



BIOLOGY

BOOKS - ARIHANT NEET BIOLOGY (HINGLISH)

CELL: THE UNIT OF LIFE

Check Point 15 1

1. The father of cytology is

A. Robert Hooke

B. Nageli

C. Matthians Scheiden

D. Virchow

Answer: A



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2. Who proposed the theory that "cells arise only from the pre-existing cells"

A. Virchow

B. Leeuwenhoek

C. Robert Hooke

D. Schwann

Answer: A



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3. Which of the following is an exception to cell theory?

A. Angiosperms

B. WBCs

C. Viruses

D. Gymnosperms

Answer: C



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4. Mesokaryotic cells are different from eukaryotic cell in

A. lacking well-defined nucleus

B. lacking cell membrane

C. lacking histone proteins

D. Having DNA

Answer: C



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5. The middle lamella is the

A. outermost layer of cell wall

B. contains an enzyme enolase

C. exists as a cementing layer between cell
wall of neighbouring cells

D. Both (a) and (c)

Answer: D



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6. The fruit softens and ripens due to

A. conversion of starch from sugar

B. jelly formation of an acid pH

C. incorporation of pectate in the middle lamella

D. dissolution of middle lamella

Answer: D



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7. The primary cell wall is composed of

A. 8-10% cellulose and 60% hemicellulose

B. 2-5% cellulose and 50% hemicellulose

C. 10-15% starch and 80% galactose

D. 7-18% glucose and 50% hemicellulose

Answer: B



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8. The living component of a cell wall is

A. middle lamellae

B. pit pair

C. secondary cell wall

D. plasmodesmata

Answer: D



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9. Cell wall

A. provides mechanical support

B. acts as barrier to pathogens

C. maintains the shape of plant

D. all of the above

Answer: D



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10. The term plasmalemma was coined by

A. Negali

B. C cramer

C. Plower

D. Clowes

Answer: C



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11. Plasma membrane has

A. phospholipid, extrinsic and intrinsic
proteins

B. no proteins, glycolipids and
phospholipids

C. histone proteins and lipoproteins

D. None of the above

Answer: A



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12. In a cell membrane, peripheral proteins

A. lie on the surface of membrane

B. buried in the membrane

C. lie inside the membrane

D. None of the above

Answer: A



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13. In a cell membrane, integral proteins are

A. partially or totally buried in the
membrane

B. partially attached to the surface of the
membrane

C. permanently attached to the outer surface of the membrane

D. temporarily attached to the surface of the membrane

Answer: A



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14. The main carbohydrates found in cell membrane are

A. mucopolysaccharide

B. fructose

C. oligosaccharides (sialic acid)

D. Both (b) and (c)

Answer: C



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15. According to 'sandwich model' the thickness of the cell membrane is about

A. 20 Å

B. 75 Å

C. 15 Å

D. 10 Å

Answer: B



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16. In prokaryotes, the function of cholesterol in plasma membrane is taken over by

A. glycoproteins

B. hopanoides

C. fatty acids

D. glycerol

Answer: B



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17. Transfer of a lipid molecule from one side of the bilayer to the other represents

A. flipflop motion

B. flexing motion

C. radial motion

D. rotation

Answer: A



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18. Cell drinking is also known as

A. endocytosis

B. pinocytosis

C. facilitated transport

D. phagocytosis

Answer: B



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19. The site for cell recognition is

A. protein part of glycoproteins

B. oligosaccharide of glycoproteins

C. both carbohydrate and protein

components of glycoprotein

D. lipid portion of glycoproteins

Answer: B



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20. The important functions of the plasma membrane include

A. transport of the molecules

B. cell recognition

C. secretion

D. all of the above

Answer: D



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Check Point 15 2

1. Yolk bodies, lipid droplets, secretory granules, pigments, etc., constitute the

A. living part of a cell

B. non-living part of a cell

C. protoplast

D. none of these

Answer: B



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2. Which of the following possess an incipient of false nuclei?

A. Mature RBC

B. Bacteria

C. Blue-green algae

D. All of these

Answer: D



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3. In nucleus, nuclear pores are formed by the

A. absence of nuclear membrane

B. breakage of nuclear membrane

C. fusion of nuclear membranes

D. movement of cytoplasm through nuclear
membrane

Answer: C



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4. Nucleolus was discovered by

A. fontana

B. schleiden

C. Altmann

D. Robert brown

Answer: A



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5. Nucleolus is formed from specific sites on chromosomes known as....

A. nucleolar reorganising region

B. nucleus forming region

C. nucleolar organiser region

D. none of these

Answer: C



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6. Heterochromatin

A. is involved in protein synthesis

B. is compactly coiled region

C. have less DNA

D. Both (a) and (c)

Answer: B



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7. Which of the following is incorrect for euchromatin?

A. They are loosely coiled regions

B. they are more stable

C. it stains less deeply

D. They contain more DNA

Answer: D



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8. The minimum chromosome number 2 is found
in

A. *Ascaris megalocephala*

B. *Haplophysalis gracillius*

C. Ophioglossum reticulatum

D. None of these

Answer: B



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9. The outermost covering or sheath of chromosome is known as

A. pellicle

B. membrane

C. matrix

D. none of these

Answer: A



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10. Non-stainable region of a chromosome is known as

A. centromere

B. Primary constriction

C. Both (a) and (b)

D. secondary constriction

Answer: C



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11. The tips of chromosomes are known as

A. telomeres

B. centromere

C. chromomere

D. none of these

Answer: A



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12. According to nucleosome model, chromatin consists of

A. non-histone proteins and DNA

B. histone proteins and DNA

C. RNA and histone protein

D. DNA and acidic proteins

Answer: B



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13. Polytene chromosome was first reported by

A. EG balbiani

B. Emil Heitz

C. Han bauer

D. Both (b) and (c)

Answer: A



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14. Polytene chromosomes are also known as

A. neoteny

B. polytenisation

C. chromoteny

D. haploidy

Answer: B



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15. Puffs of polytene chromosomes are also known as

A. Balbiani rings

B. bands

C. chiasmata

D. None of these

Answer: A



16. Lampbrush chromosomes were first seen by

A. Ruckert

B. Balbiani

C. Flemming

D. Robert Hooke

Answer: C



17. Lampbrush chromosome is

- A. ery elastic in nature
- B. a synaped chromosome
- C. gint chromosomes
- D. polytene chromosomes

Answer: D



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18. Sex chromosomes are also known as

A. allosomes

B. somatic chromosome

C. upto 5000μ in length

D. all of these

Answer: A



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19. X and Y-chromosomes in humans are

A. idiosomes

B. sex chromosomes

C. heterosomes

D. all of these

Answer: D



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20. karyotyping helps in detection of

A. evolutionary relationships

B. chromosomal abberation

C. primitive features of an organism

D. all of the above

Answer: D



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Check Point 15 3

1. The cell organelle involved in cellular respiration is _____

A. mitochondria

B. nucleus

C. chloroplast

D. ribosome

Answer: A



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2. The ability to change shape present in mitochondria is called

A. totipotency

B. conformation

C. pleomorphism

D. polymorphism

Answer: C



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3. The enzymes of Krebs' cycle are present in the mitochondrial

A. matrix

B. cristae

C. inner membrane

D. outer membrane

Answer: A



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4. Plastids are absent in

A. fungi

B. some bacteria

C. multicellular animals

D. all of these

Answer: D



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5. During fruit ripening, chloroplast changes into_____

A. amyloplast

B. aleuroplast

C. elaioplast

D. chromoplast

Answer: D



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6. The colourless plastids with stored nutrients are

A. phaeoplasts

B. chloroplasts

C. chromoplasts

D. leucoplasts

Answer: D



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7. chloroplast and mitochondriia both possess

A. DNA

B. single membrane

C. cristae

D. none of these

Answer: A



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8. Which of the following is membraneless cell organelle?

A. Mitochondrion

B. Ribosome

C. chloroplast

D. ER

Answer: B



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9. Svedberg (S) unit is a measure of

A. RNA content

B. size

C. protein content

D. activity of ribosome

Answer: B



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10. Membrane-bound ribosomes are involved in the synthesis of

A. secretory proteins

B. peroxisomal proteins

C. nuclear proteins

D. mitochondrial proteins

Answer: A



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Check Point 15 4

1. The term endoplasmic reticulum was used by

A. Golgi

B. Altmann

C. porter and kallmann

D. robertson

Answer: C



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2. What is true about endoplasmic reticulum?

A. ER membrane is 80-100 Å

B. ER consists of 70% phospholipids

C. ER vesicles are free of ribosomes

D. All of the above

Answer: D



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3. Detoxification of drugs in liver is carried out by

A. SER

B. free-ribosomes

C. RER

D. hydrophobic interaction

Answer: A



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4. A modified form of SER found in striated muscles is

A. neoplasm

B. dictyoplasmic reticulum

C. sarcoplasmic reticulum

D. desmotubule

Answer: C



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5. The single stack of Golgi apparatus found in plants and fungi is

A. plasmodesmata

B. lomasome

C. desmotubule

D. dictyosome

Answer: D



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6. Golgi apparatus is rich in_____

A. protein and phospholipids

B. DNA and proteins

C. lipids and DNA

D. All of these

Answer: A



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7. The organelle responsible for supply of glycosylated molecules to plasma membrane is

A. Golgi complex

B. mitochondria

C. ribosomes

D. peroxisomes

Answer: A



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8. Golgi apparatus is the important site
modification of lipids and proteins into

A. amino acids

B. glycolipids and glycoproteins

C. DNA and RNA

D. All of these

Answer: B



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9. The term 'suicidal bag' is applicable to a class of cell organelle called

A. Golgi apparatus

B. lysosomes

C. microsomes

D. peroxisomes

Answer: B



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10. When a food containing phogosome fuses with an enzyme containing lysosome _____ is formed.

A. Secondary lysosome

B. Primary lysosome

C. Vacuole

D. Residual body

Answer: A



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11. Autophagy and heterophagy may occur simultaneously in a single vesicle known as

A. amphisome

B. mesosomes

C. food vacuole

D. residual vesicle

Answer: A



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12. A giant lysosome that helps in penetration of sperms into egg is _____

A. Cathepsin-D

B. Primary lysosome

C. Acrosome

D. Amblyosome

Answer: C



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13. Which of the following functions is associated with peroxisomes?

A. Oxidation of amino acids

B. peroxidation

C. Light generation in fire flies

D. all of these

Answer: D



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14. Which of the following is stored by aleurone grains?

