



ARJUNA NEET BATCH



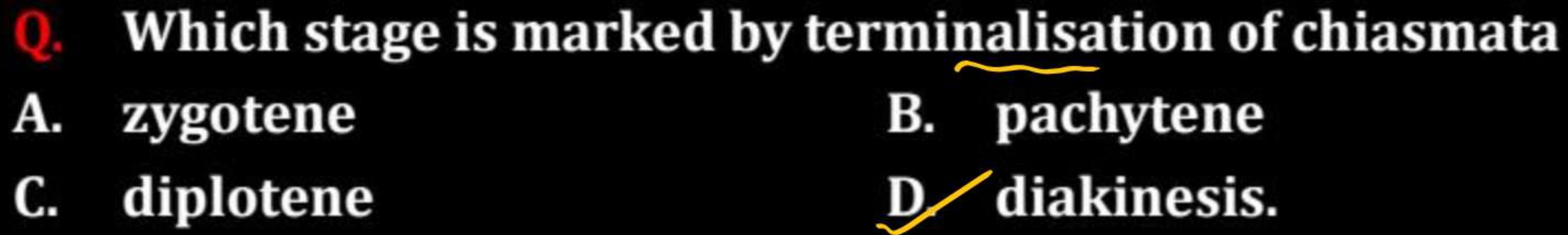
Practice Test-3

BY : Biswajit Sir

- Q.** Synapsis occurs between
- A.** Spindle fibres and centrosomes
 - B.** mRNA and ribosomes
 - C.** A male or female gamete
 - D.** Two homologous chromosomes

Synapsis → mutual exchange of segments of non-sister chromatids b/w 2 homologous chromosomes





- Q.** During mitosis, E.R. and nucleolus begin to disappear at
- A. early metaphase B. late metaphase
- C** / early prophase D. late prophase.

