



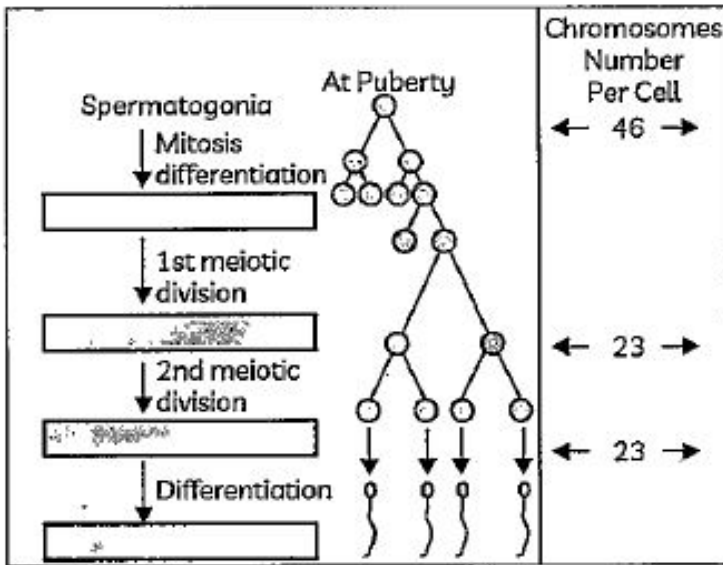
BIOLOGY

BOOKS - EDUCART PUBLICATION

SAMPLE PAPER 10

Section A

1. Identify X and Y in the given figure.



A. X = Primary Spermatocyte, Y = Secondary

Spermatocyte

B. X = Spermatozoa, Y = Spermatid

C. X = Spermatid, Y = Spermatozoa

D. X = Primary Spermatocyte, Y =

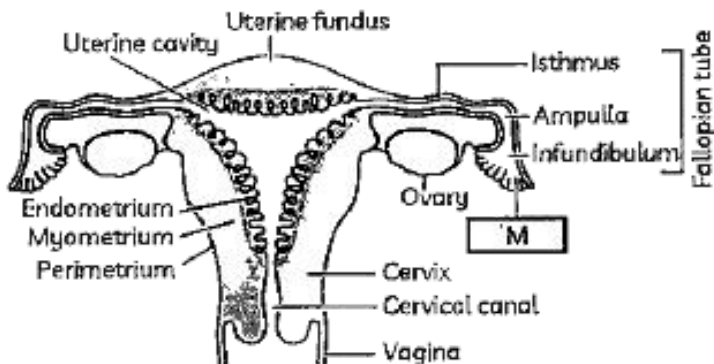
Spermatozoa

Answer:



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2. Which among these is true about M?



A. M helps in collection of ovum after ovulation.

B. M helps in oestrogen production.

C. M elongates to attach to the cervix after ovulation.

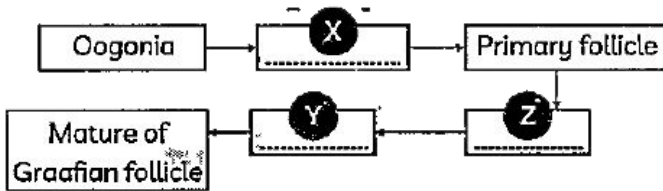
D. M forms the core of the cervical canal.

Answer:



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3. Find the correct option:



	X	Y	Z
(A)	Primary oocyte	Tertiary Follicle	Secondary Follicle
(B)	Primary oocyte	Secondary Follicle	Tertiary Follicle
(C)	Secondary Follicle	Tertiary Follicle	Primary oocyte
(D)	Tertiary Follicle	Primary oocyte	Secondary Follicle

