RR
  - Rr, Rr, Rr, Rr
  - RR, RR, RR, Rr
  - RR, RR, Rr, Rr
- \_\_\_\_ 27. What happens to alleles during meiosis?
- Alleles separate
  - Alleles combine
  - Alleles are created
  - Nothing happens
- \_\_\_\_ 28. If a human with free earlobes (FF), and a human with attached earlobes (ff) mate. What are the possible phenotypes of the offspring?
- The offspring will either have attached earlobes or free earlobe.
  - The offspring will have attached earlobes.
  - The offspring will have free earlobes.
  - None of the above
- \_\_\_\_ 29. A purple flower with genotype PP is crossed with another purple flower with genotype Pp. What is the offspring's phenotype?
- white or purple
  - purple
  - white
  - Pp, PP, PP, PP
- \_\_\_\_ 30. Yellow seeds are determined by the dominant allele (Y), while green seeds are determined by the recessive allele (y). A cross-pollination occurs between a yellow seeded plant and a green seeded plant. The offspring had yellow seeds. What is the possible genotype of the offspring:
- YY
  - Yy
  - yy
  - Need more information to determine the genotype
- \_\_\_\_ 31. Sex cells carry \_\_\_\_ alleles for a given gene.
- 1
  - 2
  - 4
  - 8

- \_\_\_\_\_ 32. Which parent's genes determines the sex of a baby human?
- Mother
  - Father
  - Both mother and father
  - Neither mother or father
- \_\_\_\_\_ 33. An example of incomplete dominance is:
- tabby cats.
  - ABO blood types in humans.
  - pink flowers from white snapdragons crossed with red snapdragons.
  - parakeet feather colors.
- \_\_\_\_\_ 34. Skin color in humans is determined by several different genes. This is an example of what pattern of inheritance?
- Polygenic inheritance
  - Codominance
  - Incomplete dominance
  - Multiple alleles
- \_\_\_\_\_ 35. The X and Y chromosomes in humans are called:
- multiple alleles.
  - polygenic traits.
  - sex chromosomes.
  - codominance.
- \_\_\_\_\_ 36. Which pair of chromosomes would produce a male offspring?
- XX
  - XY
  - XO
  - AB
- \_\_\_\_\_ 37. Your fully grown height is determined by:
- your health.
  - your parents' height.
  - your nutrition.
  - All of the above

## LSN Chapter 11 Multiple Choice Test Answer Section

### MULTIPLE CHOICE

1.	ANS: B	DIF: basic	REF: section 11.1	STA: S7L3a
2.	ANS: C	DIF: basic	REF: section 11.1	STA: S7L3a
3.	ANS: A	DIF: basic	REF: section 11.1	STA: S7L3a
4.	ANS: B	DIF: basic	REF: section 11.1	STA: S7L3a
5.	ANS: B	DIF: basic	REF: section 11.1	STA: S7L3b
6.	ANS: D	DIF: basic	REF: section 11.1	STA: S7L3a
7.	ANS: B	DIF: basic	REF: section 11.1	STA: S7L3a
8.	ANS: A	DIF: basic	REF: section 11.1	STA: S7L3a
9.	ANS: D	DIF: basic	REF: section 11.1	STA: S7L3a   S7L3c
10.	ANS: D	DIF: basic	REF: section 11.1	STA: S7L3c
11.	ANS: D	DIF: intermediate	REF: section 11.1	STA: S7L3a   S7L3c
12.	ANS: C	DIF: intermediate	REF: section 11.1	STA: S7L3a   S7L3c
13.	ANS: C	DIF: intermediate	REF: section 11.1	STA: S7L3c
14.	ANS: C	DIF: intermediate	REF: section 11.1	STA: S7L3c
15.	ANS: C	DIF: intermediate	REF: section 11.1	STA: S7CS2a
16.	ANS: C	DIF: intermediate	REF: section 11.1	STA: S7L3a   S7L3c
17.	ANS: A	DIF: advanced	REF: section 11.1	STA: S7L3a   S7L3b
18.	ANS: D	DIF: advanced	REF: section 11.1	STA: S7L3c
19.	ANS: A	DIF: basic	REF: section 11.2	STA: S7L3a   S7L3c
20.	ANS: C	DIF: basic	REF: section 11.2	STA: S7L3a
21.	ANS: A	DIF: basic	REF: section 11.2	STA: S7L3c
22.	ANS: A	DIF: basic	REF: section 11.2	STA: S7L3b
23.	ANS: B	DIF: basic	REF: section 11.2	STA: S7CS3a
24.	ANS: C	DIF: intermediate	REF: section 11.2	STA: S7L3a   S7L3c
25.	ANS: D	DIF: intermediate	REF: section 11.2	STA: S7L3a
26.	ANS: D	DIF: advanced	REF: section 11.2	STA: S7L3c
27.	ANS: A	DIF: advanced	REF: section 11.2	STA: S7L3b
28.	ANS: C	DIF: advanced	REF: section 11.2	STA: S7L3c
29.	ANS: B	DIF: advanced	REF: section 11.2	STA: S7L3c
30.	ANS: B	DIF: advanced	REF: section 11.2	STA: S7L3c
31.	ANS: A	DIF: advanced	REF: section 11.2	STA: S7L3a   S7L3b
32.	ANS: B	DIF: basic	REF: section 11.3	STA: S7L3c
33.	ANS: C	DIF: intermediate	REF: section 11.3	STA: S7L3c
34.	ANS: A	DIF: intermediate	REF: section 11.3	STA: S7L3c
35.	ANS: C	DIF: intermediate	REF: section 11.3	STA: S7L3c
36.	ANS: B	DIF: intermediate	REF: section 11.3	STA: S7L3c
37.	ANS: D	DIF: advanced	REF: section 11.3	STA: S7L3c