Prachand NEET 2025

Botany

Cell - The Unit of Life

DPP 01

Q1 Match **List I** with **List II**:

	List I		List II
A.	Axoneme	I.	Core of Cilia
B.	Spindle fibres	II.	Provide mechanical support
C.	Cytoskeleton	III.	Formed by centriole
D.	Aleuroplasts	IV.	Store proteins

Choose the **correct** option from the codes given below:
(A) A-III, B-I, C-IV, D-II
(B) A-II, B-III, C-IV, D-I
(C) A-I, B-III, C-II, D-IV
(D) A-II, B-I, C-IV, D-III

Q2 Which of the following is **absent** in a nucleus?
(A) Chromatin
(B) Nucleoplasm
(C) Nucleoli
(D) Ribosomes

Q3 Which of the following is an organelle within an organelle?
(A) Ribosome
(B) Lysosome
(C) Plastid
(D) Golgi bodies

Q4 Given below are two statements: one is labelled as Assertion A and the other is labelled as Reason R:
Assertion A: Arrangement in cilia and flagella is said to be a 9 + 2 array.
Reason R: They have 9 doublet microtubules at the periphery and 1 pair of microtubules at the centre.
In the light of the above statements, choose the **correct** answer from the options given below:
(A) A is true but R is false.
(B) A is false but R is true.
(C) Both A and R are true and R is the correct explanation of A.
(D) Both A and R are true but R is not the correct explanation of A.

Q5 Which of the following organelles is a part of endomembrane system of eukaryotic cell?
(A) Peroxisomes
(B) Mitochondria
(C) Chloroplasts
(D) Golgi complex

Q6 Match **List I** with **List II**:

List I	List II
(A) Centrioles	(I) Proteinaceous filamentous network
(B) Chromoplasts	(II) Perpendicular to each other
(C) Leucoplasts	(III) Possess coloured pigments
(D) Cytoskeleton	(IV) Colourless

Choose the **correct** option from the codes given below:
(A) A-II, B-I, C-IV, D-III
(B) A-I, B-III, C-II, D-IV
(C) A-II, B-III, C-IV, D-I
(D) A-III, B-I, C-IV, D-II

Q7 Middle lamella is
(A) Present inside the primary wall
(B) Present inside the secondary wall
(C) Present outside the primary wall
(D) Present in between secondary and tertiary walls

Q8 Ribosomes are **not** present in/on:
(A) chloroplast.

(B) mitochondria.
(C) RER.
(D) Golgi complex.

Q9 Given below are two statements: one is labelled as Assertion A and the other is labelled as Reason R:
Assertion A: Ribosomes size is not the same in every organism.
Reason R: Prokaryotes have 70S while eukaryotes have 80S ribosomes.
In the light of the above statements, choose the **correct** answer from the options given below:
(A) A is true but R is false.
(B) A is false but R is true.
(C) Both A and R are true and R is the correct explanation of A.
(D) Both A and R are true but R is not the correct explanation of A.

Q10 Mitochondrial matrix does **not** contain:
(A) single circular DNA molecule.
(B) 70S ribosomes.
(C) few RNA molecules.
(D) pigment containing membranes.

Q11 Which of the following pair of organisms possess 80S ribosome?
(A) Mycoplasma and plants
(B) Cyanobacteria and plants
(C) Blue green and purple and green photosynthetic bacteria
(D) Fungi and Protista

Q12 Match **List I** with **List II**:

List I		List II
A. Stromal lamellae	I.	Flattened membranous sacs
B. Thylakoids	II.	Matrix of nucleus
C. Centriole	III.	Connect intergranal thylakoids
D. Nucleoplasm	IV.	Cartwheel organisation

Choose the **correct** option from the codes given below:
(A) A-II, B-I, C-IV, D-III
(B) A-I, B-III, C-II, D-IV
(C) A-II, B-III, C-IV, D-I
(D) A-III, B-I, C-IV, D-II

Q13 Intracellular compartments are **not** found in:
(A) lower plants. (B) higher plants.
(C) prokaryotes. (D) eukaryotes.

Q14 Given below are two statements: one is labelled as Assertion A and the other is labelled as Reason R:
Assertion A: Chromatin is highly extended and elaborate nucleoprotein fibres present in nucleus.
Reason R: Chromatin contains DNA and some basic proteins called histones, some non-histone proteins and also RNA.
In the light of the above statements, choose the **correct** answer from the options given below:
(A) A is true but R is false.
(B) A is false but R is true.
(C) Both A and R are true and R is the correct explanation of A.
(D) Both A and R are true but R is not the correct explanation of A.

