



BIOLOGY

BOOKS - TRUEMAN'S BIOLOGY

(ENGLISH)

NCERT Exemplar Questions +2

(PRINCIPLE OF INHERITANCE AND VARIATION)

Mcqs

1. All genes located on the same chromosome:-

A. form different groups depending upon their relative distance

B. form one linkage group

C. will not form any linkage groups

D. form interactive groups that affect the phenotype

Answer: b



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2. Conditions of a karyotype

$2n \pm 1$ and $2n \pm 2$ are called

- A. aneuploidy
- B. polyploidy
- C. allopolyploidy
- D. monosomy

Answer: a



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3. Distance between the genes and percentage of recombination shows

- A. a direct relationship
- B. an inverse relationship
- C. a parallel relationship
- D. no relationship

Answer: b



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4. If a genetic disease is transferred from a phenotypically normal but carrier female to only some of the male progeny, the disease is

A. autosomal dominant

B. autosomal recessive

C. sex-linked dominant

D. sex-linked recessive

Answer: d



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5. In sickle cell anaemia glutamic acid is replaced by valine Which one of the following triplets codes for valine ?

A. G G G

B. A A G

C. G A A

D. G U G

Answer: d



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6. Person having genotype $I^A I^B$ would show the blood group as AB. Thus is because of

- A. 1.pleiotropy
- B. 2.co-dominance
- C. 3.segregation
- D. 4. incomplete dominance

Answer: b



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7. ZZ/ZW type of sex determination is seen in

A. Platypus

B. Snails

C. Cockroach

D. Peacock

Answer: d



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8. A cross between two tall plants resulted in offspring having few dwarf plants. What would be the genotypes of both the plants ?

A. TT and Tt

B. Tt and Tt

C. TT and TT

D. Tt and tt

Answer: b



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9. In a dihybrid crossm if you get 9:3:3:1 ratio it denotes that

- A. the alleles of two genes are interacting with each other
- B. it is a multigenic inheritance
- C. it is a case of multiple allelism
- D. the alleles of two genes are segregating independently

Answer: d



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10. Which of the following will not result in variations among siblings ?

- A. Independent assortment of genes
- B. Crossing over
- C. Linkage
- D. Mutation

Answer: c



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11. Mendel's law of independent assortment holds good for genes situated on the

- A. non-homologous chromosomes
- B. homologous chromosomes
- C. extra nuclear genetic element
- D. same chromosome

Answer: a



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12. Occasionally, a single gene may express more than one effect. The phenomenon is called

A. multiple allelism

B. mosaicism

C. pleiotropy

D. polygeny

Answer: c



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13. In a certain taxon of insects some have 17 chromosomes and the others have 18 chromosomes. The 17 and 18 chromosome-bearing organisms are

- A. males and females, respectively
- B. females and males, respectively
- C. all males
- D. all females

Answer: a



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14. The inheritance pattern of a gene over generations among human is studied by the pedigree analysis. Character studied in the pedigree analysis is equivalent to

A. quantitative trait

B. Mendelian trait

C. polygenic trait

D. maternal trait

Answer: b



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15. It is said that Mendel proposed that the factor controlling any character is discrete and independent. His proposition was based on the

A. results of F_3 generation of a cross

B. observations that the offspring of a cross made between the plants having

two contrasting characters shows only one character without any blending

C. self pollination of F_1 offsprings

D. cross pollination of parental generations

Answer: b



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16. Two genes 'A' and 'B' are linked. In a dihybrid cross involving these two genes, the F_1 heterozygote is crossed with homozygous

recessive parental type (aa bb). What would be the ratio of offspring in the next generation?

A. 1 : 1 : 1 : 1

B. 9 : 3 : 3 : 1

C. 0.1256944444444444

D. 1 : 1

Answer: a



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17. In the F_2 generation a Mendelian dihybrid cross the number of phenotypes and genotypes are

A. phenotypes - 4, genotypes - 16

B. phenotypes - 9, genotypes - 4

C. phenotypes - 4, genotypes - 8

D. phenotypes - 4, genotypes - 9

Answer: d



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18. Mother and father of a person with 'O' blood group have 'A' and 'B' blood group respectively. What would be the genotype of both mother and father ?

A. Mother is homozygous for 'A' blood group and father is heterozygous for 'B'

B. Mother is heterozygous for 'A' blood group and father is homozygous for 'B'

C. Both mother and father are heterozygous for 'A' and 'B' blood group,

respectively

D. Both mother and father are homozygous
for 'A' and 'B' blood group, respectively

Answer: c



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