A. Glycogen

B. Fats

C. Starch

D. Proteins

Answer: D



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15. The term 'centrosome' was introduced by

A. Robert Kock

B. Boveri

C. Zernike

D. Robert Brown

Answer: B



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16. The radiating threads or rays developed by centriole during cell division constitute

A. aster

B. filaments

C. flagella

D. hooks

Answer: A



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17. A criss-cross network of interconnected filaments and tubules is called

A. lysosome

B. microbody

C. cytoskeleton

D. chromosomes

Answer: C



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18. Microfilaments are composed of a protein called

A. tubulin

B. actin

C. Keratin

D. haemoglobin

Answer: B



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19. The diameter of intermediate filament is

A. 15 nm

B. 6 nm

C. 10 nm

D. 5-7 nm

Answer: C



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20. In cilia and flagella central sheath is connected to peripheral tubules by means of

A. central microtubule

B. microtubule doublets

C. radial spokes

D. interdoublet bridges

Answer: C



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Check Point 15 5

1. The father of microscopy is_____

A. Robert brown

B. Koliker

C. Anton van Leeuwenhoek

D. none of these

Answer: C



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2. The ability of an optical system to form separable images of close objects called its

A. magnifying power

B. distinguishing power

C. resolving power

D. video power

Answer: C



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3. A fluorescence microscope is used to

A. obtain structure of DNA

B. increase resolving power

C. identify microbes in tissues

D. study ultrastructural details

Answer: C



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4. Fritz-Zernike invented the

A. TEM

B. SEM

C. fluorescent microscope

D. phase-contrast microscope

Answer: D



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5. One commonly used fluorescent dye is

- A. acid fuchsin
- B. haematoxylin
- C. acridine orange
- D. sudan II

Answer: C



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6. An instrument used for obtaining extremely thin sections for microscopy is

A. diamond knife

B. microtome

C. meat slicer

D. tissue slicer

Answer: B



7. Cell fractionation involves

- A. centrifugation
- B. homogenation
- C. Both (a) and (b)
- D. microtomy

Answer: C



8. ion exchange chromatography is used for

A. purification of insulin

B. for separating mixture of tissue lipids

C. for separation of mRNA

D. high separation of mRNA

Answer: A



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9. The chromatography used to separate substances that can be vapourised is_____

A. gas chromatography

B. paper chromatography

C. gel filtration chromatography

D. thinlayer chromatography

Answer: A



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10. The arrangement of atoms in a molecule can be studied using

- A. centrifugation
- B. histochemistry
- C. spectrophotometer
- D. X-ray crystallography

Answer: D



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11. X-ray crystallography was discovered by

- A. Max perutz
- B. Knoll ruska
- C. John kendrew
- D. both (a) and (c)

Answer: D



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12. Fungal hyphae can be specifically stained by

A. methylene blue

B. sudan IV

C. ruthenium red

D. Janus green

Answer: A



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13. Fatty substances are stained using

A. Benedict's solution

B. sudan black

C. ruth enion

D. basic fuchsin

Answer: B



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14. The instrument used I spectrophometry is

A. spectrophotometer

B. microtome

C. tracer

D. None of these

Answer: A



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15. Flagella of prokaryotic cell are

A. single-stranded

B. without differentiation of axoneme

C. 11-stranded

D. Both (a) and (b)

Answer: D



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**Chapter Exercises A Taking It Together Assorted
Questions Of The Chapter For Advanced Level
Practise**

1. Which one of these is not a eukaryote ?

A. Euglena

B. Anabaena

C. Spirogyra

D. Agaricus

Answer: B



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2. Which of the following stains is not used for staining chromosomes ?

A. Basic fuchsin

B. Safranin

C. Methylene blue

D. Carmine

Answer: B



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3. Who proposed the fluid mosaic model of plasma membrane?

A. Camillo Golgi

B. Schleiden and Schwann

C. Singer and Nicolson

D. Robert Brown

Answer: C



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4. What is a tonoplast

- A. Outer membrane of mitochondria
- B. Inner membrane of chloroplast
- C. Membrane boundary of the vacuole of
plant cells
- D. Cell membrane of a plant cell

Answer: C



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5. The stain used to visualise mitochondria is

A. fast green

B. safranin

C. acetocarmine

D. janus green

Answer: D



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6. Cellular totipotency is demonstrated by

A. Only gymnosperms

B. All plant cells

C. All eukaryotic cells

D. only bacterial cells

Answer: B



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7. Transmembranes proteins are

A. glycocalyx

B. intrinsic protein

C. extrinsic protein

D. tunnel protein

Answer: B



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8. A membrane is held together primarily by

A. hydrophobic attractions

B. ionic bonds

C. hydrophilic attractions

D. covalent bonds

Answer: A



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9. Non-living substances of a cell are collectively known as

A. cytoplasm

B. mesoplasm

C. deutoplasm

D. plasma gel

Answer: C



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10. The nuclear pores are the passage for the movement of

A. RNA molecules

B. protein molecules

C. Both (a) and (b)

D. None of these

Answer: C



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11. Nucleolus is found in

A. reticulocytes

B. yeast

C. undifferentiated embryonic cells of
amphibians

D. plant cells

Answer: D



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12. The term heterochromatic was given by

A. Darlington

B. Morgan

C. hammerling

D. Emil Heitz

Answer: D



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13. The chromosome was first of all reported
by

A. Nageli

B. Waldeyer

C. Strasburger

D. Flemming

Answer: A



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14. Organisms with large number of chromosomes are

A. polyploid

B. haploid

C. diploid

D. tetraploid

Answer: A



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15. Chromatid is

A. one half of chromosome

B. haploid

C. complete chromosome

D. duplicate chromosome

Answer: A



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16. L-shaped chromosomes are called

" " Or

When the chromosome has a centromere nearer to one end of the chromosome resulting into one shorter and one longer arm, the chromosome is termed as

A. sex chromosome

B. acrocentric

C. telocentric

D. submetacentric

Answer: D



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17. Chemically the chromosome consists of

A. Histone proteins

B. non-histone proteins

C. DNA

D. all of these

Answer: D



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18. Histone proteins are rich in amino acids

A. lysine

B. arginine

C. Both (a) and (b)

D. proline

Answer: C



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19. The two parts of lampbrush chromosome is

A. main axis and bands

B. chromatids and bonds

C. main axis and loops

D. bands and loops

Answer: C



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20. Polytene chromosomes are also known as

A. unistranded

B. bistranded

C. multistranded

D. none of these

Answer: C



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21. Ribosomes are so called because of high

- A. ribose content
- B. RNA content
- C. both (a) and (b)
- D. None of these

Answer: B



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22. Which of the following act as garbage disposal system of the cell ?

A. Peroxisomes

B. Golgi complex

C. Phagosomes

D. Lysosomes

Answer: D



23. Lysosomes contain a rich repertoire of

- A. hydrolases
- B. isomerases
- C. transferases
- D. oxido-reductases

Answer: A



24. The filaments that specialise in moving organelles are

A. microfilaments

B. intermediate filaments

C. actin

D. microtubules

Answer: D



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25. Which of the following is not a characteristic of prokaryotic cell?

A. Circular DNA

B. Mesosomes

C. Membrane bound organelles

D. Photosynthetic membrane system

Answer: C



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26. Dark field microscopy that is used to observe bacteria makes use of

A. no light

B. visible light

C. invisible infrared

D. invisible UV-light

Answer: B



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27. In interference microscope, the source of light is

A. beam of electrons

B. daylight

C. ultraviolet rays

D. None of these

Answer: B



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28. The prerequisite for electron microscope is

A. vacuum

B. reflector

C. source of light

D. living material

Answer: A



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29. Cellulose is stained blue with

A. eosin

B. phloroglucinol

C. chlor-zinc iodine

D. methylene blue

Answer: C



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30. Which of the following dyes is best suited for staining lignin?

A. Basic fuschsine

B. safranine

C. methylene blue

D. Phloroglucinol

Answer: D



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31. Two-dimensional polyacrylamide gel electrophoresis was developed by

A. Maizel

B. Raymon

C. Martin and synge

D. patrick O' farrel

Answer: D



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32. Continuity of cytoplasm from cell is maintained through cytoplasmic connection in plants called

A. ER

B. tight junctions

C. gap junctions

D. plasmodesmata

Answer: D



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33. A phospholipid molecule is amphipathic and produce two layers coming in contact with H_2O . The head of phospholipid molecule is

- A. at and angle of 40°
- B. towards the outer side
- C. between the surfaces
- D. embedded in protein molecules

Answer: B



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34. The transport of polar molecules across the cell membrane requires

- A. an ion of positive charge
- B. hydrophilic carrier ion
- C. hydrophobic carrier ion
- D. a carrier protein

Answer: D



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35. In a cell that is not dividing, the chromosomes are visible as a tangle of fine threads called

A. microtubules

B. chromatin

C. microfilaments

D. nucleotin

Answer: B



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36. In plants, maximum number of chromosomes ($2n = 1262$) are found in

A. *Ophioglossum reticulatum*

B. *Haplopappus gracillis*

C. *Saccharum officinarum*

D. None of these

Answer: A



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37. An angiospermic plant with minimum number of chromosomes is

A. *Haplopappus gracillis*

B. *Ophioglossum reticulatum*

C. *Asparagus ramosus*

D. *Pisum sativum*

Answer: A



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38. Centromere is that part of chromosome where

- A. nucleoli are formed
- B. crossing over takes place
- C. chromatids are attached
- D. hicking occurs

Answer: C



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39. The part which does not take strain amongst the following is

A. chromatid

B. centromere

C. chromatin

D. chromomere

Answer: B



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40. Dicentric chromosomes have two centromeres because they possess an additional centromere named as

- A. neocentromere
- B. lethal centromere
- C. diffused centromere
- D. none of these

Answer: A



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41. In human, secondary constrictions II is found on chromosome

A. 1,2,7 and X

B. 1,10,13,16 and X

C. 12, 14, 17, 20 and X

D. 5,6,8 and Y

Answer: B



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42. Telomere prevents the attachment of one chromosome to

A. other chromosome

B. nuclear envelope

C. nucleolus

D. all of these

Answer: A



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43. The organs of dipterans from where polytene chromosomes have been reported

A. gut epithelium

B. malpighian

C. fat bodies

D. all of these

Answer: D



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44. Salivary gland chromosomes are also known as

- A. polytene chromosomes
- B. L-chromosomes
- C. lampbrush chromosomes
- D. autosomes

Answer: A



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45. A row of dense granules present in lampbrush chromosomes is known as

A. chromomeres

B. centromere

C. chiasmata

D. loops

Answer: A



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46. The highest number of mitochondria are present in

- A. parenchyma cells
- B. sieve tubes
- C. meristematic tissues
- D. None of these

Answer: C



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47. Mitochondria

- A. are sausage-shaped cell organelles
- B. lack electron transport chain
- C. are single membrane bound organelles
- D. are semiautonomous

Answer: D



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48. The outer membrane of mitochondria consists of transport channels called

A. transporter proteins

B. porin protein

C. H^+ -channels

D. aquaporins

Answer: B



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49. Cytoplasmic organelle having vitamin-E and vitamin- B_2 is

- A. chloroplast
- B. peroxisome
- C. mitochondrion
- D. none of these

Answer: C



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50. If, we separate the cell organelles of a living cell, which part should be alive?

