Fill in the blanks

1) The term genetics was coined by _____
2) The hereditary units which are transmitted from one generation to the next generation are called as _____
3) Lethal factor produce its effect only in _____condition.
4) The ratio of individuals in F_2 generation on the basis of their external appearance is called as ____
5) Mendel performed hybridization experiments on _____
6) The genetic makeup of an individual is known as _____
7) The characters which appears in F_1 generation is called _____characters.
8) The factor or gene which is not able to express itself phenotypically in F_1 generation are referred as _____ gene.
9) A cross between two parents that differs in only one locus is called as _____
10) A cross in which the F_1 hybrid individual is crossed with one of its parents is called _____
11) The deliberate mating of two parental types of organisms in genetic analysis is called as _____
12) The coordinated effect of two or more genes in producing a given phenotypic trait is known as ____
13) The genetic makeup of an individual, with reference to the trait under consideration is referred as __
14) The ratio of progeny phenotypes reflecting the operation of Mendel's law is called _____
15) _____ is a checkerboard grid designed to determine all possible genotypes produced by a given cross.
16) A strain of individual homozygous for all genes being considered is called _____
17) A parental phenotype that is not expressed in a heterozygote is called as _____
18) _____ is the differences among parents and their offspring or among individuals in a population.

Multiple Choice Question

1. Laws of inheritance were given by _____
   a) Miller b)Morgan
   c) Mendel d) Griffith

2. In heredity,the genes are obtained from _____

a) Father
b) Both
c) Mother
d) None of the above

3. The modern concept of gene is _____

a) A segment of chromosome
b) A functional unit of DNA
c) A segment of DNA
d) Entire chromosome

4. Phenotypic ratio of 3:1 is obtained in _____

a) Backcross
b) Incomplete dominance
c) Dihybrid cross
d) Monohybrid cross

5. The ratio 9:7 is due to _____

a) Lethal genes
b) Supplementary genes
c) Complementary genes
d) Epistatic genes

6. The various forms of a given genes are called as _____

a) Alleles
b) Phenotype
c) Genotype
d) Gamete

7. Recessive gene can be expressed in _____ condition.

a) Heterozygous
b) Homozygous
c) Both
d) None of the above

8. Numbers of characters studied in garden pea by Mendel are _____

a) Three
b) Five
c) Seven
d) Six

9. An individual with a pair of identical factor (allele) is _____

a) Hybrid
b) Homozygous

c) Heterozygous
d) None of the above

10. Results of Mendel's cross are represented by a 'checker board method'. This method was given by _____

a) Bateson
b) Mendel
c) Punnett
d) Sutton

11. The gene which affects the viability of an individual is known as _____

a) Supplementary genes
b) Lethal genes
c) Complementary genes
d) Recessive genes

12. Independent assortment of Mendel was proved by _____

a) Backcross
b) Monohybrid cross
c) Incomplete dominance
d) Dihybrid cross

13. A cross between two pairs of alleles is called _____

a) Linkage
b) Dihybrid cross
c) Crossing over
d) Monohybrid cross

14. Law of independent assortment can be proved by a cross _____

a) YyRr x YyRr
b) YYRR x yyrr
c) YyRr x YYRR
d) YyRr x yyrr

15. 9:3:3:1 dihybrid ratio is modified in complementary genes as _____

a) 15:1
b) 9:7
c) 13:1
d) 12:3:1

16. Duplicate factor modifies normal mendelian ratio into _____

a) 13:3
b) 9:7
c) 9:3:4
d) 15:1

Answer in one sentence:

1) Who is considered as the father of genetics?
2) What is dihybrid cross?
3) Define monohybrid cross?
4) What phenotypic ratio is found in F2 generation in a cross between two varieties having duplicate genes for a single trait?
5) What is dominant gene?
6) What is the typical genotype ratio in Mendel's dihybrid cross?
7) Define allele.
8) What is the fundamental unit of heredity?
9) What is heredity?
10) Why law of segregation is also known as law of purity of gametes?
11) What is epistasis?

Short answer type question:

1) Complementary factor
2) Supplementary factor
3) Duplicate factor
4) Lethal factor
5) Inhibitory factor
6) Monohybrid cross
7) Dihybrid cross
8) Law of dominance
9) Law of segregation
10) Law of independent assortment

Long answer type question:

1) Explain Mendel's Law of Independent Assortment with suitable example
2) Explain Mendel's Law of Dominance and Law of Segregation
3) Explain dihybrid cross with suitable example
4) What is mean by Interaction of Gene? Describe complementary factor.
5) Explain Complementary and Duplicate factor.
6) Explain Supplementary Factor and Inhibitory Factor.
7) What is mean by Interaction of Gene? Describe Lethal factor.

Answer Key:

1) **Fill in the blanks-**

1) William Bateson
2) Genes
3) Homozygous
4) Phenotypic ratio
5) *Pisum sativum* (pea)
6) Genotype
7) Dominant
8) Recessive
9) Monohybrid cross
10) backcross
11) cross
12) gene interaction
13) genotype
14) mendelian ratio
15) Punnett square
16) Pure line or pure breeding line
17) Recessive phenotype
18) Variation

2) **Multiple choice questions:**

1) c	5) c	9) b	13) b
2) c	6) a	10) c	14) a
3) b	7) b	11) b	15) b
4) d	8) c	12) d	16) d