Q15 Cisternae are:
(A) infoldings of mitochondria.
(B) present in a Golgi complex.
(C) membrane of endoplasmic reticulum.
(D) extensions of plasma membrane into the cell in prokaryotes.

Q16 Which of the following is **incorrect** about microbodies?
(A) These are membrane bound structures.
(B) These are a type of vesicles.
(C) They contain various enzymes.
(D) These structures are present only in plant.

Q17 Match **List I** with **List II**:

List I		List II
A. Chloroplasts	I.	Contain chlorophyll and carotenoid pigments
B. Cristae	II.	Centriole

C.	Proteinaceous hub	III.	Mitochondrial infoldings
D.	Plasmodesmata	IV.	Absent in animal cell

Choose the **correct** option from the codes given below:
(A) A-III, B-I, C-IV, D-II
(B) A-II, B-III, C-IV, D-I
(C) A-I, B-III, C-II, D-IV
(D) A-II, B-I, C-IV, D-III

Q18 Which of the following organelles is rich in almost all types of hydrolytic enzymes?
(A) Golgi bodies
(B) Ribosome
(C) Microbodies
(D) Lysosome

Q19 Given below are two statements: one is labelled as Assertion A and the other is labelled as Reason R:
Assertion A: ER divides the intracellular space into two distinct compartments.
Reason R: Compartments form by ER are luminal (cytoplasm) and extra luminal (inside ER) compartments.
In the light of the above statements, choose the **correct** answer from the options given below:
(A) A is true but R is false.
(B) A is false but R is true.
(C) Both A and R are true and R is the correct explanation of A.
(D) Both A and R are true but R is not the correct explanation of A.

Q20 Which of these are **not** common in chloroplast and mitochondria?
(A) Presence of double membrane
(B) Presence of 70S ribosomes
(C) Presence of grana
(D) Presence of DNA molecule

Q21 Select the **correct** statement from the following.
(A) Two membranes of the nucleus are stick together without any space.
(B) Inner membrane of nucleus is continuous with the endoplasmic reticulum.
(C) Nucleoplasm contains nucleolus but no chromatin.
(D) Nucleolus is a site for active ribosomal RNA synthesis.

Q22 The function performed by mitochondria in eukaryotes is carried out by prokaryotes through:
(A) chromatophores.
(B) fimbriae.
(C) mesosome.
(D) inclusion bodies.

Q23 Select the **incorrect** feature about about cilia.
(A) They work like oars.
(B) They can cause movement of the cell.
(C) They can cause movement of the surrounding fluid.
(D) They are outgrowths of the cell wall.

Q24 Identify from the following which is/are **not** having double membrane.
I. Vacuole
II. Mitochondria
III. Lysosomes
IV. Endoplasmic reticulum
Choose the most appropriate answer from the options given below:
(A) I, II and IV only
(B) II only
(C) II, III and IV only
(D) All except II

Q25 Given below are two statements.
Statement I: The fimbriae are elongated tubular structures present in bacteria.
Statement II: The pili are large bristle like fibres sprouting out of the bacterial cell.
In the light of the above statements, choose the most appropriate answer from the options given below:
(A) Statement I is correct but Statement II is incorrect.
(B) Statement I is incorrect but Statement II is correct.

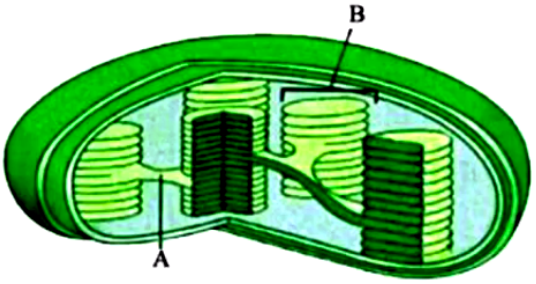
(C) Both Statement I and Statement II are correct.
(D) Both Statement I and Statement II are incorrect.

Q26 A major site for synthesis of lipids is:
(A) nucleoplasm.
(B) rough endoplasmic reticulum.
(C) smooth endoplasmic reticulum.
(D) lysosome.

Q27 Sites of aerobic respiration and ATP synthesis in eukaryote is:
(A) endoplasmic reticulum.
(B) chloroplast.
(C) mitochondria.
(D) golgi complex.