A. Endoplasmic reticulum

B. chloroplasts

C. cell wall

D. ribosomes

Answer: B



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51. Which of the following is larger in size?

A. cpDNA

B. mtDNA

C. Viral DNA

D. All are same size

Answer: A



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52. Sedimentation coefficient or Svedberg unit is equal to

A. $1 \times 10^{-13} \text{ s}$

B. $1 \times 10^{-2} \text{ s}$

C. $1 \times 10^{-10} \text{ s}$

D. $1 \times 10^{-5} \text{ s}$

Answer: A



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53. Polyribosomes are aggregation of

A. ribosomes and rRNA

B. only rRNA

C. peroxisomes

D. several ribosomes held together by a
string of mRNA

Answer: D



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54. A structure found traversing the cells and discovered by porter, claude and fulham in 1945 is the

- A. Golgi apparatus
- B. Mitochondria
- C. endoplasmic reticulum
- D. lysosomes

Answer: C



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55. Peptide bond formation occurs in a cell organelle called

A. ribosomes and rRNA

B. smooth endoplasmic reticulum

C. peroxisomes

D. rough endoplasmic reticulum

Answer: A



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56. The site for steroidogenesis is rough endoplasmic reticulum

A. rough endoplasmic reticulum

B. ribosomes

C. smooth endoplasmic reticulum

D. polyribosomes

Answer: C



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57. Smooth endoplasmic reticulum is well developed in the cells which synthesise

- A. steroids
- B. protein molecules
- C. carbohydrates
- D. all of these

Answer: A



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58. Mechanical support, enzyme circulation, protein synthesis and detoxification of drugs are the function of

A. dictyosome

B. chloroplasts

C. ribosomes

D. ER

Answer: D



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59. The cytoskeleton in a cell is involved in many functions such as

- A. mechanical support
- B. motility
- C. maintenance of the shape
- D. all of the above

Answer: D



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60. Lomasomes are border organelles found in between cell wall and cell membrane. These are involved in

- A. cell elongation
- B. cell elaboration
- C. cell wall formation
- D. all of these

Answer: D



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61. Which one of the following is essential for cell wall formation?

A. Peroxisome

B. glyoxysome

C. lysosome

D. lomasome

Answer: D



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62. In a prokaryotic cell, the inclusion bodies

A. are not bounded by any membrane system

B. lie freely in the cytoplasm

C. both (a) and (b)

D. none of these

Answer: C



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63. A bundle of needle-shaped crystals of calcium oxalate in leaves, roots, fruits, etc. is known as

A. druses

B. raphids

C. stellate

D. spherophides

Answer: B



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64. The resolving power of electron microscope is ___times greater than that of a light microscope.

A. 100

B. 1 million

C. 1000

D. 10

Answer: B



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65. The resolution of microscope can be increased by

A. shortening the λ of visible source

B. increasing NA

C. both (a) and (b)

D. None of these

Answer: B



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66. The use of oil immersion can

- A. increase the value of refractive index
- B. decrease the value of refractive index
- C. increase the value of numerical aperture
- D. decrease the value of numerical aperture

Answer: C



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67. Arrangement of atoms in molecules can be determined by

A. phase contrast microscope

B. SEM

C. X-ray crystallography

D. cell fractionation method

Answer: C



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68. Phase contrast microscopy is

A. related to retardation and thickness of the object

B. based on light scattering and uses a dark field condenser

C. used for the study of living cells

D. the best method for studying non-living ultrasctructure.

Answer: C



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69. Electron microscope is used for

- A. counting microbes in a sample
- B. whole mount study
- C. separating constituents of mixture
- D. viewing ultrastructure of the cell

Answer: D



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70. A common characteristic feature of plant sieve tube cells and most of mammalian erythrocytes is the

- A. absence of mitochondria
- B. presence of cell wall
- C. presence of haemoglobin
- D. absence of nucleus

Answer: D



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71. Select one which is not true for ribosome

A. Made up of two subunits

B. form polysome

C. may attach to mRNA

D. have no role in protein synthesis

Answer: D



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72. Which of the following features is common to prokaryotes and many eukaryotes?

- A. chromosomes present
- B. cell wall present
- C. nuclear membrane present
- D. subcellular organelles present

Answer: B



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73. Which of the following is not true for a eukaryotic cell?

A. it has 80S type of ribosome present in the mitochondria

B. It has 80S type of ribosome present in the cytoplasm

C. mitochondria contain circular DNA

D. Membrane bound organelles are present

Answer: A



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74. Choose the incorrect answer regarding why should the material for electron microscopy be thin, dry and be kept in vacuum.

A. to get straight beam of electron

B. to avoid the collision of electrons with the atoms of oxygen and nitrogen

C. to avoid multiple scattering

D. to overcome the problem of isotropy and anisotropy

Answer: D



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75. Depth of an object can be studied through

- A. dark field microscope
- B. compound
- C. compound microscope
- D. phase contract microscope

Answer: D



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76. Which of the following is not a function of cytoskeleton in a cell?

- A. intracellular transport
- B. maintenance of cell shape and structure
- C. support of the organelle
- D. cell motility

Answer: A



77. Plastid differs from mitochondria on the basis of one of the following features. Mark the right answer

- A. presence of two layers of membrane
- B. presence of ribosome
- C. presence of chlorophyll
- D. presence of DNA

Answer: C



78. During ultracentrifugation of cell homogenate, which fraction would be separated at $10000g \times 20$ minutes?

- A. Mitochondria and lysosomes
- B. ribosomes and microsome
- C. nucleus and mitochondria
- D. endoplasmic reticulum

Answer: A



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79. In centrifugation, which of the following settles are the first sediment?

- A. Ribosome
- B. Mitochondria
- C. Nucleus
- D. None of these

Answer: C



80. Which of the following statements is not true for plasma membrane

A. It is present in both plant and animal

cell

B. Lipid is present as a bilayer in it

C. proteins are present intergrated as well

as loosely associated with the lipid layer

D. carbohydrate is never found in it

Answer: D



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81. Which of the following options is true for a secretory cell ?

A. Golgi apparatus is absent

B. Rough endoplasmic reticulum (RER) is easily observed in the cell

C. Only smooth endoplasmic reticulum

(SER) is present

D. secretory granules are formed in nucleus

Answer: B



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82. Which of the following development was most instrumental in enabling us to determine the function of mitochondria?

- A. Technique of autoradiography
- B. Technique of culturing bacteria
- C. The phase contrast microscope
- D. The bright field microscope

Answer: C



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83. Which of the following techniques is used to determine molecular weight of proteins?

- A. Affinity chromatography
- B. Thin layer chromatography
- C. Ion exchange chromatography
- D. Gel filtration chromatography

Answer: D



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84. For separating amino acids, which of the following types of chromatography is used?

A. Column chromatography

B. Ion exchange chromatography

C. Paper chromatography

D. Gel filtration chromatography

Answer: C



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85. Watson and Crick used_____technique for determining the double-helical structure of DNA.

- A. two-dimensional PAGE
- B. equilibrium sedimentation
- C. X-ray crystallography
- D. spectrophotometry

Answer: C



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86. Which of the following is not used in

A. C^{14}

B. O^{16}

C. S^{35}

D. P^{32}

Answer: B



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87. One of the important techniques used to study the synthesis of molecules and to trace the metabolic pathways or events in cells

A. calorimetry

B. autoradiography

C. zonal centrifugation

D. microspectrophotometry

Answer: B



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88. Which is the suitable technique to obtain correct information regarding the location and synthesis of new DNA?

A. Electron microscopy

B. X-ray crystallography

C. Immunoelectrophoresis

D. Use of radioactive precursors of DNA
and autoradiography

Answer: D



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89. DNA synthesis can be specifically measured by estimating the incorporation of radio labelled

A. adenine

B. uracil

C. thymidine

D. deoxyribose sugar

Answer: C



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90. The technique that counts and identifies cells and chromosomes is

- A. electrophoresis
- B. flow cytometry
- C. both (b) and (c)
- D. X-ray crystallography

Answer: B



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91. According to which model, a cell membrane consists of a phospholipid bilayer with a single continuous layer of protein molecules on either surface?

- A. sandwich model
- B. Lamellar theory
- C. Danielli and davson model
- D. all of the above

Answer: D



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92. Identify the incorrect statement.

A. Glycoprotein and glycolipids of plasma membrane facilitate cellular recognition and adhesion

B. the semipermeable membrane surrounding the vacuole is called tonoplast

C. gametes of plants are without cell wall

D. ingestion of solid particles is called
pinocytosis

Answer: D



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93. Which of the following statements regarding karyotheca is incorrect?

A. Perinuclear space is 200-400Å thick

- B. Outer and inner membrane of nucleus possess ribosomes
- C. Inner membrane has a dense layer called nuclear lamina
- D. nuclear pore complex is consist of a pore and two rings called annuli.

Answer: B



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94. Read the given statements and identify the incorrect statement.

A. Nucleus controls cytoplasm functioning

by sending out RNAs

B. The term protoplasm was coined by

Huxley

C. Nucleus was discovered by Robert Brown

in orchid root cells

D. Nuclear membrane often possesses attached ribosomes

Answer: B



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95. Which of the following is not a difference between euchromatin and heterochromatin?

A. Heterochromatin stains deeply while euchromatin lightly

B. Heterochromatin is more condensed than euchromatin

C. Heterochromatin is transcriptionally inactive while euchromatin is active

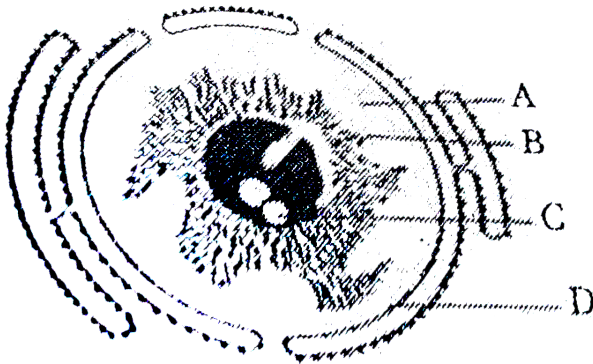
D. Heterochromatin lies close to the nucleolus while euchromatin to nuclear lamina.