ER, Nucleus → disappearance →

- + Start → early prophase
- + Complete → late prophase



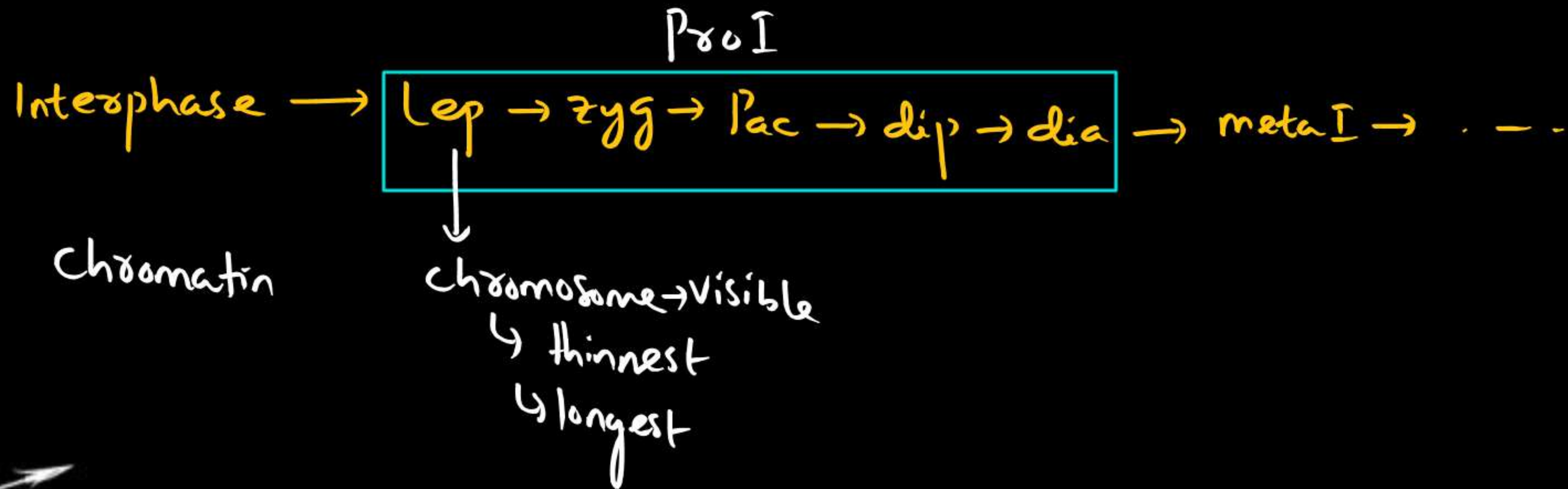
Q. Chromosomes become visible during

☒ **A. Leptotene**

B. Zygotene

C. Pachytene

D. Diplotene.



Q. Identify the stage when homologous chromosomes separate but sister chromatids remain associated

- A. Metaphase I α B. ☒ Anaphase I
C. Metaphase II α D. Anaphase II

phases

anaphase

anaphase I

anaphase II

separation of

sister chromatids

homologous chromosomes

sister chromatids



Q. In mitosis, chromosome duplication occurs during

A. ☒ interphase

B. prophase

C. metaphase

D. anaphase

↓ due to
DNA replication
↓ takes place
S phase
↓ part of
interphase



Q. Complex formed by a pair of synapsed homologous chromosomes is known as

- A. kinetochore
- B. axoneme
- C. equatorial plate
- ☒ D. bivalent

zygotene \rightarrow synapsis $\xrightarrow{\text{forms}}$ bivalent
 \hookrightarrow + 2 homologous chromosomes
 \quad + 4x chromatids



Q. Which of the following cell division maintains chromosomal number generation after generation?

A. Mitosis

B. Meiosis

C. Premitosis

D. Both A and C



Q. In S-phase of cell cycle

- A. amount of DNA remains same in each cell
- B. chromosome number is ~~increased~~
- C. amount of DNA is reduced to ~~half~~ in each cell
- ☒ D. amount of DNA doubles in each cell

