BIOLOGY

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HEREDITY

Textbook Evaluation Choose The Correct Answer

1. According to Mendal ,alletes have the following character

A. Pair of genes

B. Responsible for character

C. Production of gametes

D. Recessive factors

Answer: B

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2. 9:3:3:1 ratio is due to_____

A. Segregation

B. Crossing over

C. Independent assortment

D. Recessiveness

Answer: C

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3. The region of the chromosome where the spindle fibre get attached during cell division.

A. Chromomere

B. Centrosome

C. Centromere

D. Chromonema

Answer: C

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4. The centromere is found at the centre of the _____ chromosome.

A. Telocentric

B. Metacentric

C. Sub-metacentric

D. Acrocentric

Answer: B

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5. The_____units form the backbone of the DNA.

A. 5 carbon sugar

B. Phosphate

C. Nitrogenous bases

D. Sugar phosphate

Answer: D

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6. Okazaki fragements are joined together by _____.

A. Helicase

B. DNA polymerase

C. RNA primer

D. DNA ligase

Answer: D

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7. The number of chromosomes found in human beings are_____

A. 22 pairs of autosomes and 1 pair of allosomes

B. 22 autosomes and 1 allosome

C. 46 autosomes

D. 46 pairs autosomes and 1 pair of allosomes.

Answer: A

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8. The loss of one more chromosome in a ploidy is called_____.

A. Tetraploidy

B. Aneuploidy

C. Euploidy

D. polyploidy

Answer: B

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Textbook Evaluation Ii Fill In Blancks

1. The pairs of contrasting character (traits) of Mendal are called_____

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2. Physical expression of a gene is called _____

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3. The thin thread like structures found in the nucleus of each cell are called _____

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4. DNA consists of two_____chains

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5. An inheritable change in the amount or the structure of a chromosome is called

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Textbook Evaluation Iii Identify Whether The Statement Are True Or False Correct The False Statement

1. A typical Mendelian dihybrid ratio of F_2 generation is 3:1

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2. A recessive factor is altered by the presence of a dominant factor.

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3. Each gamete has only one allele of a gene.

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4. Hybrid is an offspring from a cross between genetically different parent.

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5. Some of the chromosomes have an elongated knob-like appendage known as telomere.

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6. New nucleotides are added and new complimentary strand of DNA is formed with the help of enzyme DNA polymerase.

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7. Down's syndrome is the genetic condition with 45 chromosomes.

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Textbook Evaluation Match The Following

1. Match the following columns

	Hormones		Disorders
A	Autosomes	*(i)*	Trisomy 21
B	Diploid condition	*(ii)*	9:3:3:1
C	Allosome	*(iii)*	22 pair of chromosome
D	Down's syndrome	*(iv)*	$2n$
E	Dihybrid ratio	*(v)*	23^{rd} pair of chromosome

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Textbook Evaluation Iv Answer In A Sentence

1. What is a cross in which inheritance of two pairs of contrasting characters are studied?

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2. Name the conditions when both the alleles are identical.

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3. A garden pea plant produced axial white flowers. Another of the same species produced terminal violet flowers. Identify the dominant traits.

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4. What is the name given to the segments of DNA, which are responsible for the inheritance of a particular character?

5. Name the bond which binds the nucleotides in a DNA

Textbook Evaluation Short Answer Questions

1. Why did Mendel select pea plant for this experiments?

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2. What do you understand by the term phenotype and genotype?

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3. What are allosomes?

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4. What are Okazaki fragments?

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5. Why is euploidy considered to be advantageous to both plants and animals?

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6. A pure tall plant (TT)is crossed with pure dwarf plant (tt),What would be the F_1 and F_2 generations?Explain.

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7. Describe the structure of chromosome.

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8. Label the parts of the DNA in the diagram given below. Explain the structure briefly.

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Textbook Evaluation Long Question And Answer

1. Explain with an example the inheritance of dihybrid cross.How is it different from monohybrid cross?

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2. How is the structure of DNA organized? What is the biological significance of DNA?

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3. The sex of the new born child is a matter of chance and neither of the parents may be considered responsible for it.What would be the possible fusion of gametes to determine the sex of the child?

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Textbook Evaluation Higher Order Thinking Skills Hots

1. Flowers of the garden pea are bisexual and self-pollinated .Therefore ,it iks difficult to perform hybridization experiment by crossing a particular pistil with the specific pollen grains.How Mendek made it possible in his monohybrid and dihybrid crosses?

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2. Pure-bred tall pea plants are first crossed with pure-bred dwarf pea plants. The pea plants obtained in F_1 generation are then cross-bred to produce F_2 generation of pea plants.

(a) What do the plants of F_1 generation look like?

(b) What is the ratio of tall plants to dwarf plants in F_2 generation?

(c) Which type pf plants were missing in F_1 generation but reappeared in F_2 generation?

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3. Kavitha gave birth to a female baby.Her family members say that she can give birth to only female babies because of her family history .Is the statement given by her family members true.Justify your answer .