Answer: D



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96. identify A, B, C and D in the given figure.



A. A-Nucleoplasm, B-nucleolus, C-nuclear pore, D-nuclear membrane.

B. A-Nucleolus, B-nucleoplasm, C-nuclear membrane. D-nuclear pore.

C. A-nuclear pore, B-nuclear membrane, C-nucleoplasm, D-nucleolus

D. A-nuclear membrane, B-nucleoplasm, C-nuclearpore, D-nuclear membrane.

Answer: A



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97. The correct match is

A. Central nucleus -Fat cells

B. peripheral nucleus-Embryonic cell

C. Nucleonema-Nucleolus

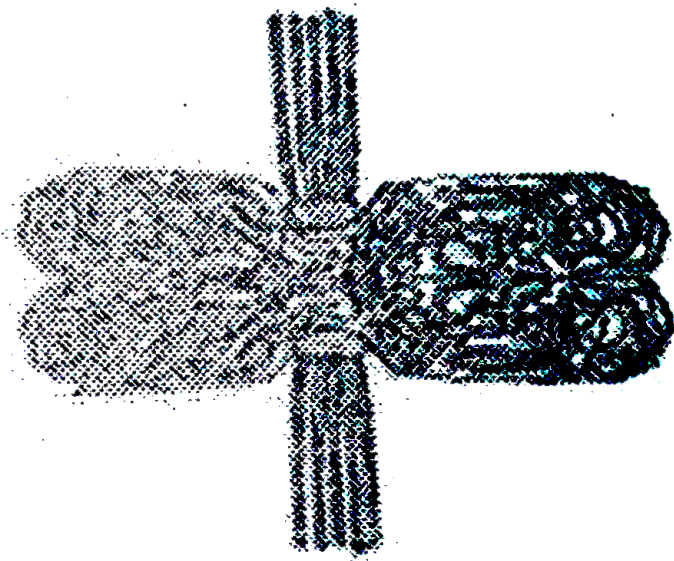
D. hammerling-Orchid cells

Answer: C



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98. Which of the following table refers correctly to the chromosome?



A. No. of centromere-1, No. of kinetochore-
2, No. of arms-2

B. No. of centromere-2, No. of kinetochore-
2, No. of arms-4

C. No. of centromere-1, No. of kinetochore-
2, No. of arms-4

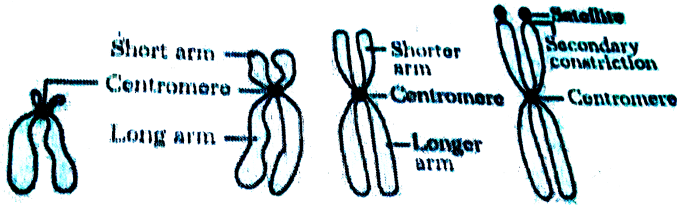
D. No. of centromere-2, No. of kinetochore-
1, No. of arms-4

Answer: C



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99. See the following figure and identify it.



A. A-Metacentric chromosomes, B-
 Submetacentric chromosomes, C-
 Acrocentric chromosomes, D-telocentric
 chromosomes

B. A-Submetacentric chromosomes, B-
 Metacentric chromosomes, C-Telocentric

chromosomes,

D-Acrocentric

chromosomes.

C. A-Acrocentric

chromosomes,

B-

Telocentric chromosomes, C-metacentric

chromosomes,

D-submetacentric

chromosomes

D. A-telocentric

chromosomes,

B-

Acrocentric

chromosomes,

C-

Submetacentric

chromosomes,

D-

metacentric chromosomes

Answer: D



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100. Semiautonomic genome system is present
in

- A. mitochondria and ribosomes
- B. mitochondria and chloroplast
- C. ribosomes and chloroplast
- D. golgi body and mitochondria

Answer: B



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101. All plastids have essentially the same structure because

- A. they have to perform the same function
- B. one type of plastids can differentiate into another type of plastids depending upon the requirements

C. all plastids have to store starch, lipids and proteins

D. they are localised in the aerial parts of the plants

Answer: B



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102. Choose the wrongly matched pair.

A. Amyloplasts-starch

B. Elaioplasts-Oils and fats

C. Proteinoplasts-proteins

D. Chromoplasts-colourless

Answer: D



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103. The pigment molecules of a chloroplast are located within its thylakoid membranes

- A. the space between the inner and outer membranes
- B. the inner membrane
- C. intrathylakoid spaces
- D.

Answer: A



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104. Oxysomes are submicroscopic particles present on the

A. surface of the inner membrane of mitochondrion

B. thylakoid membrane of chloroplasts

C. outer membrane of mitochondrion

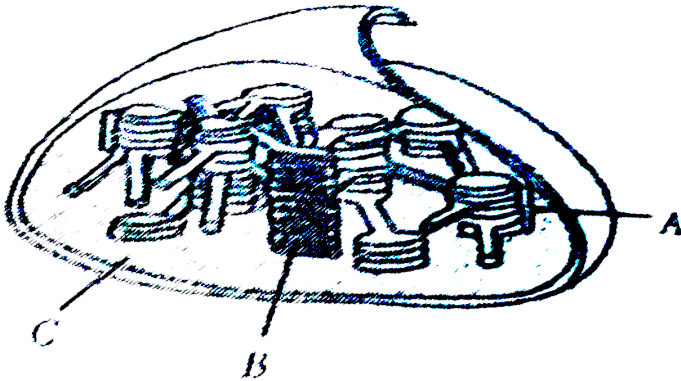
D. rough endoplasmic reticulum

Answer: A



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105. Find out the correct sequence of the labeling of the given figure.



A. A-outer membrane, B-Inner membrane,
C-Thylakoid.

B. A-Thylakoid, B-Granum, C-thylakoid space

C. A-Granum, B-thylakoid, C-stroma

D. A-Granum, B-Thylakoid, C-thylakoid space

Answer: C



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106. Which of the following statement is correct?

A. The genetic material of prokaryotes is not enclosed in a cell

- B. Ribosomes were discovered by palade in plant cells
- C. Ribosomes are DNA-protein complexes
- D. Balbiani's rings are found in polytene chromosomes.

Answer: D



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107. Which of the following statements are correct?

A. Ribosomes do not contains DNA.

B. Eukaryotic 80S ribosomes break into 50S
and 30S

C. Plasmodesmata are found as intercellular
junction between plant cells

D. Ribosomes were discovered by beadle
and tatum

Answer: A::C



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108. The proteins associated with ribosomes are

- A. negatively charged
- B. positively charged
- C. amphoteric
- D. none of these

Answer: B



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109. Select the false statement.

A. Ribosomes and centriole are non-membrane bound organelles of a cell

B. ribosomes are enveloped by a double membrane

C. Plasmodesmata are the cytoplasmic connections between plant cells

D. cell membrane is semipermeable or selectively permeable

Answer: B



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110. If the ribosomes of a cell are destroyed then

A. fats will not stored

B. proteins will not be formed

C. carbon assimilation will not occur

D. respiration will not take place

Answer: B



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111. Which types of lysosomes contribute to the ageing process?

- A. Primary lysosomes
- B. secondary lysosomes
- C. lysosomes
- D. autophagic vacuoles

Answer: C



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112. The compound microscope is based upon the principle that

- A. the image formed by one lens acts as object for second lens
- B. a single lens system magnifies all diameters of the object being viewed
- C. both (a) and (b)
- D. none of these

Answer: A



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113. The limit of resolution of an instrument

- A. varies directly with its resolving power
- B. varies inversely with its resolving power
- C. is equal to its resolving power
- D. is not related to its resolving power

Answer: C



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114. if a biochemical analysis of mitochondria is to be done, the best procedure would be to

A. plasmolyse the cells, filter it and take debris

B. select cells having large mitochondria

C. select cell and filter out the mixture

D. subject the cells to fractionation (centrifuge) and obtain mitochondria.

Answer: D



115. In recent years, considerable attention is being given to DNA protein interactions because the expression of genes is regulated through banding of specific proteins on the regulatory DNA sequences. This pattern of protein banding on DNA can be studied by

- A. light microscope
- B. ultracentrifugation
- C. electron microscope

D. X-ray crystallography

Answer: D



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116. Autoradiography technique is used to

A. find out the absorption maximum of

chlorophyll pigments

B. study photorespiration in certain plants

C. establish that the oxygen evolved during photosynthesis is by photolysis of water molecules

D. trace the path of carbon in photosynthesis

Answer: D



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117. Which of the following statements was not explained in the cell theory given jointly by schleiden and schwann?

A. All living organisms are composed of cells and their products

B. Formation of new cells

C. Cell is the structural and functional unit of living organisms

D. None of these

Answer: B



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118. Choose the correct statement.

A. Peripheral fibril of centriole is doublet

B. Axoneme is not covered by plasma membrane

C. Kinetochores are found on secondary constriction also

D. fungi possess unicisternal golgi

Answer: D



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119. Lysosomes are single membrane bound organelles. Which of the following statements is correct?

A. Contain 40-50 types of hydrolytic enzymes

B. Content has a pH of 8.5

C. Membrane is highly prone to self-digestion

D. All of the above

Answer: A



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120. Cis and trans face of golgi body are ___ and ___, respectively.

A. convex, concave

B. concave, convex

C. convex, convex

D. concave, concave

Answer: A



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121. Choose the correct statement.

- A. Ribophorins are proteins that attach ER membrane with ribosomes
- B. Y-chromosome is placed in group-C due to large size
- C. H3 is plugging protein
- D. SAT are regions where DNA content is highest

Answer: A



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122. How many of the given organelles have single membrane?

Ribosomes, centrioles, nucleolus, lysosomes, peroxisomes, vacuoles, golgi complex, ER

A. six

B. five

C. three

D. four

Answer: C



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123. How many of the given features are true for both endoplasmic reticulum and golgi complex? Presence of membrane, modification of proteins, endomembrane system, DNA, attached ribosomes, tubules and vesicles

A. four

B. six

C. five

D. three

Answer: A



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124. Choose the correct match.

- A. Lampbrush chromosome-
endoreduplication
- B. Polytene chromosomes- Bivalent
- C. Mitochondria-Oxysomes
- D. Free-ribosomes-Lysosomal proteins

Answer: C



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125. The organelle which consists of enzymes such as catalase, urease, oxidation, luciferase, etc., and involved in a waste process is _____.