A. A

B. B

C. C

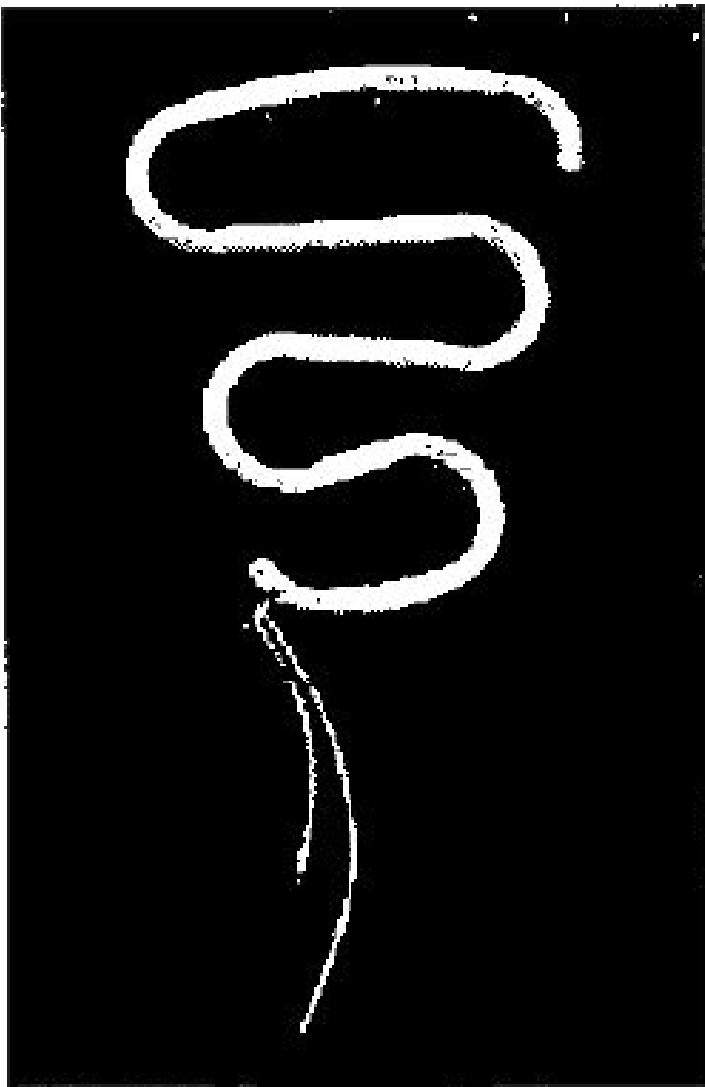
D. D

Answer:



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4. The given figure represents a non-medicated IUD. It is:



A. Cu-T

B. Condom

C. Lippe's loop

D. Oral contraceptive

Answer:



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5. W.r.t. the changes observed in an angiosperm flower subsequent to pollination and fertilisation, which of the following options is correct:

	X	Y
(A)	Ovary wall	Fruit wall (Pericarp)
(B)	Outer Integument	Testa
(C)	Inner Integument	Tegmen
(D)	Micropyle	Degenerate

The correct option will be:

A. A

B. B

C. C

D. D

Answer:



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6. Which among these methods promise a side effect and pregnancy free sexual intercourse?

- A. Periodic abstinence
- B. Lactational amenorrhoea
- C. Coitus interruptus
- D. All of them

Answer:



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7. When an orange seed is squeezed, many embryos of different shapes and sizes are revealed. Which phenomenon is responsible for this occurrence?

- A. Apomixis
- B. Polyembryony
- C. Pathenocarp
- D. Both (a) and (b)

Answer:



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8. During embryo development, the eyelids separate at:

A. 12 weeks

B. 24 weeks

C. 1 month

D. First trimester

Answer:



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9. Which type of sex determination mechanism will be shown by the following cross?

Female XX with male XO

- A. Male heterogamety
- B. Female heterogamety
- C. Male homogamety
- D. Female homogamety

Answer:



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10. Dry pericarp is present in:

A. Pea

B. Cucumber

C. Tomato

D. Guava

Answer:



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11. In the embryos of a typical dicot and a grass, true homologous structures are

- A. Coleorhiza and coleoptile
- B. Coleoptile and scutellum
- C. Cotyledons and scutellum
- D. Hypocotyl and radicle

Answer:



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12. Luteinising hormone in human males is responsible for:

- A. Regulating the levels of prolactin.
- B. Secretion of prostaglandins.
- C. Acting on the Leydig's cells of the testes to secrete testosterone.
- D. All of these

Answer:



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13. Which of the following statements correctly describes eukaryotic histones in a nucleosome structure ?

