

NEET UG · BIOLOGY · CELL: THE UNIT OF LIFE

Numbers, Names & Timeline

Every size, count and discovery from the chapter that NEET loves to ask — in one place.



20

NUMERICAL FACTS

10

SCIENTISTS

8

TIMELINE POINTS

01

NUMERICAL FACTS

How big is it? — The size scale

From the tiny ribosome to a typical eukaryotic cell — every size from the chapter on one scale.



Counts, ratios & key numbers

70S**Prokaryotic ribosome**

Two subunits: 50S + 30S

80S**Eukaryotic ribosome**

Two subunits: 60S + 40S

3**Layers in bacterial cell envelope**

Tightly bound, three-layered structure

3**Parts of bacterial flagellum**

Filament, hook and basal body

1 → 20–40**Chloroplasts per cell**1 in *Chlamydomonas*; 20–40 in mesophyll cells**90%****Vacuole volume in plant cells**

Can occupy up to 90% of the cell volume

2 m**DNA in one human cell**

Approx. two-metre-long thread of DNA

46**Chromosomes in human cells**

Twenty-three pairs

10–50 nm**Perinuclear space**

Width of the space in the nuclear envelope

52% · 40%**Human RBC membrane**

≈ 52% protein and 40% lipids

TAYYARI SELECTION KI

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Timeline of the cell

1831	Robert Brown Discovered the nucleus and first described it as a cell organelle.
1838	Matthias Schleiden German botanist — observed that all plants are composed of different kinds of cells which form the tissues of the plant.
1839	Theodore Schwann British zoologist — studied animal cells and reported a thin outer layer , now known as the plasma membrane .
1855	Rudolf Virchow Explained that cells divide and new cells are formed from pre-existing cells — <i>Omnis cellula-e cellula</i> .
1898	Camillo Golgi First observed densely stained reticular structures near the nucleus — later named Golgi bodies after him.
1950s	Electron microscope Its advent allowed detailed study of cell membrane structure .
1953	George Palade First observed ribosomes under the electron microscope as dense particles.
1972	Singer & Nicolson Proposed the widely accepted fluid mosaic model of cell membrane structure.

ALSO REMEMBER (NO YEAR GIVEN)

Anton von Leeuwenhoek

First **saw and described a live cell**.

Flemming

Named **chromatin** — the material of the nucleus stained by basic dyes.

QUICK RECALL

Cover the right side & test yourself

Omnis cellula-e cellula	Rudolf Virchow	Fluid mosaic model	Singer & Nicolson
First saw a live cell	Leeuwenhoek	Discovered the nucleus	Robert Brown
Ribosomes seen under EM	George Palade	Named chromatin	Flemming
All plants made of cells	Schleiden	Smallest cell & its size	Mycoplasma · 0.3 µm
Eukaryotic ribosome subunits	60S + 40S	Human RBC diameter	≈ 7.0 µm
DNA length in a human cell	≈ 2 metres	Typical eukaryotic cell	10 – 20 µm