A. peroxisomes

B. lysosomes

C. lomasomes

D. None of these

Answer: A



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126. Some scientists include lysosomes in microbodies but these can be differentiated due to

- A. their mode of formation
- B. their small size
- C. presence of enzymes
- D. all of the above

Answer: A



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127. Choose the incorrect match.

A. Active transport - Na^+ / K^+ ATPase.

B. Flip-flop-movement - protein

C. Heteropycnosis-Differential staining

D. Alphoid DNA-centromere

Answer: B



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128. How many of the given features are similar for both eukaryotic and prokaryotic cells?

Cell membrane, constituents of chromatin, mitochondria, cell wall with muramic acid, 70S ribosomes, porous nuclear membrane.

A. One

B. Two

C. Five

D. Three

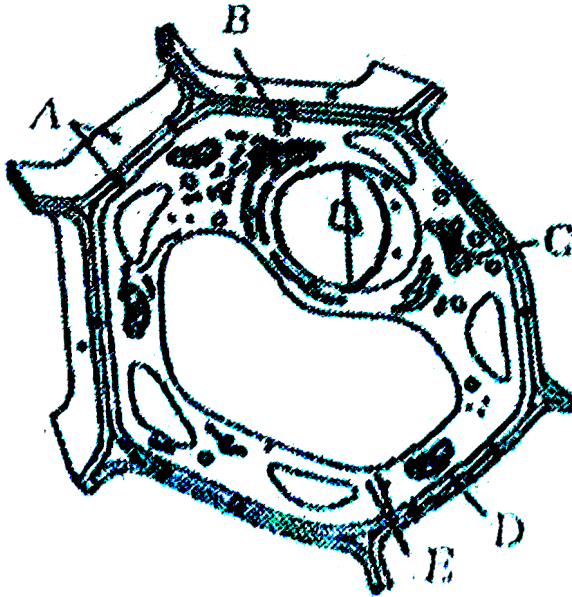
Answer: A



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129. The following diagram shows some of the missing structures in a plant cell (A-E). Identify

the structure.



A. A-plasmodesmata, B-rough endoplasmic reticulum, C-golgi apparatus, D-mitochondrion, E-ribosomes.

B. A-Desmosome, B-rough endoplasmic reticulum, C-golgi apparatus, D-

mitochondrion, E-Ribosomes.

C. A-plasmodesmata, B-smooth
endoplasmic reticulum, C-golgi
apparatus, D-mitochondrion, E-
ribosomes

D. A-Tight junction, B-Rough endoplasmic
reticulum, C-Golgi apparatus, D-
mitochondrion, E-Ribosomes.

Answer: C



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130. The eukaryotic genome differs from the prokaryotic genome because :

A. the DNA is complexed with histone in prokaryotes

B. the DNA is circular and single-stranded in prokaryotes

C. repetitive sequence are present in eukaryotes

D. the DNA in eukaryotes is linear and single-stranded

Answer: B



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131. The electron microscope differs from the ordinary microscope in having high resolving power due to the use of

A. electrons, which have a longer wavelength than ordinary light ray, as a source of illumination.

B. ultraviolet light as the source of illumination

C. fast electrons, which have a shorter wavelength than ordinary light ray, as a source of illumination

D. gamma rays as the source of illumination

Answer: C



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132. Why cannot the living cells be observed under electron microscopy?

- A. Tremendous voltage kills the cells
- B. cells get killed during the preparation of material

C. dehydration of cells is must to avoid

water vapour, which disturb the vacuum

D. all of the above

Answer: D



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133. Which of the following correctly explains mitochondrial function and results?

A. Oxidative phosphorylation,
dephosphorylation, metabolic water
production

B. Dephosphorylation, metabolic water
production, CO_2 production

C. Oxidative phosphorylation, metabolic
water production, CO_2 production

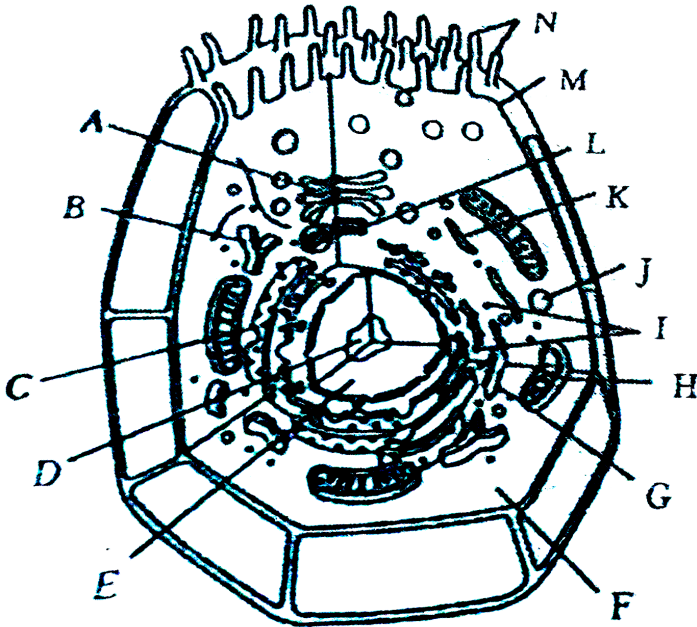
D. Oxidation phosphorylation,
dephosphorylation, CO_2 production.

Answer: C



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134. Correlate the given features of animals cells (I-V) with their respective parts (A-N)



I. Major site for synthesis of lipid.

II. Powerhouse of the cells.

III. Storehouse of digestive enzyme.

IV. Site of glycolysis.

V. Site for active ribosomal RNA synthesis.

A. I-G,II-H,III-E,IV-F,V-D

B. I-G,II-H,III-J,IV-F,V-D

C. I-B,II-H,III-J,IV-F,V-D

D. I-A,II-H,III-J,IV-F,V-D

Answer: B



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135. In view of the current status of our knowledge about the cell structure, which of the following statements about cell theory is correct?

A. The cell theory needed modification due to discovery of subcellular structures such as chloroplasts and mitochondria

B. The cell theory does not hold good, since all living organisms are not cellular in their organisation, e.g., virus

C. The cell theory in its modified form,
means that all living objects are made of
cells capable of reproducing

D. The cell theory means that all living
objects are made of cells, whether or not capable of
reproducing

Answer: C



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Chapter Exercises B Medical Entrances Special Format Questions Statement Based Question

1. The factors, which influence membrane fluidity are

I. cholesterol

II. Carbohydrates. ItBrgt III. Percentage of unsaturated fatty acids.

IV. Receptors.

A. II and IV

B. III and IV

C. Only I

D. I and III

Answer: D



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2. Which of the following are correct for inner mitochondrial membrane?

I. The electron transfer and ATP synthesising system are present in inner mitochondrial membrane.

II. It bears small granules called oxysomes.

III. It contains protein called porins.

IV. it contains less than 10% of the total protein of mitochondria.

A. I and IV

B. I and II

C. I,II and III

D. II and III

Answer: B



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3. The chloroplasts are believed to be bacterial endosymbionts because

I. they are centres of synthesis and metabolism of carbohydrates.

II. They have their own protein synthesising machinery.

III. It is bounded by two membranes.

IV. They are independent of nucleus.

A. Only III

B. I and III

C. II and III

D. Only II

Answer: C



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4. Endoplasmic reticulum

I. provides additional mechanical support to the cell by dividing and fluid content of the cell into compartments.

II. Is involved in secretion, storage and

packaging of materials.

III. Is found to be greatly involved in glycogen and glucose metabolism.

IV. takes part in sulphate metabolism.

A. I, II and III

B. Only III

C. I and IV

D. I and III

Answer: D



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5. Which of the following are cell inclusions?

I. Aleurone grains

II. Fat droplets

III. Crystals

IV. Vacuoles

A. I, II and III

B. I and III

C. III and IV

D. All of these

Answer: A



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6. Read the following statements and choose the option with all correct statement.

I. size of a cell depends upon nucleoplasmic index.

II. Occurrence of different type of tissues, organs and organ system results in division of labour.

III. 'Omnis cellula-e-cellula' was experimentally

demonstrated by Negeli.

IV. Viruses are an exception to cell theory.

A. I,II,III and IV

B. II and III

C. I,II and IV

D. None of the above

Answer: C



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7. Consider the following statement and choose the correct ones.

I. Yolk bodies, lipid droplets, pigments, etc, constitute the deutoplasm.

II. Leeuwenhoek experimentally proved the role of nucleus in control of heredity.

III. Cells that possess single nuclei are also called as coenocyte.

IV. nucleus occupies basal position in adipose tissues.

A. Only III

B. I and II

C. III and IV

D. None of these

Answer: A



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8. Read the following statements regarding microbodies and choose the incorrect statement.

I. peroxisomes were discovered in brain cells of

animals.

II. Sphaerosomes have affinity for fat stains.

III. Lomasomes take part in cell membrane formation.

IV. Glyoxysomes are involved in glycolysis.

A. I and II

B. I, III and IV

C. Only III

D. None of these

Answer: B



9. Which of the following statements are correct for the transmission electron microscope?

I. Electron beam pass through the specimen and an electromagnetic objective lens which magnifies the image.

II. A single electron beam is used throughout for the production of a magnifying image.

III. This microscope is especially useful in studying the surface structures of intact cells

and viruses.

IV. A living intact specimen can be used for viewing.

A. Only III

B. I and II

C. II and III

D. III and IV

Answer: B



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10. Chromatography

I. is employed for separation of constituents of mixture, and is based upon the principle of partition coefficient. It is used for separating molecules of a mixture under the influence of an applied electric field.

III. involved differential movement of each component through a stationary medium under the influence of a moving solvent.

IV. is used to detect amino acid variation in a number of human proteins.

A. Only III

B. I and IV

C. only IV

D. I and III

Answer: D



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11. Cell fractionation involves

I. homogenisation of cell constituents.

II. Subjecting the homogenate to centrifugal force.

III. Detection of slight variation of amino acids.

IV. Staining of structures of living cells.

A. Only II

B. I and II

C. III and IV

D. II and IV

Answer: B



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12. Fluorescence microscope

I. used to detect specific proteins or other molecules in cells and tissues.

II. Uses UV light with higher wavelength (3500-4000Å).

III. Is useful mainly for viewing highly ordered objects such as crystals.

IV. dependson changes in the speed of light for its functioning.

A. I and III

B. I and II

C. Only III

D. I and IV

Answer: B



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13. The chromosomes which do not take part in cell division are

I. L-chromosome

II. Acentric

III. Polycentric

IV. Dicentric

A. Only II

B. I and II

C. III and IV

D. Only I

Answer: B



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14. Which of the following are used to define the karyotype of a species

1. The number of chromosomes
2. The chromosome length
3. The positions of the centromeres

A. I,II and III

B. I and II

C. II and III

D. I and III

Answer: A



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15. Which of the following statement(s) is/are incorrect regarding the band region of polytene chromosome?

