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- 1.1 Select the term in Column B that best matches a description in Column A. Write the letter of the term in the corresponding space provided between the brackets. Each letter may be used only once.

COLUMN A

- [] Crossing over occurs.
- [] Cytoplasm splits to form 2 cells.
- [] Double-threaded chromosomes move to poles.
- [] Bivalents line up at equator.
- [] Ploidy of cells at end of meiosis I.
- [] Centromeres split.
- [] Human cell with 23 chromosomes.
- [] Chromosomes line up at equator in single file.
- [] The point at which genetic material is exchanged between homologous pairs.
- [] Organelle which forms the spindle in animal cells.

COLUMN B

- A Diploid
- B Chiasma
- C Anaphase I
- D Metaphase II
- E Cytokinesis
- F Gamete
- G Prophase I
- H Centrosome
- I Metaphase I
- J Anaphase II
- K Interphase
- L Haploid

(10)

- 1.2.2 The site of meiosis in a human male is ...

- A seminal vesicle.
- B scrotum.
- C seminiferous tubules.
- D vas deferens.

(1)

- 1.2.3 Asexual and sexual reproduction have the following features in common:

	Produces new individuals	Involves mitosis	Involves meiosis
A	✓	✓	x
B	x	✓	✓
C	✓	x	✓
D	✓	✓	✓

(2)

QUESTION 2

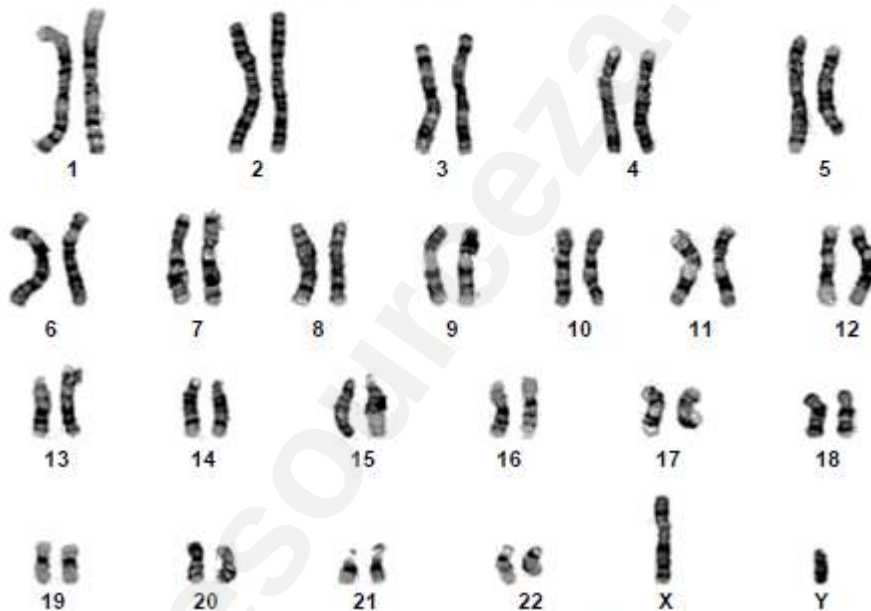
2.1 Use the information below and your own knowledge to answer the following questions.

Cri-du-chat is one of the most common human disorders caused by a type of mutation, named a deletion, on chromosome 5. The name 'Cri-du-chat' is French for 'cry of the cat'.

Symptoms:

- Poorly developed larynx leading to catlike cry
- Babies have a small head and chin, round face, a fold of skin over the eyes and the eyes are widely set
- Health problems include heart defects, hearing and sight problems, respiratory problems and poor muscle tone
- Difficulty in walking and talking correctly
- Severe mental retardation

Karyotype of an individual with Cri-du-chat



[Adapted: <<http://teacherweb.com>>]

- 2.1.1 Is this karyotype from a male or female individual? Give a reason for your answer. (2)
- 2.1.2 Describe how and why the appearance of chromosome 5 on the karyotype above indicates that this individual has Cri-du-chat syndrome. (2)
- 2.1.3 List THREE phenotypic outcomes in a person with Cri-du-chat. (3)
- 2.1.4 Do you think that the parents of a child with Cri-du-chat should seek genetic counselling before having another baby? Provide reasons to support your opinion. (4)