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Textbook Evaluation Value Based Question

1. Under which conditions does the law of independent assortment hold good and why?

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Other Important Questions Answer Choose The Correct Answer

1. Exchange of genetic material take place in:

A. vegetative reproduction

B. asexual reproduction

C. sexual reproduction .

D. budding

Answer: C

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2. A cross between a tall plant (TT) and short pea plant (tt) resulted in progeny that were all tall plants because:

A. Tallness is the dominant trait

B. Shortness in the dominant trait

C. Tallness in the recessive trait

D. Height of pea plant is not governed by gene 'T' or 't

Answer: A

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3. If a round green seeded pea plant (RRYY) is crossed with wrinkled, yellow seeded pea

plant,(rrYY) the seeds produced in F, generation are:

A. round and yellow

B. round and green

C. wrinkled and green

D. wrinkled and yellow

Answer: A

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4. In human males all the chromosomes are paired perfectly except one. The unpaired chromosomes are:

A. large chromosome

B. small chromosome

C. Y- chromosome

D. X-chromosome

Answer: C

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5. A zygote which has an X-chromosome inherited from the father will develop into a:

A. boy

B. girl

C. X-chromosome does not determine the sex of a child

D. either boy or girl

Answer: B

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6. in pea, a pure tall plant (TT) is crossed to a short plant (tt). The ratio of pure tall plants to short plants in F_2, is:

A. $1:3$

B. $3:1$

C. $1:1$

D. $2:1$

Answer: B

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7. The number of pairs of sex chromosomes in the zygote of human is:

A. one

B. two

C. three

D. four

Answer: A

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8. Pure breeding varieties are otherwise called as:

A. dominant

B. recessive

C. wild type

D. mixed type

Answer: C

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9. The genotype of a character is influenced by factors called:

A. chromosome

B. nucleus

C. cytoplasm

D. genes

Answer: D

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10. Monosomy is represented by:

A. 2n +1

B. 2n - 1

C. 2n + 2 .

D. 2n - 2

Answer: B

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11. The term chromosome was introduced by

A. Bridges

B. Waldeyer

C. Balboni

D. Flemming

Answer: B

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12. _____ is the diagrammatic representation of Karyotype of a species.

A. Idiogram

B. Albinism

C. Karyo tyning

D. Heredity

Answer: A

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Other Important Questions Answer Fill In The Blanks

1. Genotypic ration of monohybrid cross

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2. The graphical representation to calculate the probability of all possible genotypes of offspring in a genetic cross is called

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3. The gene is present at a specific position on the chromosome called .....

4. The end of a chromosome is called_____

5. The chromosomes with satellites are called as .....

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6. ____ scts as aging clock in every cell.

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7. Nitrogen base + sugar = ...

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8. The two strands of DNA open and separate at the point forming .....

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9. Nullisomy is represented by .....

Watch Video Solution

10. The gametes produced by the organisms contain a single set of chromosomes is .....

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Other Important Questions Answer Match The Following

1. Match the following columns

	Hormones		Disorders
A	Plant height	*(i)*	Terminal
B	Position of flower	*(ii)*	Yellow
C	Colour of pod	*(iii)*	Wrinkled
D	Seed shape	*(iv)*	Constructed
E	Pod shape	*(v)*	Dwarf

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Other Important Questions Answer Iv State Whether True Or False If False Write The Correct Statement

1. The daughter strand synthesized in DNA is called logging strand.

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2. The centromere is found near the centre of the chromosome in sub metacentric.

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3. Primary construction in chromosome is called as nucleolar organizer.

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4. Briefly mention the contribution of T.H. Morgan in genetics

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5. Adenine always links with Guanine with three hydrogen bonds and cytosine always links with thymine with two hydrogen bonds.

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Other Important Questions Answer V Answer In A Ward Or Sentence

1. Heredity

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2. Name the plant on which Mendel performed his experiment.

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3. Define variation.

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4. Watson and Crick proposed their double helical DNA model based on the X-ray

diffraction analysis of .....

5. Write the expanded form of DNA.

6. Chemical composition of chromosome is

7. _____ are two types of nitrogenous bases in DNA.

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8. DNA molecule is also called as polynucleotide.

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9. _____between the nitrogenous bases makes the DNA molecules stable.

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10. Write the composition of nucleotides.

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11. What are autosomes?

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12. How is sex determined in human beings?

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13. Define Genetics.

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14. Define mutation.

Watch Video Solution

15. Explain the types of chromosome, based on position of centromere.

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Other Important Questions Answer Short Question And Answer

1. State and explain the law of purity of gametes.

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2. What is the mechanism behind the expression of a particular trait?Explain

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3. A pure tall plant (TT)is crossed with pure dwarf plant (tt),What would be the F_1 and F_2 generations?Explain.

Watch Video Solution

4. Give reason for the appearance of new combination of characters in F_2, progene.

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Other Important Questions Answer Long Question And Answer

1. How are mutations classified?

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2. Given an account of the Laws of Mendel.

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3. Write a note on down's syndrome.

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Other Important Questions Answer Higher Order Thinking Skills Hots

1. In plant gene ‘A’ is responsible for tallness and its recessibe allele 'a’ for ariness and 'B' is responsible for red colour to recessive allele 'b' for hite flower colour. A tall and red flowered plant with genotype Aabb crossed with dwarf and red flowers (aaBb). What is the percentage of dwarf white flowered off spring of above cross?

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2. In a population of 1000 individuals 360 belong to genotype AA, 480 to Aa the and the remaining 160 to aa. Based on this date, the fre quency of allele a in the population is

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3. A tall true breeding garden pea plant is crossed with a dwarf true breeding garden pea plant. When the F_1 plants were selfed the resulting genotypes were in the ratio of:

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