I. stains lightly with basic stain.

II. Absorbs ultraviolet light at 2600\AA .

III. Chromonemata is tightly packed.

IV. Stains intensely with basic stains.

A. Only I

B. II, III and IV

C. I, II and III

D. III and IV

Answer: C



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16. Different cells have different sizes. Arrange the following in an ascending order of their size.

I. Mycoplasma.

II. Ostrich eggs.

III. Human RBC.

IV. Bacteria

A. I, IV, III and II

B. I, II, III and IV

C. II, I, III and IV

D. III, II, I and IV

Answer: A



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Chapter Exercises B Medical Entrances Special Format Questions Match The Column

1. Match the followig columns.

Column I	Column II
A. Dictyosomes	1. Osmoregulation
B. Mitochondria	2. Photosynthesis
C. Vacuoles	3. Transport
D. Grana	4. Secretion
	5. Respiration

A. A-4,B-5,C-1,D-2

B. A-3,B-4,C-2,D-1

C. A-4,B-5,D-3,D-2

D. A-4,B-3,C-1,D-2

Answer: A



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2. Match the followig columns.

Column I	Column II
A. Karyolymp	1. Nucleolus
B. Ribonucleoprotein	2. Nucleus
C. Spindle fibre	3. DNA
D. Genes	4. Centrioles
E. Rough endoplasmic reticulum	5. Protein synthesis

A. A-1,B-3,C-2,D-4,E-5

B. A-4,B-2,C-3,D-5,E-1

C. A-2,B-1,C-4,D-3,E-5

D. A-1,B-2,C-3,D-4,E-5

Answer: C



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3. Match the followig columns.

Column I	Column II
A. Nucleolus	1. Lipid storage
B. Spherosomes	2. Detoxification
C. Peroxisomes	3. Transport of inacromolecules
D. Plasmodesmata	4. RNA synthesis

A. A-4,B-1,C-3,D-2

B. A-1,B-2,C-4,D-3

C. A-4,B-1,C-2,D-3

D. A-1,B-2,C-3,D-4

Answer: C



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4. Match the following columns.

Column I (Chromosomes)	Column II (Position of centromere)
A. Metacentric	1. At the tip
B. Submetacentric	2. Almost near the tip
C. Acrocentric	3. At the middle
D. Telocentric	4. Slightly away from the middle

A. A-1,B-3,C-2,D-4

B. A-4,B-3,C-2,D-1

C. A-1,B-2,C-3,D-4

D. A-3,B-4,C-2,D-1

Answer: D



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**Chapter Exercises B Medical Entrances Special
Format Questions Assertion And Reason**

1. Assertion- Rudolf Virchow stated 'Omnis cellula-e-cellula'.

Reason- Max Schultze proposed the 'protoplasm theory'.

A. Both assertion and Reason are true and reason is the correct explanation of assertion

B. Both assertion and reason are true, but reason is not the correct explanation of assertion

C. Assertion is true, but reason is false

D. Assertion is false, but reason is true

Answer: B



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2. Assertion- A cell membrane shows fluid behaviour.

Reason- A membrane is a mosaic or composite of diverse lipids and proteins.

A. Both assertion and Reason are true and reason is the correct explanation of assertion

B. Both assertion and reason are true, but reason is not the correct explanation of assertion

C. Assertion is true, but reason is false

D. Assertion is false, but reason is true

Answer: A



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3. Assertion- Fluid mosaic model was proposed by singer and nicholson.

Reason- The 'mosaic' is the intricate composite of proteins and lipids of the membrane.

A. Both assertion and Reason are true and reason is the correct explanation of assertion

B. Both assertion and reason are true, but reason is not the correct explanation of

assertion

C. Assertion is true, but reason is false

D. Assertion is false, but reason is true

Answer: B



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4. Assertion- Transmembrane proteins penetrate the lipid bilayer.

Reason- Extrinsic proteins are loosely bound to lipid layers.

A. Both assertion and Reason are true and reason is the correct explanation of assertion

B. Both assertion and reason are true, but reason is not the correct explanation of assertion

C. Assertion is true, but reason is false

D. Assertion is false, but reason is true

Answer: B



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5. Assertion- Chloroplast is a cell organelle.

Reason- An organelle is a distinct part of a cell, which has a particular structure and function.

A. Both assertion and Reason are true and reason is the correct explanation of assertion

B. Both assertion and reason are true, but reason is not the correct explanation of assertion

C. Assertion is true, but reason is false

D. Assertion is false, but reason is true

Answer: A



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6. Assertion- Germinating seeds show more mitochondria than dormant seeds.

Reason- Mitochondria are endosymbiotic in origin.

A. Both assertion and Reason are true and reason is the correct explanation of assertion

B. Both assertion and reason are true, but reason is not the correct explanation of assertion

C. Assertion is true, but reason is false

D. Assertion is false, but reason is true

Answer: B



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7. Assertion- The bands of polytene chromosomes become enlarged at certain regions to form puffs or Balbiani rings.

Reason- These enlarged bands are active genes and represent the site of RNA synthesis.

A. Both assertion and Reason are true and reason is the correct explanation of assertion

B. Both assertion and reason are true, but reason is not the correct explanation of assertion

C. Assertion is true, but reason is false

D. Assertion is false, but reason is true

Answer: A



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8. Assertion-Lampbrush chromosomes are very elastic in nature.

Reason- Lampbrush chromosomes are found in oocytes of invertebrates only.

A. Both assertion and Reason are true and reason is the correct explanation of assertion

B. Both assertion and reason are true, but reason is not the correct explanation of assertion

C. Assertion is true, but reason is false

D. Assertion is false, but reason is true

Answer: C



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**Chapter Exercises C Medical Entrances Gallery
Collection Of Questions Asked In Neet Various
Medical Entrance Exams**

1. A cell organelle containing hydrolytic enzymes is

A. lysosomes

B. microsome

C. ribosome

D. mesosomes

Answer: A



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2. Select the mismatched.

A. Gas vacuoles-green bacteria cell

B. large central vacuoles-animal cells

C. protists-Eukaryotes

D. mitochondria-eukaryotes

Answer: B



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3. Microtubules are the constituents of

A. spindle fibres, centrioles and cilia

B. centrioles, spindle fibres and chromatin

C. centrosome, nucleosome and centrioles

D. cilia, flagella and peroxisomes

Answer: A



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4. Mitochondria and chloroplast are

(a) Semi-autonomous organelles

(b) Formed by division of pre-existing organelles and they contain DNA but lack

protein synthesizing machinery

Which one of the following options is correct

- A. I is correct, but II is incorrect
- B. I is correct, but II is incorrect
- C. Both I and II are incorrect
- D. Both I and II are correct

Answer: B



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5. These types of vacuole contain hydrolases

A. Sap

B. Contractile

C. Food

D. Air

Answer: C



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6. In idiogram, chromosomes of an organism are arranged according to their

- A. increasing size
- B. decreasing size
- C. position of centromere
- D. number of chromosomes

Answer: B



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7. Pectin polysaccharides are present in

- A. cytoskeleton
- B. plasma membrane
- C. primary cell wall
- D. tertiary cell wall

Answer: C



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8. Protoplast lacks

A. cytoplasm

B. nucleus

C. mitochondria

D. cell wall

Answer: D



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9. Mitochondria perform all of the following functions except

A. nucleic acid synthesis

B. steroid synthesis

C. ATP synthesis

D. polysaccharide degradation

Answer: D



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10. The functions of peroxisome is

A. to convert H_2O_2 into H_2O and O_2

B. utilisation of O_2 gas

C. to break toxic molecules of a cell

D. all of the above

Answer: D



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11. GERL system of formed of

A. Golgi body, endoplasmic reticulum,

ribosome and lysosome

B. Golgi body, endoplasmic reticulum and
ribosome

C. Golgi body, endoplasmic reticulum and
ribosome

D. golgi body, ribosome and lysosome

Answer: B



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12. Smallest unit in the plant cell wall is

A. micelle

B. microfibril

C. Fibril

D. none of these

Answer: A



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13. Golgi complex is composed of

A. Cisternae, tubules and vacuoles

B. Cisternae, tubules and vesicles

C. Cisternae, vesicles and vacuoles

D. none of these

Answer: B



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14. 70S ribosomes are found in

A. eukaryotic cell

B. prokaryotic cell

C. mitochondria

D. Both (b) and (c)

Answer: D



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15. Match the following column.

Column I	Column II
A. Rough ER	1. Synthesis of glycoproteins
B. Smooth ER	2. Aerobic respiration
C. Mitochondria	3. Synthesis of lipids
D. Golgi apparatus	4. Protein synthesis

A. A-1,B-2,C-3,D-4

B. A-2,B-3,C-4,D-1

C. A-4,B-3,C-2,D-1

D. A-4,B-3,C-2,D-1

Answer: D



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16. One type of chromosome has middle centromere whereas the other has a terminal centromere. They are

A. metacentric and acrocentric

B. metacentric and telocentric

C. submetacentric and telocentric

D. telocentric and acrocentric

Answer: B



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17. Match the following column.

Column I	Column II
A. Thylakoids	1. Disc-shaped sacs in Golgi apparatus
B. Cristae	2. Condensed structure of DNA
C. Cisternae	3. Flat membranous sacs in stroma
D. Chromatin	4. Infoldings in mitochondria

A. A-4,B-3,C-1,D-2

B. A-3,B-4,C-1,D-2

C. A-3,B-1,C-4,D-2

D. A-3,B-4,C-2,D-1

Answer: B



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18. Cellular organelles with membranes are

A. nuclei, ribosomes and mitochondria

B. chromosomes, ribosomes and
endoplasmic reticulum

C. endoplasmic reticulum, ribosomes and
nuclei

D. lysosomes, golgi apparatus and
mitochondria.

Answer: D



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19. Ribosomes are essential for protein synthesis, but they are present in mitochondria and plastids, the sites of respiration and photosynthesis. What is the role of ribosomes in these organelles?

