

Cell: The Unit of Life

NEET previous year questions · Biology

13 questions from the official papers: NEET 2026 (4), Re-NEET 2026 (7), NEET 2020 (2). Each is followed by its answer and a worked solution written by BrainIt. Generated on 23 October 2026.



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1. NEET 2026 · Q106

Which one of the following is the site for active ribosomal RNA synthesis?

- | | |
|----------------|-----------------|
| (1) Centrosome | (2) Chromatin |
| (3) Nucleolus | (4) Kinetochore |

Answer (3)

Sol. The nucleolus is a non-membrane-bound region within the nucleus and is the site of active ribosomal RNA (rRNA) synthesis and assembly of ribosomal subunits. The centrosome organises spindle fibres, chromatin is the DNA-protein complex carrying genes, and the kinetochore is the protein plate on the centromere for spindle-fibre attachment.

2. NEET 2026 · Q155

Non-membrane bound cell organelles found in both prokaryotic and eukaryotic cells are _____.

- | | |
|-----------------|------------------|
| (1) Ribosomes | (2) Lysosomes |
| (3) Centrosomes | (4) Mitochondria |

Answer (1)

Sol. Ribosomes lack a surrounding membrane and are present in both prokaryotic (70S) and eukaryotic (80S) cells. Lysosomes and mitochondria are membrane-bound and absent in prokaryotes, while the centrosome is found only in animal (eukaryotic) cells, so only ribosomes fit.

3. NEET 2026 · Q175

Choose the correct statements regarding cell organelles and their inclusions.

Statement I: The endomembrane system includes Golgi complex, endoplasmic reticulum and mitochondria.

Statement II: Rough endoplasmic reticulum bears ribosomes on its surface.

Statement III: Both mitochondria and plastids have circular DNA.

Statement IV: A network of microtubules, microfilaments and intermediate filaments present in the cytoplasm is called cytoskeleton.

Statement V: Mitochondrion is a single membrane-bound structure.

Choose the correct answer from the options given below:

- | | |
|------------------------|-------------------------|
| (1) I and II only | (2) I, II and III only |
| (3) III, IV and V only | (4) II, III and IV only |

Answer (4)

Sol. Rough endoplasmic reticulum bears ribosomes on its surface (II correct).

Both mitochondria and plastids contain their own circular DNA (III correct).

The cytoplasmic network of microtubules, microfilaments and intermediate filaments forms the cytoskeleton (IV correct).

The endomembrane system does not include mitochondria (I wrong), and the mitochondrion is a double membrane-bound organelle, not single (V wrong).

Hence Statements II, III and IV are correct.

4. NEET 2026 · Q176

Select the correct statements regarding cell membrane in eukaryotic cell.

Statement I: Membrane of human RBCs has approximately 52% protein.

Statement II: Major phospholipids are arranged in a bilayer.

Statement III: Extensions of the plasma membrane into the cell form mesosomes.

Statement IV: Tails towards the inner part of lipids are hydrophobic and thus protected from aqueous medium.

Statement V: Glycocalyx is present on the outer surface of the plasma membrane.

Choose the correct answer from the options given below:

- (1) III, IV and V only (2) II, III and V only
(3) I, II and IV only (4) I, III and V only

Answer (3)

Sol. The human red blood cell (RBC) membrane contains about 52% protein and roughly 40% lipid (I correct)

The phospholipids form a bilayer with their hydrophobic tails oriented inward, away from the aqueous medium (II and IV correct).

Mesosomes and glycocalyx are prokaryotic features and are absent from the eukaryotic plasma membrane, so Statements III and V are wrong.

Hence Statements I, II and IV are correct.

5. Re-NEET 2026 · Q93

Cell theory was formulated by _____.

- (1) Schleiden and Schwann
(2) Robert Brown
(3) Singer and Nicolson
(4) Antonie Von Leeuwenhoek

Answer (1)

Sol. Matthias Schleiden concluded in 1838 that all plants are composed of cells, and Theodore Schwann reached the same conclusion for animals in 1839; together they formulated the cell theory. Rudolf Virchow later added the crucial third element, that all cells arise from pre-existing cells. NCERT Class 11, Cell: The Unit of Life.

6. Re-NEET 2026 · Q94

Which of the following are characteristics of prokaryotic cells?

Statement I: Ribosomes are made of 50S and 30S subunits

Statement II: They can have plasmids

Statement III: They contain mesosome

Statement IV: They have peroxisomes

Choose the correct answer from the options given below :

- (1) (II) and (III) only
(2) (I) and (III) only
(3) (I), (III) and (IV) only
(4) (I), (II) and (III) only

Answer (4)

Sol. Prokaryotic ribosomes are 70S, built from 50S and 30S subunits, in contrast to the 80S ribosomes of eukaryotes (Statement I). Many bacteria carry plasmids, small extrachromosomal circles of DNA that confer traits such as antibiotic resistance (Statement II). The mesosome is a distinctive infolding of the prokaryotic plasma membrane involved in cell wall formation and respiration (Statement III). Peroxisomes, however, are MEMBRANE-BOUND ORGANELLES found only in eukaryotic cells, so (Statement IV) is false. NCERT Class 11, Cell: The Unit of Life.

7. Re-NEET 2026 · Q96

Mitochondrial inner membrane encloses _____

- (1) matrix (2) cytosol
(3) mucus (4) aqueous humor

Answer (1)

Sol. The mitochondrion has two membranes. The inner membrane throws out folds called cristae and encloses the MATRIX, a dense fluid containing the enzymes of the citric acid cycle, mitochondrial DNA and 70S ribosomes. The narrow space between the two membranes is the intermembrane space. NCERT Class 11, Cell: The Unit of Life.

8. Re-NEET 2026 · Q97

Match List-I with List-II.

List I	List II
P) Cristae	I) Flat membrane sacs in stroma of chloroplast
Q) Cisternae	II) Infoldings in mitochondria
R) Thylakoids	III) Cell membrane
S) Phospholipid	IV) Disc shaped sacs in the Golgi apparatus

Choose the correct answer from the options given below:

- (1) P-III, Q-IV, R-I, S-II (2) P-II, Q-IV, R-I, S-III
 (3) P-II, Q-IV, R-III, S-I (4) P-IV, Q-III, R-I, S-II

Answer (2)

Sol. Cristae are the infoldings of the inner mitochondrial membrane that increase surface area for the electron transport chain (P-II). Cisternae are the flattened disc-shaped sacs stacked to form the Golgi apparatus (Q-IV). Thylakoids are the flattened membranous sacs suspended in the chloroplast stroma where the light reactions occur (R-I). Phospholipids form the bilayer that is the structural basis of the cell membrane (S-III). NCERT Class 11, Cell: The Unit of Life.

9. Re-NEET 2026 · Q98

The plastid that stores xanthophyll is known as _____.

- (1) chloroplast (2) chromoplast
 (3) aleuroplast (4) amyloplast

Answer (2)

Sol. Chromoplasts are the coloured plastids that hold carotenoid pigments - carotenes and xanthophylls - giving fruits, flowers and some roots their yellow, orange and red colours. Leucoplasts, being colourless, are the storage plastids and are further divided by what they store: amyloplasts for starch, elaioplasts for oils and aleuroplasts for proteins. NCERT Class 11, Cell: The Unit of Life.

10. Re-NEET 2026 · Q108

Endomembrane system includes _____.

- (1) endoplasmic reticulum, Golgi complex, lysosomes and vacuole
 (2) endoplasmic reticulum, chloroplast, peroxisomes and vacuole
 (3) mitochondria, chloroplast, peroxisomes and vacuole
 (4) Golgi complex, chloroplast, peroxisomes and vacuole

Answer (1)

Sol. The endomembrane system is defined as those organelles whose functions are coordinated and whose membranes are continuous or exchanged through vesicles: the endoplasmic reticulum, Golgi complex, lysosomes and vacuoles. Mitochondria, chloroplasts and peroxisomes are deliberately excluded because their functions are not coordinated with this network. NCERT Class 11, Cell: The Unit of Life.

11. Re-NEET 2026 · Q123

Smooth endoplasmic reticulum _____.

- (1) has ribosomes attached to its surface
 (2) is the major site for the synthesis of lipids
 (3) is actively involved in protein synthesis
 (4) is a site for the synthesis of carbohydrates

Answer (2)

Sol. The smooth endoplasmic reticulum is defined by the ABSENCE of ribosomes on its surface, and it is the principal site of lipid synthesis - including steroid hormones in cells such as those of the adrenal cortex and gonads. It also handles detoxification, which is why it is abundant in liver cells. Ribosome-studded rough ER handles protein synthesis instead. NCERT Class 11, Cell: The Unit of Life.

12. NEET 2020 · Q4

Which is the important site of formation of glycoproteins and glycolipids in eukaryotic cells?

- (1) Peroxisomes (2) Golgi bodies
 (3) Polysomes (4) Endoplasmic reticulum

Answer (2)

Sol. Golgi bodies are the primary site for the formation of glycoproteins and glycolipids in eukaryotic cells.
 Chapter: Cell: The Unit of Life.

13. NEET 2020 · Q51

Which of the following statements about inclusion bodies is incorrect?

- (1) These are involved in ingestion of food particles
 (2) They lie free in the cytoplasm
 (3) These represent reserve material in cytoplasm
 (4) They are not bound by any membrane

Answer (1)

Sol. Inclusion bodies lie free in the cytoplasm, store reserve material and lack a bounding membrane. They are not involved in ingestion of food particles, making that statement incorrect. Chapter: Cell: The Unit of Life.

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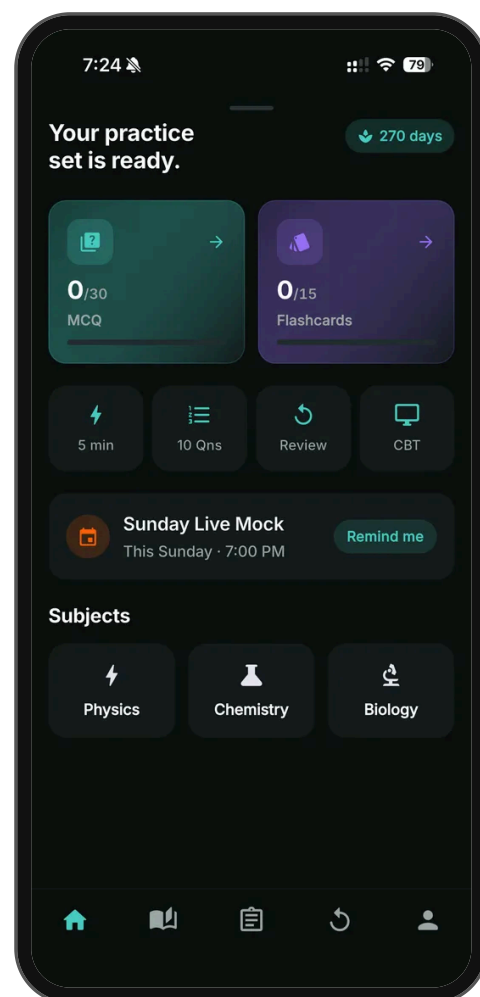
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