Q28 Given below are two statements:
Statement I: The cell theory states that all living organisms are composed of cells and products of cells.
Statement II: Anton Von Leeuwenhoek first saw and described a live cell.
In the light of the above statements, choose the most appropriate answer from the options given below:
(A) Statement I is correct but Statement II is incorrect.
(B) Statement I is incorrect but Statement II is correct.
(C) Both Statement I and Statement II are correct.
(D) Both Statement I and Statement II are incorrect.

Q29 Identify (A) and (B) in the given figure and select the **correct** option.



(A) A- Grana thylakoid; B-Stroma
(B) A- Stroma lamella; B-Granum
(C) A-Granum; B-Stroma
(D) A-Stroma; B-Granum

Q30 Which of the following statement(s) are **not correct**?
A. Quasi-fluid nature of lipid enable lateral movement of protein within the overall bilayer.
B. Ribosomes composed of ribonucleic acid (RNA) and proteins.
C. Algae have cell wall, made of cellulose, galactans, mannans and minerals like calcium carbonate.
D. The membrane of the thylakoids enclose a space called stroma.
Choose the most appropriate answer from the options given below:
(A) A and C only
(B) B and D only
(C) D only
(D) B, C and D only

Answer Key

Q1	C
Q2	D
Q3	A
Q4	C
Q5	D
Q6	C
Q7	C
Q8	D
Q9	C
Q10	D
Q11	D
Q12	D
Q13	C
Q14	D
Q15	B
Q16	D
Q17	C
Q18	D
Q19	A
Q20	C
Q21	D
Q22	C
Q23	D
Q24	D
Q25	D
Q26	C
Q27	C
Q28	C
Q29	B
Q30	C

Hints & Solutions

Note: scan the QR code to watch video solution

Q1 Text Solution:

(C)

Axoneme	Core of Cilia
Spindle fibres	Formed by centriole
Cytoskeleton	Provide mechanical support
Aleuroplasts	Store proteins

[New NCERT Class-11th Page 98,99,100]

Video Solution:

Q2 Text Solution:

(D)

Within the cell, ribosomes are found not only in the cytoplasm but also within the two organelles – chloroplasts (in plants) and mitochondria and on rough ER.

(New NCERT Class 11th Page No. 88)

Video Solution:

Q3 Text Solution:

(A)

Ribosomes are organelle that are found in cytoplasm as well as within some organelle such as mitochondria and chloroplast.

(New NCERT Class 11th Page No. 99)

Video Solution:

Q4 Text Solution:

(C)

The axoneme usually has nine doublets of radially arranged peripheral microtubules, and a pair of centrally located microtubules. Such an arrangement of axonemal microtubules is referred to as the 9+2 array.

(New NCERT Class 11th Page No.)

Video Solution:

Q5 Text Solution:

(D)

The endomembrane system includes endoplasmic reticulum (ER), golgi complex, lysosomes and vacuoles. Since the functions of the mitochondria, chloroplast and peroxisomes are not coordinated with the above components, these are not considered as part of the endomembrane system.

(New NCERT Class 11th Page No. 95)

Video Solution:

Q6 Text Solution:

(C)

Centrioles	Perpendicular to each other
Chromoplasts	Possess coloured pigments

Leucoplasts	Colourless
Cytoskeleton	Proteinaceous filamentous network

(New NCERT Class 11th Page No.94,99,100)

Video Solution:

Q7 Text Solution:

(C)

In mature plant cell, the secondary wall is formed on the inner (towards membrane) side of the cell and the outermost layer is primary cell wall. The middle lamella is a layer mainly of calcium pectate which holds or glues the different neighbouring cells together. Middle lamella is present between primary cell walls of different neighbouring cells.

[New NCERT Class 11th - Page no 94]

Video Solution:

Q8 Text Solution:

(D)

Within the cell, ribosomes are found not only in the cytoplasm but also within the two organelles – chloroplasts (in plants) and mitochondria and on rough ER.

[New NCERT Class-11th Page- 88]

Video Solution:

Q9 Text Solution:

(C)

The eukaryotic ribosomes are 80S while the prokaryotic ribosomes are 70S.

[New NCERT Class 11th Page 98]

Video Solution:

Q10 Text Solution:

(D)

Pigments are present in plastids such as chloroplast and chromoplast. Chlorophyll pigments are present in the thylakoids in chloroplast.

[New NCERT Class 11th Page- 97 and 98]

Video Solution:

Q11 Text Solution:

(D)

The eukaryotic ribosomes are 80S while the prokaryotic ribosomes are 70S. Fungi and Protista are eukaryotes.