A. Ribosomes transport ATP formed in respiration and photosynthesis to

cytoplasm through ER

B. Subunits of some required proteins are synthesised in these organelles

C. Ribosomes transport RNA and DNA to cytoplasm

D. All of these

Answer: B



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20. Which one of the following is correct for transmembrane proteins in lipid bilayer

- A. They are absent in animal cells
- B. They act as channel proteins
- C. They are absent in plant cells
- D. they are only externally located.

Answer: B



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21. What kind of microscopy uses acridine orange?

A. Phase contrast

B. Fluorescence

C. Transmission microscope

D. scanning electron microscope

Answer: B



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22. In order to sediment free ribosomes, centrifugation required is

A. 300000 g

B. 50000 g

C. 12000 g

D. 800 g

Answer: A



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23. The following is generally used for creating density gradient during centrifugation

A. NaCl

B. KCl

C. CsCl

D. $MgCl_2$

Answer: C



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24. The technique separates proteins according to their molecular weight.

A. PAGE

B. Affinity chromatography

C. Ion exchange chromatography

D. Gel filtration

Answer: A



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25. At what speed, the mitochondria can be separated out by differential centrifugation?

A. $200 \times g$

B. $500 \times g$

C. $800 \times g$

D. $8000 \times g$

Answer: D



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26. Which of the following is always absent in prokaryotic cells?

A. Ribosomes

B. Mitochondria

C. DNA

D. Cell wall

Answer: B



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27. The primary cell wall is mainly made up of

A. lignin

B. pectin

C. cellulose

D. protein

Answer: C



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28. Match the following columns

Column I	Column II
A. Centriole	1. Infoldings in mitochondria
B. Chlorophyll	2. Thylakoids
C. Cristae	3. Nucleic acids
D. Ribozymes	4. Basal body of cilia or flagella

A. A-4,B-2,C-1,D-3

B. A-1,B-2,C-4,D-3

C. A-1,B-3,C-2,D-4

D. A-4,B-3,C-1,D-2

Answer: A



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29. Which structures perform the function of mitochondria in bacteria ?

- A. Nucleoid
- B. Ribosomes
- C. Cell wall
- D. Mesosomes

Answer: D



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30. Which of these organelles does not contain ribosomes

I. Rough endoplasmic reticulum II .

Chloroplast. III. Golgi apparatus IV.

Mitochondria

A. I and II

B. I and IV

C. Only IV

D. Only III

Answer: D



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31. A major site for synthesis of lipids is

A. RER

B. SER

C. symplast

D. nucleoplast

Answer: B



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32. The solid linear cytoskeletal elements having a diameter of 6 nm and made up of a single type of monomer are known as

- A. microtubules
- B. microfilaments
- C. intermediate filaments,
- D. lamins

Answer: B



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33. The osmotic expansion of cell kept in water is chiefly regulated by :

A. mitochondria

B. vacuoles

C. plastids

D. ribosomes

Answer: B



34. The Golgi complex plays a major role

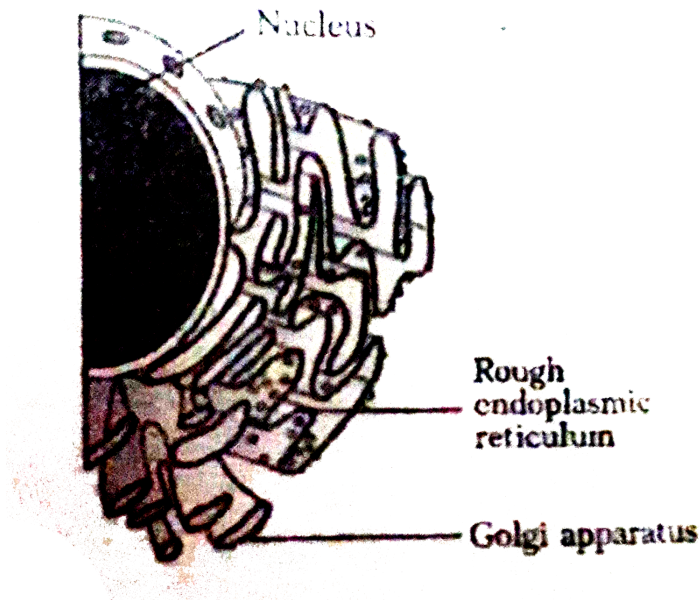
- A. in trapping the light and transforming it into chemical energy
- B. in digesting proteins and carbohydrates
- C. as energy transferring organelles
- D. in post-translational modification of proteins and glycosidation of lipids

Answer: D



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35. Who gave the term 'plasmalemma'?



A. C negeli

B. JQ Plower

C. C Kramer

D. Nicolson

Answer: B



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36. The difference between rough endoplasmic reticulum and smooth endoplasmic reticulum is that rough endoplasmic reticulum

A. does not contain ribosomes

B. contains ribosomes

C. does not transport proteins

D. transport proteins

Answer: B



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37. Ultrastructure of cell is observed by

A. simple microscope

B. light microscope

C. phase contrast microscope

D. electron microscope

Answer: D



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38. Robert Hooke used the terms cell in the year

A. 1650

B. 1665

C. 1865

D. 1960

Answer: B



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39. Protein synthesis takes place in

A. ribosomes

B. chloroplasts

C. mitochondria

D. golgi bodies

Answer: A



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40. Cell theory is not applicable for

A. algae

B. fungi

C. viruses

D. lichens

Answer: C



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41. Mitochondria will be found in abundance in cells of tissues having

- A. minimum activity
- B. average activity
- C. maximum activity
- D. None of the above

Answer: C



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42. The types of ribosomes found in prokaryotic cells are

A. 100S

B. 80S

C. 60S

D. 70S

Answer: D



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43. Which of the cell organelle lack membrane ?

- A. Mesosome
- B. Mitochondria
- C. ribosome
- D. liposome

Answer: C



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44. Ribosomal RNA is actively synthesized in :-

- A. lysosomes
- B. nucleolus
- C. nucleoplasm
- D. ribosomes

Answer: B



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45. Which one of the following does not differ in *E. coli* and *Chlamydomonas*

- A. Ribosomes
- B. Chromosomal organisation
- C. Cell wall
- D. Cell membranes

Answer: D



46. What is true about ribosomes ?

- A. The prokaryotic ribosomes are 80S, where S stands for sedimentation coefficient
- B. These are composed of ribonucleic acid and proteins
- C. These are found only in eukaryotic cells

D. These are self-splicing introns of some RNAs

Answer: B



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47. Select the correct statement from the following regarding cell membrane.

A. Na^+ and Ka^+ ions move across cell membrane by passive transport.

B. Proteins make up 60-70% of the cell membrane

C. lipids are arranged in a bilayer with polar heads towards the inner part

D. fluid mosaic model of cell membrane was proposed by Singer and Nicholson

Answer: D



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48. Which one possesses giant chromosomes

A. *Drosophila*

B. *Xenopsylla*

C. *Branchiomyces*

D. Mouse

Answer: A



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49. Centromere is a part of:

A. ribosomes

B. chromosome

C. mitochondria

D. endoplasmic reticulum

Answer: B



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50. Telemere repetitive DNA sequences control the function of eukarote chromosomes because they

- A. act as replicans
- B. are RNA transcription factor
- C. help chromosome pairing
- D. prevent chromosome loss

Answer: D



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51. B-chromosome is also known as

A. somatic chromosome

B. megachromosome

C. limited chromosome

D. supernumerary chromosome

Answer: D



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52. Polytene chromosome was discovered in

A. Chironomus

B. Drosophila

C. musca

D. Culex

Answer: A



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53. An interconnecting membranous network of the cell composed of vesicles, flattened sacs and tubules is

" " Or

Nuclear membrane is formed around the groups of daughter chromosomes during the telophase by

A. lysosome

B. nucleus

C. mitochondrion

D. endoplasmic reticulum

Answer: D



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54. Dictyosome is absent in

A. cyanobacteria

B. mycoplasma

C. bacteria

D. all of these

Answer: D



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55. Extranuclear chromosomes occur in : -

- A. peroxisome and ribosome
- B. chloroplast and mitochondria
- C. mitochondria and ribosome
- D. chloroplast and lysosome

Answer: B



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56. Plant cells normally lack

- A. ribosomes
- B. golgi bodies
- C. centrioles
- D. cell membrane

Answer: C



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57. Detailed structure of the membrane was studied after the advent of electron microscope during

A. 1930s

B. 1950s

C. 1970s

D. 1990s

Answer: B



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58. The nucleus is separated from surrounding cytoplasm by a nuclear membrane, which is

- A. single layered with pores
- B. single layered without pores
- C. double layered with pores
- D. double layered without pores

Answer: C



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59. Which one is stained usingg carmine?

A. Bacteria

B. Chromosomes

C. Diatoms

D. viruses

Answer: B



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60. Which one of the following organisms is not an example of eukaryotic cells

A. *Escherichia coli*

B. *Euglena viridis*

C. *Amoeba proteus*

D. *Paramecium caudatum*

Answer: A



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61. In eubacteria, a cellular component that resembles eukaryotic cell is

A. nucleus

B. ribosomes

C. cell wall

D. plasma membrane

Answer: D



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62. Comparing small and large cells, which statement is correct?

A. Small cells have a small surface area per volume ratio

B. exchange rate of nutrients is fast with large cells

C. Small cells have a large surface area per volume ratio

D. exchange rate of nutrients is slow with
small cells

Answer: C



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63. Middle lamella is present

A. inside the secondary wall

B. inside the primary wall

C. outside the primary wall

D. in between secondary and tertiary walls

Answer: C



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64. Plasma membrane is made up of

A. lipid, protein and water

B. lipid, protein and manganese

C. lipid and carbohydrate

D. lipid, protein and carbohydrate

Answer: D



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65. Middle lamella is composed of

- A. carbohydrate
- B. calcium pectate
- C. protein
- D. peptidoglycan

Answer: B



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66. What is a genophore

- A. DNA in prokaryotes
- B. DNA and RNA in prokaryotes
- C. DNA and protein in prokaryotes
- D. RNA in prokaryotes

Answer: A



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67. Tracer isotopes can be located by

A. muller counter

B. geiger counter

C. both (a) and (b)

D. morgan counter

Answer: C



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68. Consider the following statements are
choose the correct one.