G₁

S

$$\frac{2n}{2c}$$

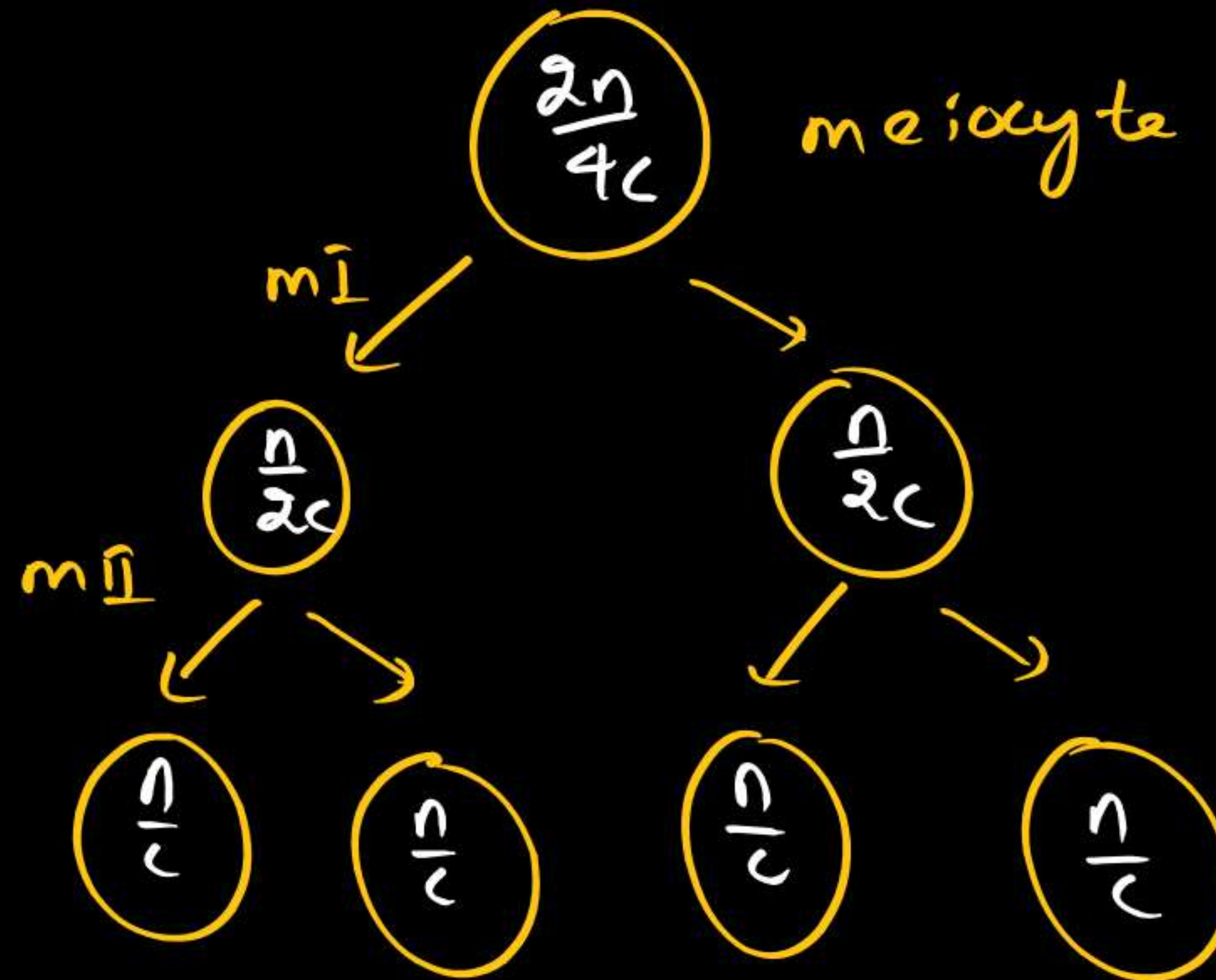
$$\frac{2n}{4c}$$



A. doubled
C. quadrupled

B. tripled

D. halved



Q. Anaphase Promoting Complex (APC) is a protein degrading machinery for proper mitosis of animal cells. If APC is defective in human cell, which of the following is expected to occur?

- A. Chromosomes will not condense ^x
- B. Chromosomes will be fragmented ^x
- C. ☒ Chromosomes will not segregate ^{→ separate}
- D. Recombination of chromosome arms will occur ^x



- Q.** Which one is correct sequence of substages of prophase I?
- A.** Leptotene, Pachytene, zygotene, diplotene and diakinesis
 - B. ✓** Leptotene, zygotene, Pachytene, diplotene and diakinesis
 - C.** Leptotene, diakinesis, Pachytene, zygotene and diplotene
 - D.** Diakinesis, pachytene, diplotene, leptotene and zygotene

Leptotene → zygotene → pachytene → diplotene → diakinesis





Q. In pachytene, the bivalent appear:

- A. double stranded
- B. single stranded
- C. Three stranded
- D. ☒ four ^{double} stranded

$1 \times \text{chromatid} \rightarrow 1 \times \text{ds DNA}$

pachytene \rightarrow chromatid \rightarrow ^{become} visible

$\therefore \text{bivalent} \rightarrow 4 \times \text{chromatid} \Rightarrow 4 \times \text{ds DNA}$