A. A core histone heptamer plus a linker histone.

B. A core histone octamer plus a linker histone.

C. A core histone plus a linker histone octamer.

D. A core histone octamer plus three linker histones.

Answer:



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14. Which of the following are arranged in a tetrahedral fashion ?

A. Megaspores

B. Microspores

C. Polyembryonic seeds

D. All of them

Answer:



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15. In Elephants, the sex-determination mechanism is of :

A. XX-XX Type

B. XX-XY Type

C. ZZ-ZO Type

D. ZZ-ZW Type

Answer:



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16. Which among these are reversible contraceptive methods:

A. Intra-uterine devices

B. Condoms

C. Oral contraceptives

D. All of these

Answer:



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17. Feminine development including development of breast, i.e., Gynaecomastia, feminine-pitched voice and poor beard growth, Sterility are the symptoms of which syndrome:

A. Turner's

B. Asperger's

C. Klinefelter's

D. Down's

Answer:



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18. 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:



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Section B

1. Assertion (A): Inheritance of genes in which genes present on a particular chromosome show a tendency to get inherited together is termed as Linkage.

Reason (R): Very low recombination frequency or strong linkage is shown by the genes grouped on the same chromosome.

A. Both A and R are true and R is the correct explanation of A

B. Both A and R are true but is not the correct explanation of A

C. A is true but R is false

D. A is false but R is true

Answer:



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2. Assertion(A): Gamete disseminated by the male determines whether the child produced will be male or female in Homo sapiens.

Reason (R): Some genes on X-chromosome and Y-chromosomes determine the gender of the progeny. Its a polygenic trait.

A. Both A and R are true and R is the correct explanation of A

B. Both A and R are true but is not the correct explanation of A

C. A is true but R is false

D. A is false but R is true

Answer:





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3. Assertion (A): Absence of the X chromosome leads to the Turner's syndrome.

Reason (R): People suffering from it have rudimentary ovaries and secondary sexual characteristics are absent.

A. Both A and R are true and R is the correct explanation of A

B. Both A and R are true but R is not the correct explanation of A

C. A is true but R is false

D. A is false but R is true

Answer:



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4. Assertion (A): Both chromosomes and genes occur in pairs.

Reason (R): In both, independent pairs segregate independently.

A. Both A and R are true and R is the correct explanation of A

B. Both A and R are true but is not the correct explanation of A

C. A is true but R is false

D. A is false but R is true

Answer:



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5. Which among these are involved in unwinding and stabilisation of the DNA helix during DNA replication?

A. DNA Ligase and Topoisomerase

B. Helicase and Topoisomerase

C. DNA polymerase I

D. All of them

Answer:



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6. Oral contraceptives:

A. Oral pills prevent conception by inhibiting ovulation.

B. Oral pills prevent conception by inhibiting implantation.

C. They also alter the quality of cervical mucus to prevent or retard entry of sperms.

D. All of them

Answer:



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7. Blocking of vas deferens will lead to:

A. Block in urine transport

B. Blocking of sperm transport

C. Blocking of waste transport

D. Blocking of gaseous exchange

Answer:



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8. Inheritance of flower colour in *Mirabilis jalapa* is an example of:

- A. Co-dominance
- B. Incomplete dominance
- C. Pleiotropy
- D. Polygenic inheritance

Answer:



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9. Cystic fibrosis is a/ an

- A. Sex-linked dominant
- B. Sex-linked recessive
- C. Autosome-linked recessive
- D. Autosome-Linked dominant

Answer:



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10. Which of these conditions might be a result of the late detection of STD's?