[New NCERT Class 11th Page 98]

Video Solution:

Q12 Text Solution:

(D)

Stromal lamellae	Connect intergranal thylakoids
Thylakoids	Flattened membranous sacs
Centriole	Cartwheel organisation

Nucleoplasm	Matrix of nucleus

[New NCERT Class 11th Page No. 98 & 100]

Video Solution:

Q13 Text Solution:

(C)

In eukaryotic cells there is an extensive compartmentalisation of cytoplasm through the presence of membrane bound organelles. As membrane bound organelles are absent in prokaryotes, they do not have intracellular compartments.

[New NCERT Class 11th Page-91]

Video Solution:

Q14 Text Solution:

(D)

The interphase nucleus (nucleus of a cell when it is not dividing) has highly extended and elaborate nucleoprotein fibres called chromatin. Chromatin contains DNA and some basic proteins called histones, some non-histone proteins and also RNA.

[New NCERT Class 11th Page – 100, 101]

Video Solution:

Q15 Text Solution:

(B)

Golgi bodies consist of many flat, disc-shaped sacs or cisternae.

[New NCERT Class 11th Page-95]

Video Solution:

Q16 Text Solution:

(D)

Many membrane bound minute vesicles called microbodies that contain various enzymes, are present in both plant and animal cells.

[New NCERT Class 11th Page- 102]

Video Solution:

Q17 Text Solution:

(C)

Chloroplasts	Contain chlorophyll and carotenoid pigments
Cristae	Mitochondrial infoldings
Proteinaceous hub	Centriole
Plasmodesmata	Absent in animal cell

[New NCERT Class 11th Page 94,97,98,100]

Video Solution:

Q18 Text Solution:

(D)

The isolated lysosomal vesicles have been found to be very rich in almost all types of hydrolytic enzymes.

[New NCERT Class 11th Page-96]

Video Solution:

Q19 Text Solution:

(A)

ER divides the intracellular space into two distinct compartments, i.e., luminal (inside ER) and extra luminal (cytoplasm) compartments.

[New NCERT Class 11th Page-95]

Video Solution:

Q20 Text Solution:

(C)

In chloroplast, thylakoids are arranged in stacks like the piles of coins called grana (singular: granum) or the intergranal thylakoids. These not found in mitochondria.

[New NCERT Class 11th Page-98]

Video Solution:

Q21 Text Solution:

(D)

Nuclear envelope consists of two parallel membranes with a space between called the perinuclear space. The outer membrane usually remains continuous with the endoplasmic reticulum and also bears ribosomes on it. The nuclear matrix or the nucleoplasm contains nucleolus and chromatin.

[New NCERT Class 11th Page-100]

Video Solution:

Q22 Text Solution:

(C)

In eukaryotes, mitochondria are the site of aerobic respiration while in prokaryotes, mesosomes are involved in respiration.

[New NCERT Class 11th Page-91]

Video Solution:

Q23 Text Solution:

(D)

Cilia (sing.: cilium) and flagella (sing.: flagellum) are hair-like outgrowths of the cell membrane.

[NEW NCERT Class-11th Page-99]

Video Solution:

Q24 Text Solution:

(D)

Single membrane-Vacuole, lysosomes, endoplasmic reticulum. Double membrane-Mitochondria.

[New NCERT Class 11th Page No. 95, 96, 97]

Video Solution:

Q25 Text Solution:

(D)

- The pili are elongated tubular structures present in bacteria.
- The fimbriae are small bristle like fibres sprouting out of the bacterial cell.

[New NCERT Class 11th Page No. 91]

Video Solution:

Q26 Text Solution:

(C)

The smooth endoplasmic reticulum is the major
site for synthesis of lipid.

[New NCERT Class 11th Page No. 95]

Video Solution:

Q27 Text Solution:

(C)

Mitochondria are the sites of aerobic respiration. They produce cellular energy in the form of ATP, hence they are called 'power houses' of the cell.

[New NCERT Class-11th Page-97]

Video Solution:

Q28 Text Solution:

(C)

- The cell theory states that all living organisms are composed of cells and products of cells.
- Anton Von Leeuwenhoek first saw and described a live cell.

[New NCERT Class 11th Page No. 87, 88]

Video Solution:

Q29 Text Solution:

(B)

A -Stroma lamellae ;Flat membranous tubules called the stroma lamellae connecting the thylakoids
of the different grana.
B-Granum;Thylakoids are arranged in stacks like the piles of coins called
grana (singular: granum)

[New NCERT Class 11th Page No. 98]

Video Solution:

Q30 Text Solution:

(C)

The membrane of the thylakoids enclose a space called a lumen.

[New NCERT Class 11th Page]

Video Solution: