SET – A

1.	(a) Mitochondria and chloroplasts	1
2.	(d) Proteins and fats	1
3.	(b) Kinetochores	1
4.	(c)Rudolf Virchow	1
5.	(d)All of these	1
6.	The cell membrane of eukaryotes is composed of lipids that are arranged in a bilayer, with their hydrophyllic polar heads towards outside and hydrophobic tails towards the inner part. The lipid component mainly consists of phosphoglycerides.	2
7.	The endoplasmic reticulum bearing Ribosomes on their surface is Rough ER (RER). It is involved in Protein synthesis. In the absence of ribosomes the ER is smooth endoplasmic reticulum (SER). It is the major site of synthesis of lipids.	2
8.	In plant cells the cell plate forms, which represents the middle lamella in the cytoplasm, which grows outward to meet the lateral walls but in animal cells the plasma membrane forms a furrow which gradually deepens and joins in the centre dividing the cytoplasm into two.	2
9.	Mitosis is an Equational Division. It results in diploid daughter cells with identical genetic composition. It helps in growth of multicellular organisms. It has significant contribution in cell repair.(any 3 points)	3
10.	Zygotene- Homologous chromosomes pair to make a synaptonemal complex Pachytene- Crossing over of homologous pairs Anaphase of Mitosis or Meiosis II	3
11.	Chloroplasts are double membrane bound, with the inner space called stroma. In the stroma are flat membranous sacs called **Thylakoids** arranged in stacks called **grana**. The stroma lamellae connect the thylakoids. The stroma contains enzymes required for the synthesis of carbohydrates and proteins and the thylakoids contain the chlorophyll. It contains DNA and ribosomes (70S)	3

SET B

1.	(b) Mesosome	1
2.	(a)Mitochondria and Chloroplast	1
3.	(d) G 0 phase	1
4.	(b) Glycocalyx, cell wall & plasma membrane	1
5.	(c)Satellite	1
6.	The core of Cilia or Flagellum, the axoneme has 9 pairs of doublets of radially arranged microtubules. A pair is arranged centrally and is connected by bridge and enclosed in a central sheath, which is connected to one of the peripheral tubules by radial spokes.	2
7.	Prokaryotic cells have a ribosome 70 S made of two subunits 30S + 50S and Eukaryotic has a ribosome which is larger with 80S made of two subunits 40S + 60S	2

8.	Q 8 (SET A)	2
9.	Meiosis is a reductional division that happens during gametogenesis makes the chromosome number to half in gametes. Meiosis helps in conservation of chromosome number across generations. It increases genetic variability in the populations from one generation to next. It gives rise to variations that help in the process of evolution.(any 3)	3
10.	Zygotene- Homologous chromosomes pair to make a synaptonemal complex Diakinesis- Terminalisation of Chiasmata. Metaphase	3
11.	Mitochondria are the power house of the cell. It is a double membrane structure dividing the lumen into two compartments. Inner is filled with matrix. The inner membrane forms infolds called cristae which increase the surface area. They produce cellular energy in form of ATP.	3

SET C		
1.	(d)All of these	1
2.	(b) Recombinase	1
3.	(b) S phase	1
4.	(c)Rudolf Virchow	1
5.	(d)Metacentric	1
6.	Q.7 (SET B)	2
7.	The two basic phases of cell cycle are the –Interphase & M phase(Mitosis) The S phase marks the period during which DNA synthesis or replication takes place .The amount odf DNA per cell doubles.	1+1
8.	Q.7 (SET A)	2
9.	Q.9 (SET B)	3
10.	Zygotene- Homologous chromosomes pair to make a synaptonemal complex Telophase I of Meiosis I Diakinesis- Terminalisation of Chiasmata	3
11.	Q.11(SetA)	3