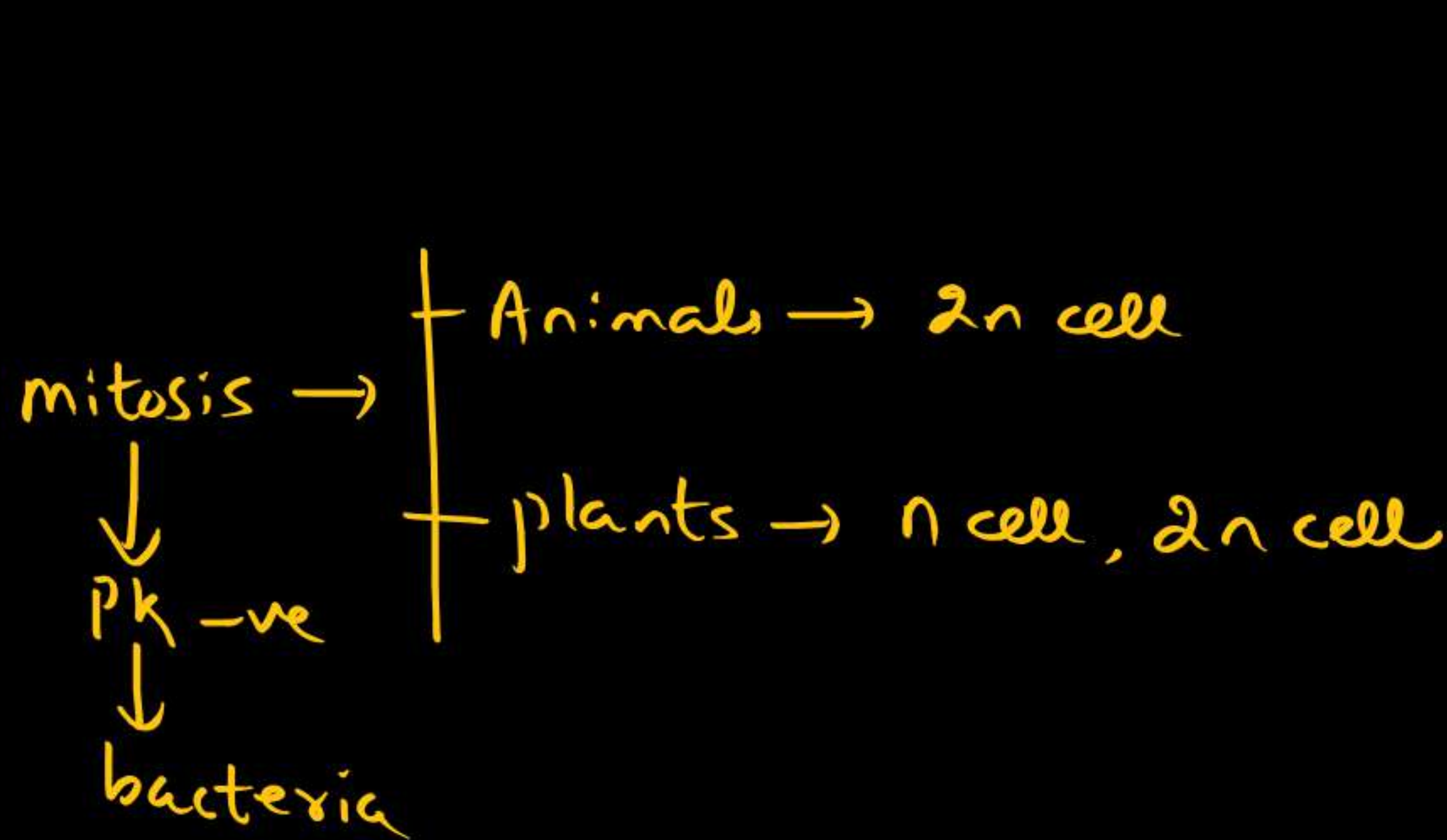
Q. Mitosis occurs in:

A. haploid individuals

B. diploid individuals

C. both A and B

D. in bacteria only



individual

n
 $2n$

cell

n
 $2n$



Q. Replicatiton of chromosomes in meiosis occurs in:

A. ☒ interphase

B. telophase

C. prophase II

D. prophase I

↓
S phase
↓
interphase



Q. The pairing of homologous chromosomes during zygotene is called as:

- A. synapse
- B. terminalisation
- C. ☒ synapsis
- D. crossing over



Q. At what stage of the cell cycle are histone proteins synthesized in a eukaryotic cell?

- A.** During G_2 stage of prophase
- B. ✓** During S phase
- C.** During entire prophase
- D.** During telophase



Q. Examples of mitotic poisons are:

A. azides

B. steroids

C. ✓ chalones

D. cytokinin

chemicals → inhibit mitosis (cell division)
↳ Colchicine, chalone, mustard gas,
Ribonuclease, cyanide