- A. Pelvic Inflammatory Diseases (PID)
- B. Abortions
- C. Still births, ectopic pregnancies
- D. All of them

Answer:



11. Morula divides further to form X =
,moving further in order to get implanted into
the Y =

A. X = Blastocyst, Y = Uterus

B. X = Blastomeres, Y = Uterus

C. X = Blastomeres, Y = Cervix

D. X = Blastocyst, Y = Ampullary- Isthmus

Junction.

Answer:



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12. The total number of enzymes required for the breakdown of Lactose in E.coli:

A. 1

B. 2

C. 3

D. 4

Answer:



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13. RNA-dependent RNA polymerase catalyzes the replication of from an template.

A. DNA, RNA

B. RNA, DNA

C. DNA, DNA

D. RNA, RNA

Answer:



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14. Which one of the following is not an application of DNA fingerprinting ?

A. As a tool in forensic science

B. Paternity testing to settle paternity disputes.

C. Studying evolution

D. Creating anti-malware database

Answer:



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15. In a Blueberry, contributes to the fruit formation.

A. Thalamus

B. Accessory floral parts

C. Ovary

D. Both (b) and (c)

Answer:



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16. What forms the basis of segregation and independent assortment ?

A. Homologous chromosomes join to pass into the same cell.

B. Homologous chromosomes synapse and get separated to pass into different cells.

C. Homologous chromosomes are sequentially denatured

D. (b) and (c) are correct.

Answer:



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17. Number of linkage group in an organism is

$X = \dots\dots\dots$ their number of haploid chromosomes

A. X - Greater than

B. $X =$ Equal to

C. $X =$ Less than

D. Can't say

Answer:



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18. Multiple allelism occurs when more than two alleles govern the:

- A. Same character
- B. Two characters
- C. Multiple characters
- D. (b) and (c) are correct.

Answer:



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19. Which of the following DNA Polymerases are found in eukaryotes?

A. α

B. β

C. δ

D. All of them

Answer:



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20. Identify the correct statement about the role of regulatory proteins in transcription in prokaryotes?

A. Regulatory proteins can act both as activators and as repressors.

B. Decrease in expression

C. No effect on expression

D. Increase in expression

Answer:

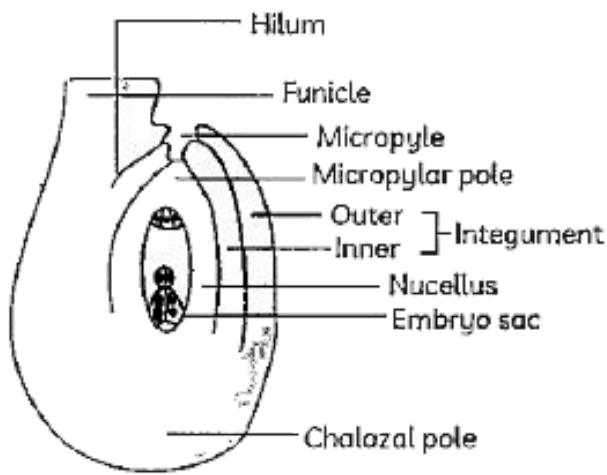




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Section C

1. Megasporogenesis is defined as the process of formation of megaspores from the megaspore mother cell (MMC). MMC is a diploid cell. This process occurs inside the nucellus of the developing ovule.



The mass of cells enclosed within the integuments is called

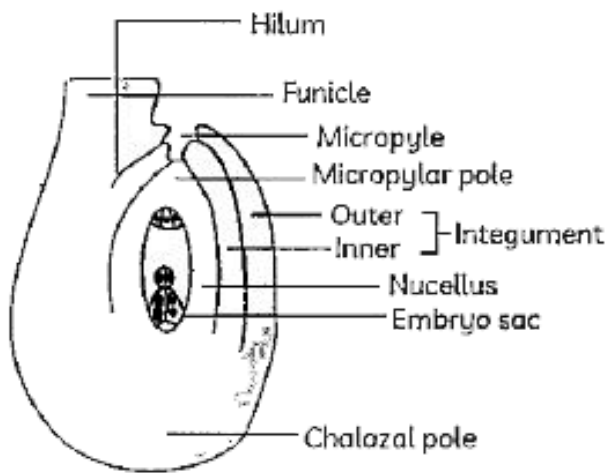
- A. Nucellus
- B. Micropyle
- C. Chalaza
- D. Funicle

Answer:



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2. Megasporogenesis is defined as the process of formation of megaspores from the megaspore mother cell (MMC). MMC is a diploid cell. This process occurs inside the nucellus of the developing ovule.



The integuments do not encircle the ovule at

.....

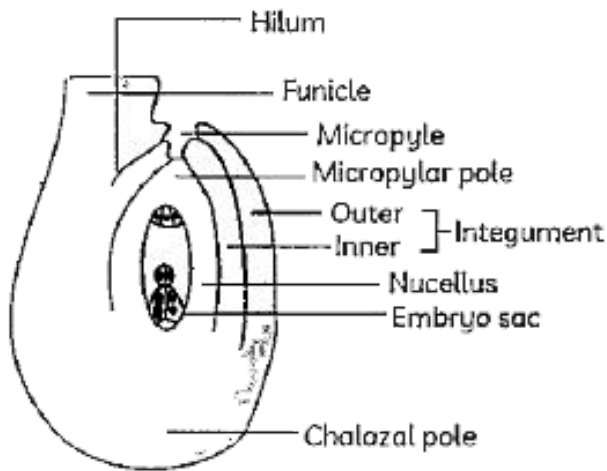
- A. Hilum
- B. Micropyle
- C. Chalaza
- D. Funicle

Answer:



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3. Megasporogenesis is defined as the process of formation of megaspores from the megaspore mother cell (MMC). MMC is a diploid cell. This process occurs inside the nucellus of the developing ovule.



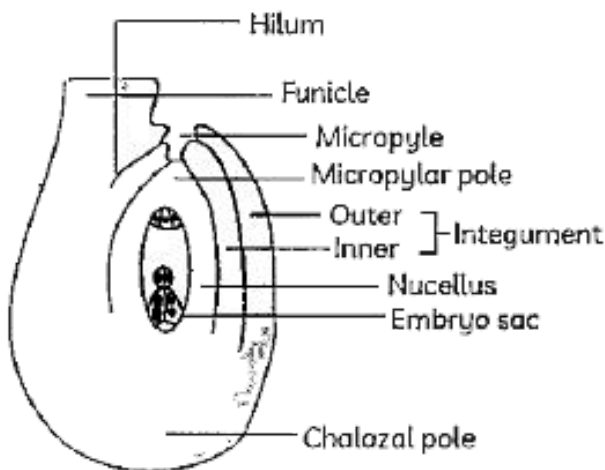
..... represents the basal part of the ovule.

- A. Nucellus
- B. Micropyle
- C. Chalaza
- D. Funicle

Answer:



4. Megasporogenesis is defined as the process of formation of megaspores from the megaspore mother cell (MMC). MMC is a diploid cell This process occurs inside the nucellus of the developing ovule.



Ovules generally differentiate a Megaspore mother cell/s in the micropylar region of the nucellus.

A. One

B. Two

C. Three

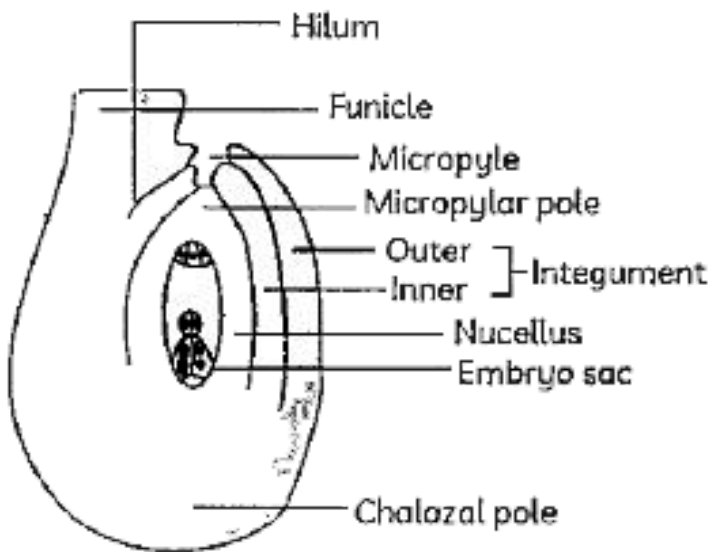
D. Four

Answer:



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5. Megasporogenesis is defined as the process of formation of megaspores from the megaspore mother cell (MMC). MMC is a diploid cell This process occurs inside the nucellus of the developing ovule.



The fate of polar nuclei in the embryo sac is:

A. Formation of Pirmary Endosperm

Nucleus

B. Formation of zygot

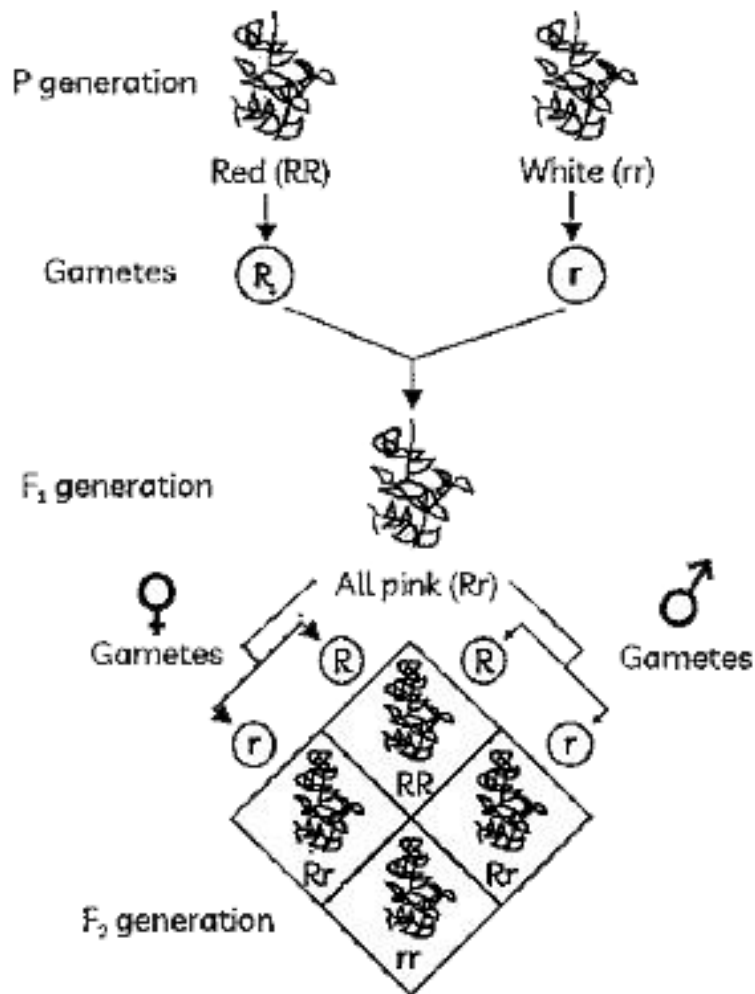
C. Embryo

D. All of these

Answer:



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Phenotypic ratio : Red : Pink : White
1 : 2 : 1

Genotypic ratio : RR : Rr : rr
1 : 2 : 1

6.

Observe the given cross. Which phenomenon

has been shown here?

