



# BIOLOGY

## BOOKS - BAL BHARTI

### HEREDITY AND VARIATION

#### Think About It

1. Do all boys and girls of your class look alike?



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## Can You Tell

1. How do specific traits or characteristics appear in organisms?



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## Use Your Brain Power

1. Show the monohybrid cross between (RR) and (rr) and write the phenotypic and genotypic ratio of  $F_2$  generation.



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2. Why did the characteristic of the Rounded-Yellow seeds alone appear in the  $F_1$  generation but not the characteristic of the wrinkled-green seeds?



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Exercises

1. Complete the following sentences by choosing the appropriate words from the brackets:

(Inheritance , sexual reproduction, asexual reproduction, chromosome, DNA, gene)

Hereditary characters are transferred from parents to off spring by .....here they are said to be structural and functional units of heredity.



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2. Complete the following sentences by choosing the appropriate words from the brackets:

(Inheritance , sexual reproduction, asexual reproduction, chromosome, DNA, gene)

Organisms produced by .....show minor variations.



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3. Complete the following sentences by choosing the appropriate words from the

brackets:

(Inheritance , sexual reproduction, asexual reproduction, chromosome, DNA, gene)

The component which is in the nuclei of cells and carries the hereditary characteristics is called....



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**4.** Complete the following sentences by choosing the appropriate words from the brackets:

(Inheritance , sexual reproduction, asexual reproduction, chromosome, DNA, gene)

Chromosomes are mainly made up of .....



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5. Complete the following sentences by choosing the appropriate words from the brackets:

(Inheritance , sexual reproduction, asexual reproduction, chromosome, DNA, gene)

Organisms produced through.....show major variations.



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6. Explain Mendel's monohybrid progeny with the help of any one cross.



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7. Explain Mendel's dihybrid ratio with the help of any one cross.





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**8.** Explain the following :

Distinguish between monohybrid and dihybrid cross.



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**9.** Is it right to avoid living with a person suffering from genetic disorder?



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**10.** What is meant by chromosome? Explain its types.



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**11.** Describe the structure of DNA molecule.



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**12.** What is the use of DNA fingerprinting?





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**13.** Explain the structure, function and types of RNA.



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**14.** Why is it necessary for people to have their blood examined before marriage?



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**15.** Write a brief note on each.

Down syndrome



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**16.** Write a brief note on each.

Monogenic disorders



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**17.** Write short notes on: Sickle-cell anaemia:

Symptoms and treatment.



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18. How are the items in groups A, B and C inter-related?

A	B	C
Leber hereditary optic neuropathy	44+XXY	Pale skin, white hairs
Diabetes	45+X	Men are sterile
Albinism	Mitochondrial disorder	Women are sterile
Turner syndrome	Polygenic disorder	This disorder arises during development of zygote.
Klinefelter syndrome	Mono-genic disorder	Effect on blood-glucose level.



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**19.** Complete the analogy:

44 + X: Turner syndrome : : 44 + XXY :.....



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**20.** Complete the analogy:

3:1 : Monohybrid : : 9:3:3:1 :.....



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21. Complete the analogy:

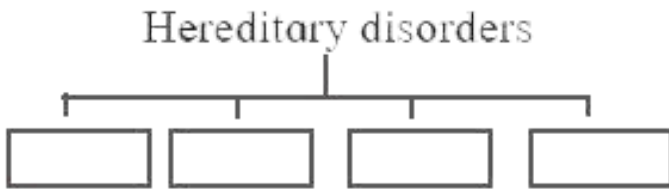
Women : Turner syndrome : : Men :.....



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22. Complete the tree diagram below based on

types of hereditary disorders.



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