Q. Variations appear during meiosis due to:

A. crossing over

B. independent assortment

C. seggregation

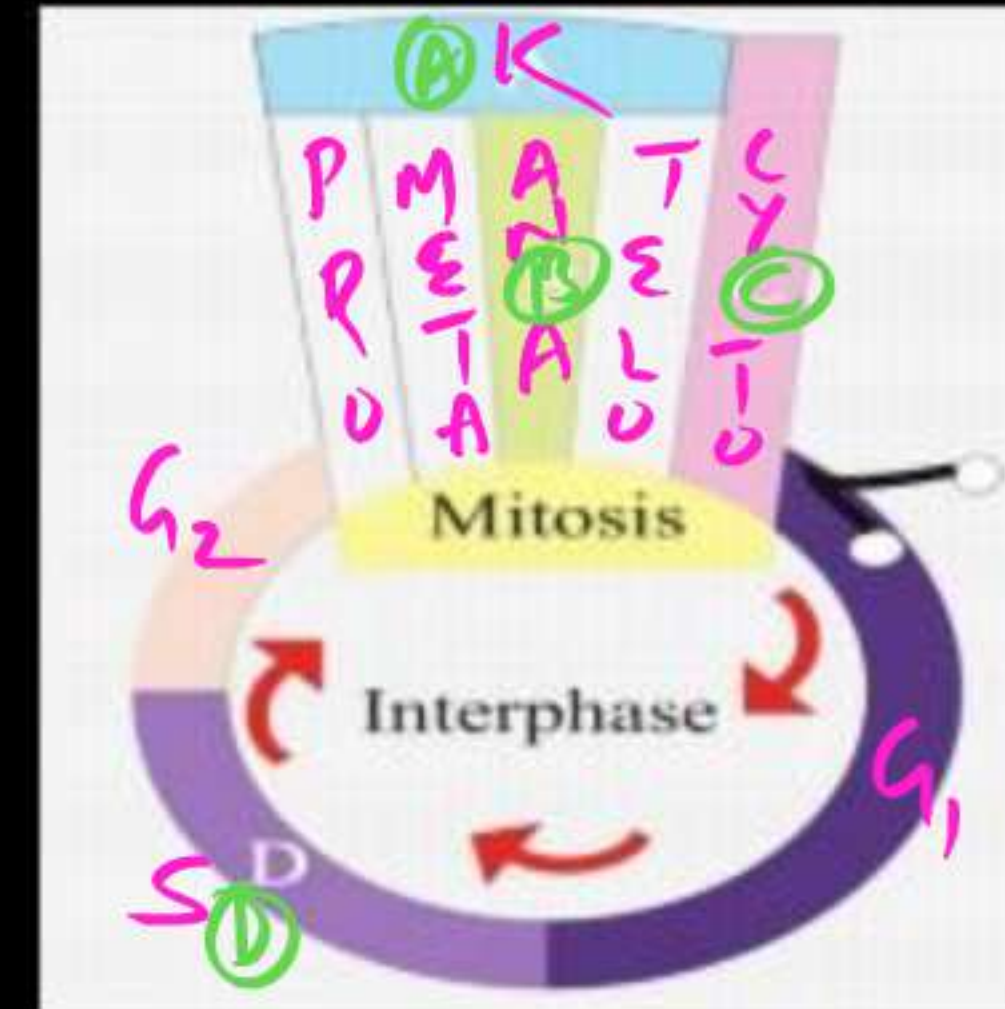
D. linkage

Variation
↓ due to
genetic recombination
↓ due to
crossing over



Q. Given below is a schematic break-up of the phases/stages of cell cycle. Which one of the following is the correct indication of the stage/phase in the cell cycle?

- A. C-karyokinesis ✗
- B. D-synthetic phase ✓
- C. A-cytokinesis ✗
- D. B-metaphase ✗





Q. How many ^{mitosis} equational divisions are necessary in a cell of onion root tip to form 128 cells?

A. 64

B. 128

C. 7

☒ D. 127

no. of mitosis required to produce
 X no of cells $\rightarrow X-1$

$\therefore 128 - 1 = 127$ mitotic div.