A. Co-dominance

B. Incomplete dominance

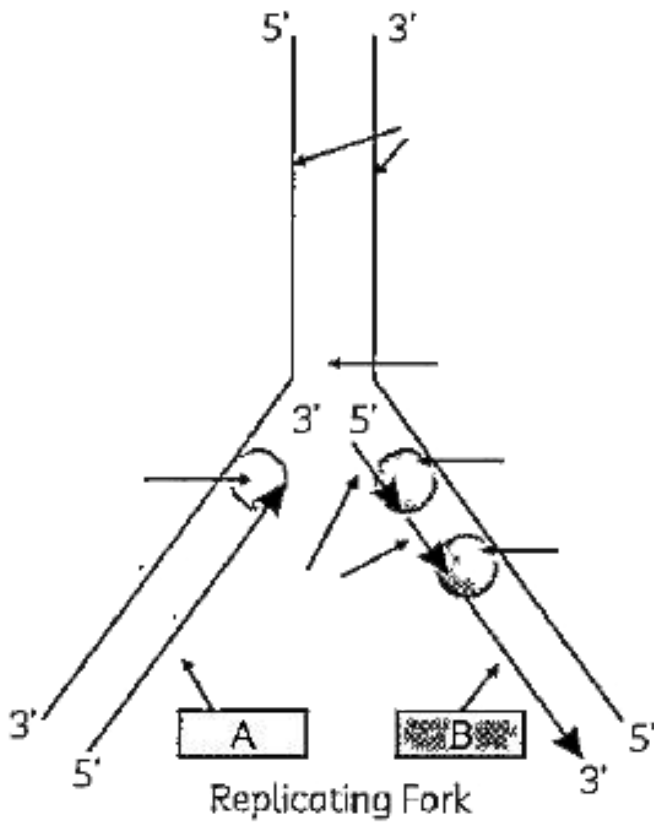
C. Pleiotropy

D. Multiple alleles

Answer:



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7.

A. A = Lagging Strand, B = Leading Strand

B. A = Okazaki Fragments, B = Leading Strand

C. A = DNA Polymerase, B = Dna Ligase

D. A = Leading Strand , B = Lagging Strand

Answer:



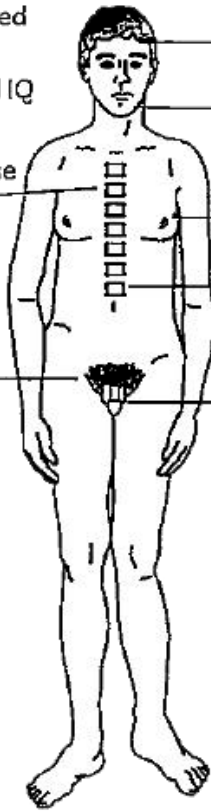
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8. Name the syndrome from which the given individual is suffering:

Tall stature
Slightly feminized
physique
Mildly impaired IQ

Tendency to lose
chest hairs

Female-type
pubic hair
pattern



Frontal baldness
absent

Poor beard growth

Breast
development

Osteoporosis

Testicular
atrophy

A. Turner's

B. Down's

C. Klinefelter's

D. Asperger's

Answer:



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9.

Observe the given figure showing the R.B.C.'S of individual X. He is suffering from:

A. Huntington's disease

B. Phenylketonuria

C. Sickle cell anaemia

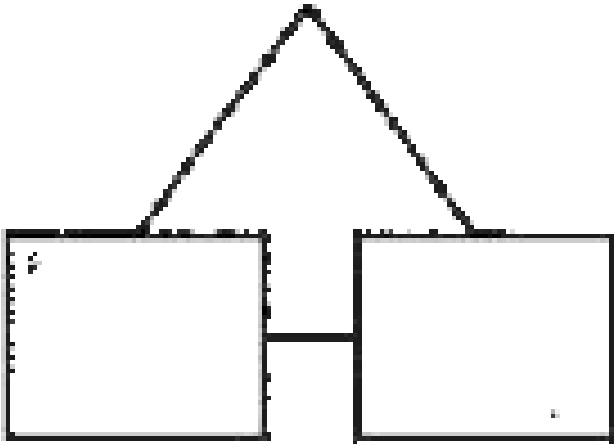
D. Turner's syndrome

Answer:



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10. In pedigree analysis, what is indicated by this symbol:



- A. Dizygotic twins
- B. Monozygotic twins
- C. Consanguineous mating
- D. Sex unknown

Answer:



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