A. Plant cells have centrioles, which are
absent in almost all animal cells

B. ribosomes are the site of protein
synthesis

C. The middlelamella is a layer mainly of
calcium carbonate, which holds the
different neighbouring cells together

D. in animal cells, steroidal hormones are synthesised by smooth endoplasmic reticulum

Answer: B



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69. Cytoskeleton is made up of

A. Calcium phosphate granules

B. callose deposits

C. cellulosic microfibrils

D. proteinaceous filaments

Answer: D



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70. In chloroplasts the chlorophyll is located in

A. grana

B. pyrenoid

C. stroma

D. both (a) and (c)

Answer: A



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71. Membrane that covers the vacuole in a plant cell is called

A. tonoplast

B. tonoplasm

C. jacket

D. cell membrane

Answer: A



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72. Nuclear membrane is continuous with

A. rough endoplasmic reticulum

B. smooth endoplasmic reticulum

C. cell membrane

D. golgi bodies

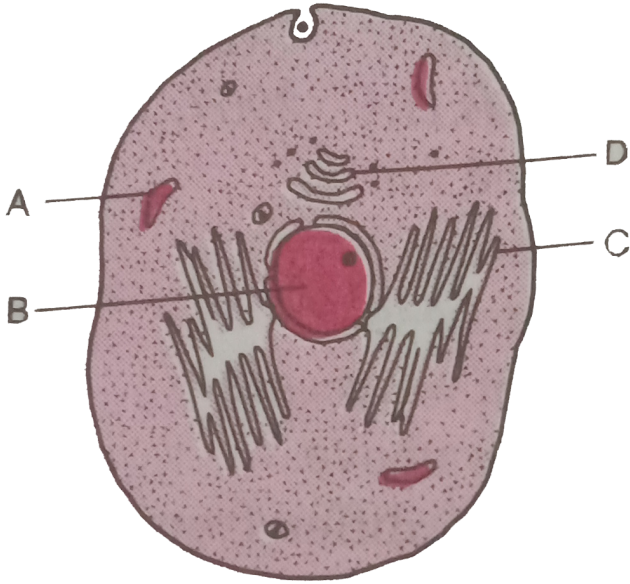
Answer: A



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73. RER synthesises a plasma-membrane protein. Membrane protein becomes slightly different while passing through another cell organelle. Identify the organelle in the given

diagram



A. D

B. A

C. B

D. C

Answer: A



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74. Which of the following is responsible for the origin of lysosome

- A. chloroplast
- B. Mitochondrion
- C. Golgi body
- D. Ribosome

Answer: C



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75. Subcellular components are separated by

- A. electrophoresis
- B. cell fractionation
- C. chromatography
- D. autoradiography

Answer: C



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76. In confocal scanning, light microscope was inverted by

- A. Lehmann
- B. Max Haitinger
- C. Marvin Minsky
- D. Knoll and ruska

Answer: C



77. Phase contrast scanning, light microscope was invented by

- A. Fritz-Zernike
- B. Galileo galilie
- C. M knoll and E ruska
- D. J Jansen and Z Janssen

Answer: A



78. name the technique other than microsocopy used for the study of the cell.

- A. Obliteration
- B. Plasmolysis
- C. Flow cytometry
- D. None of these

Answer: C



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79. Protein substances are generally stained with

A. iodine

B. light green

C. cotton blue

D. ruthenium red

Answer: D



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80. karyotype is

A. division of nucleus

B. chromosomes complement

C. specific for each species

D. all organisms possessing same type of
chromosome

Answer: B



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81. Chromatin is chemically made of

A. nucleic acid, histone and non-histone protein

B. nucleic acid and histone protein

C. nucleic acid and non-histone protein

D. nucleic acid

Answer: A



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82. Puffs of polytene chromosome are specially concentrated with

A. DNA polymerase

B. ligase

C. ecdyson

D. RNA polymerase

Answer: D



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83. Keeping in view the fluid mosaic model for the structure of cell membrane, which one of the following statements is correct with respect to the movement of lipids and proteins from one lipid mono layer to the other (described as flip flop movement)

A. Both lipids and proteins can flip-flop

B. while lipids can rarely flip-flop, proteins cannot

C. While proteins can flip-flop, lipids cannot

D. neither lipids, nor proteins can flip-flop

Answer: B



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84. Polysome is formed by

A. several ribosomes attached to a single

mRNA

B. many ribosomes attached to a strand of

endoplasmic reticulum

C. a ribosome with several subunits

D. ribosomes attached to each other in a linear arrangement

Answer: A



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85. The two sub-units of ribosome remain united at a critical ion level of

A. copper

B. manganese

C. magnesium

D. calcium

Answer: C



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86. Vacuole in a plant cell

A. is membrane bound and contains

storage proteins and lipids

B. is membrane bound and contains water and excretory substances.

C. lacks membrane and contains air

D. lacks membranes bound and contains water and excretory substances.

Answer: B



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87. In germinating seeds fatty acids are degraded exclusively in the

- A. proplastids
- B. glyoxysomes
- C. peroxisomes
- D. mitochondria

Answer: B



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88. What is common between chloroplasts, chromoplasts and leucoplasts

A. The presence of pigments

B. the possession of thylakoids and grana

C. Storage of starch, proteins and lipids

D. Ability to multiply by a fission-like process

Answer: D



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89. Assertion : A cell membrane shows fluid behaviour.

Reason : A membrane is a mosaic or composite of diverse lipids and proteins.

A. Both assertion and Reason are true and reason is the correct explanation of assertion

B. Both assertion and reason are true, but reason is not the correct explanation of assertion

C. Assertion is true, but reason is false

D. Both assertion and reason are false

Answer: B



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90. Golgi apparatus is absent in

A. higher plant

B. yeast

C. bacteria and blue-green algae

D. none of the above

Answer: C



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91. Subunits of 80S ribosome are

A. 40S

B. 60S

C. both (a) and (b)

D. None of these

Answer: C



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92. Which is not a plastid?

A. mitoplast

B. chromoplast

C. chloroplast

D. leucoplast

Answer: A



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93. Which of the following cell organelle is considered to be rich in catabolic enzymes

"" Or

Respiratory and oxidative enzymes are present in

"" Or

Highest number of enzyme is found in

A. Lysosome

B. chloroplast

C. mitochondria

D. peroxisomes

Answer: C



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94. Which organelle is present in higher number in secretory cells?

A. Dictyosome

B. ER

C. Lysosome

D. Vacuole

Answer: A



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95. Which of the following techniques, other than microscopy, is used for the study of cell?

A. Maceration

B. Plasmolysis

C. Chromatography

D. Autoradiography

Answer: D



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96. Who invented the "electron microscope"

A. Knoll and ruska

B. Rudolf and kolliker

C. Robert hooke

D. Swanson

Answer: A



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97. Electron microscope has revealed the presence of or Which among the following can be seen only under electron microscope

A. Ribosomes

B. Leucoplasts

C. Chloroplasts

D. Chromosomes

Answer: A



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98. Which one of the following is not a constituent of cell membrane

A. Cholesterol

B. Glycolipids

C. Proline

D. Phospholipids

Answer: C



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99. Select the incorrect statement from the following.

A. both chloroplasts and mitochondria contain an inner and an outer

membrane.

B. Both chloroplasts and mitochondria have an internal compartment, the thylakoid space bounded by the thylakoid membrane.

C. Both chloroplasts and mitochondria contain DNA

D. The chloroplasts are generally much larger than mitochondria

Answer: B



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100. Protein synthesis in an animal cell occurs

A. only on the ribosomes present in the cytosol

B. only on the ribosomes attached to nuclear envelope and endoplasmic reticulum

C. on ribosomes present in the nucleolus as well as in cytoplasm

D. on ribosomes present in the cytosol as well as in the mitochondria

Answer: D



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101. Assertion- The true nucleus is generally absent in E. coli and other prokaryotes.

Reason- An undifferentiated, unorganised fibrillar nucleus without any limiting membrane is observed in prokaryotic cells.

A. Both assertion and Reason are true and reason is the correct explanation of assertion

B. Both assertion and reason are true, but reason is not the correct explanation of assertion

C. Assertion is true, but reason is false

D. Both assertion and reason are false

Answer: A



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102. Cristae are associated with which of the following?

A. Mitochondrion

B. Cytoplasm

C. Protoplasm

D. Endoplasmic reticulum

Answer: A



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103. Centrosome is not present in the cell of

A. higher plants

B. lower plants

C. higher animals

D. lower animals

Answer: A



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104. Fat storing granules are

A. elaioplast

B. amyloplast

C. aleuroplast

D. none of these

Answer: A



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105. Extension of plasma membrane in prokaryotes is

A. mesosome

B. endoplasmic reticulum

C. ribosome

D. none of these

Answer: A



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106. Number of protofilaments in microtubule is

A. 13

B. 12

C. 5

D. 10

Answer: A



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107. In fluid mosaic model of plasma membrane ,

- A. upper layer is non-polar and hydrophilic
- B. polar layer is hydrophobic
- C. phospholipids form a bimolecular layer
middle part
- D. proteins form a middle layer

Answer: B



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108. Nucleolus is the site of formation of

A. spindle fibres

B. chromosomes

C. ribosomes

D. peroxisomes

Answer: C



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109. In nucleoplasm, a conspicuous body of spherical shape attached to a particular chromosome on a definite position is called

A. plasmid

B. karyolymph

C. nucleolus

D. nuclear reticulum

Answer: C



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110. Organelle involved in modification and routing of newly synthesised proteins to their destination is

A. mitochondria

B. endoplasmic reticulum

C. lysosome

D. chloroplast

Answer: B



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111. Which of these is mismatched?

A. Amyloplasts-Store protein granules

B. Elaioplasts-store oils or fats

C. Chloroplasts-Contain chlorophyll
pigments

D. Chromoplasts-Contain coloured pigment
other than chlorophyll

Answer: A



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112. Resolving power of scanning electron microscope is

A. 0.001 nm

B. 0.01 nm

C. 20 nm

D. 0.0001 nm

Answer: C



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113. Cell organelle can be separated by

A. X-ray diffraction

B. autoradiography

C. thin-section microtomy

D. differential centrifugation

Answer: D



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114. If the cells are broken up and sedimented, the new structure formed in one of the fractions is

A. ribosome

B. lysosomes

C. microsome

D. centrosome

Answer: C



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115. A chromosome with centromere in the middle is

A. metacentric

B. telocentric

C. acrocentric

D. dicentric

Answer: A



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116. Centrosome is absent in

A. cell of higher plants

B. cells of lower plants

C. cells of higher animals

D. cells of lower animals

Answer: A



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117. Chromosome having terminal centromere capped by centromere is

- A. metacentric
- B. submetacentric
- C. acrocentric
- D. telocentric

Answer: D



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118. The telomeres of eukaryotic chromosomes consist of short sequences of

- A. adenine rich repeat
- B. guanine rich repeat
- C. thymine rich repeats
- D. cytosine rich repeats

Answer: B



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