Q. DNA content is doubled during:

A. metaphase

☒ B. interphase

C. prophase

D. telophase

due to
↓
DNA Replication
↓
S phase
↓
interphase.





Q. Amitosis is shown by:

A. ☒ bacteria

B. Euglena

C. Syllis

D. Hydra



- Q. Binomial nomenclature means:**
- A. one name given by two scientists**
 - ☒ B. one name comprising a generic and a specific epithet**
 - C. two names, one latinised, other of a person**
 - D. two names, one scientific, other local**



Q. Species is a group of organisms which:

- A.** ✓ interbreed freely
- B.** do not interbreed ✗
- C.** live together ✗
- D.** none of these





Q. The term 'New Systematics' was introduced by:

- A.** Linnaeus
- B.** Bentham and Hooker
- C.** Julian Huxley
- D.** De Candolle





Q. Which of the following is a category?

A. Order ✓

B. Family ✓

C. Genus ✓

D. All of these ✓



Q. The total number of species, that are known and described range between:

A. 0.5-1.0 million

B. 1.1-1.2 million

C. 1.7-1.8 million

D. 2.5-3.0 million





Q. Basic unit or lowest taxonomic category is:

A. ☒ species

B. Family

C. variety

D. kingdom





Q. Oryza sativa is the binomial name of the rice plant, the sativa stands for:

A. Specific name

☒ **B.** Specific epithet

C. Species name

D. Specific nomenclature





Q. Species Plantarum and systema Naturae were written by:

A. Bentham

B. Theoprastus

C. Linnaeus

D. Hutchinson





- Q. ICBN stands for:**
- A. International Classification of Biological Nomenclature**
 - B. International code of Botanical Nomenclature**
 - C. International Classification of Biological Naming**
 - D. International Class of Biological Nomenclature**



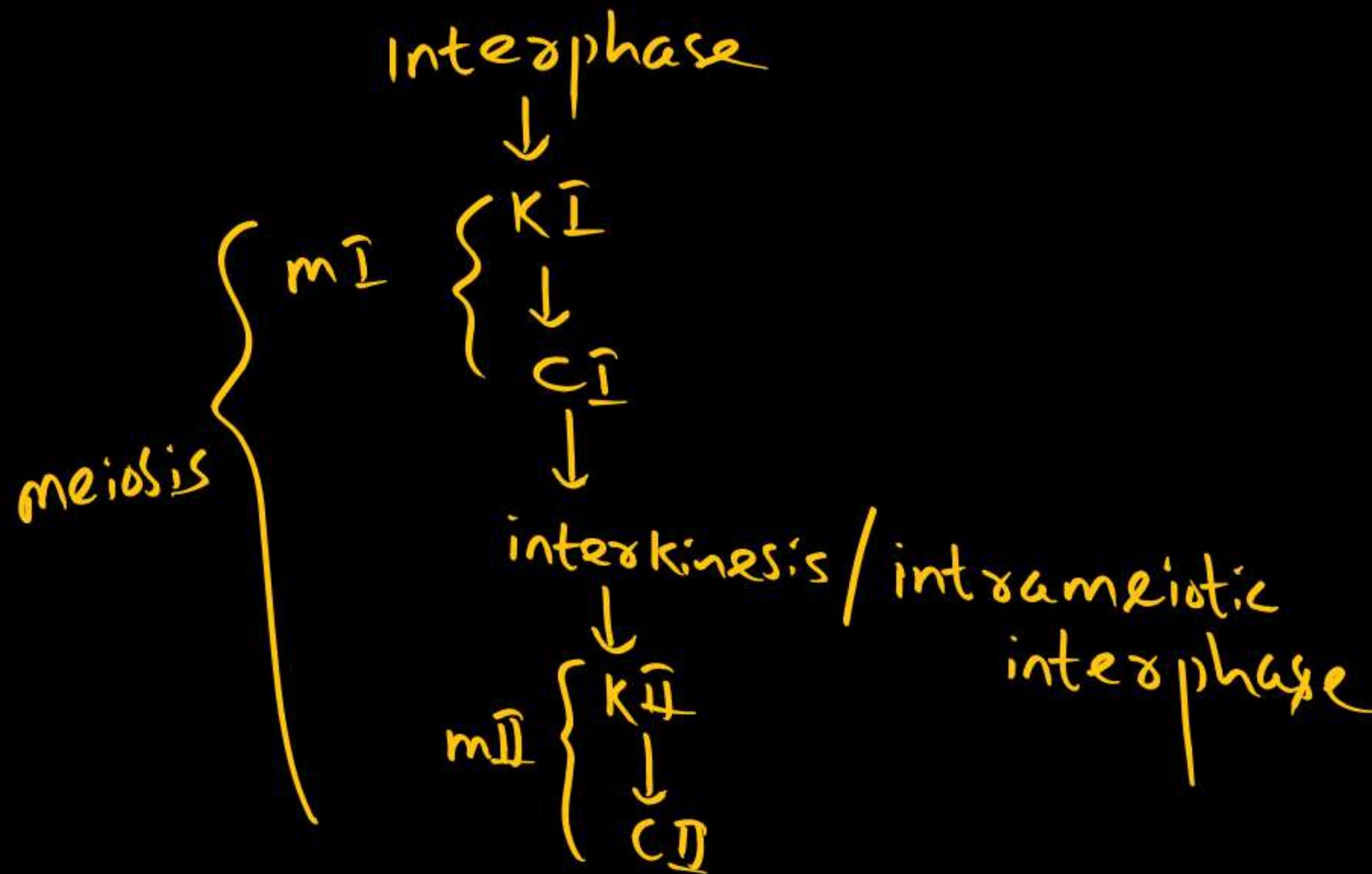
Q. The stage between two metotic divisions is called:

A. Interphase

B. Cytokinesis

C. ☒ interkinesis

D. Karyokinesis



Q. A stage of mitosis is shown in the diagram. Which stage is it and what are its characteristics?



metaphase ←

- A. Metaphase-Spindle fibers attached to kinetochores, centromeres ~~split~~ and chromatids ~~separate~~.
- ☒ B. ☒ Metaphase-Chromosomes moved to spindle equator, chromosomes made-up of two sister chromatids.
- C. *α* Anaphase-Centrosomes split and chromatids separate and start moving away.
- D. *α* Late Prophase-Chromosomes move to spindle equator.



Q. The centrosome duplicates during the:

A. G_2 -phase of cell cycle

B. ☒ S - phase of cell cycle

C. Prophase of cell cycle

D. G_1 - phase of cell cycle





Q. In a typical eukaryotic cell cycle, Gap 1, Synthesis and Gap 2 are three phases included in the:

- A. Prophase
- B. metaphase
- C. anaphase
- ☒ D. interphase





Q. Growth of multicellular eukaryotic organisms is due to

A. Cell division

B. Differentiation

C. Dedifferentiation

D. Redifferentiation





Q. Which organisms are affected by photoperiod?

- A. All plants**
- B. All animals**
- C. Seasonal breeders of plants and animals**
- D. Continuous breeders of plants and animals**





Q. Who is considered as founder of binomial nomenclature?

A. Huxley

B. Linnaeus

C. Robert Brown

D. T H Moragan





Q. Which of the following contains information about any one taxon?

A. Keys

B. Catalogue

C. Monograph

D. Manual



Q. Which of the following is meant for ex situ conservation of plants?

A. Herbarium

↳ dead plants
ex situ

C. Museum

↳ dead plant
ex situ preservation

B. ✓ Botanical garden

↳ living

D. All

↳ living plants



Q. Which of the following is not true about living organisms?

A. Capable of evolution T

B. Show growth T

C. ~~Every~~ organism show self-Consciousness F

D. Self-replicating T



Q. Which type of growth is shown by non-living entity?

A. External ✓

B. Reversible ✓

C. By some external agents ✓

D. ✓ All

growth
←



Q. Gorilla ^{gorilla} is an example of

- A. Homonym
- C. Synonym

- B. Autonym
- D. Tautonym

Gorilla gorilla → same generic name and specific epithet





*thanks
for watching*

