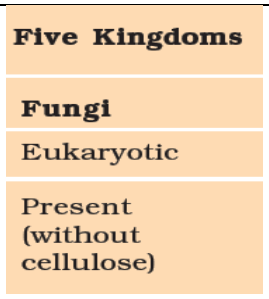
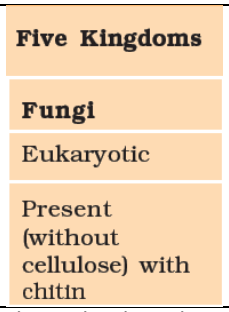
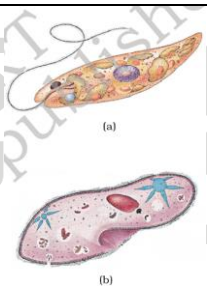
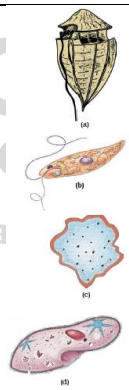
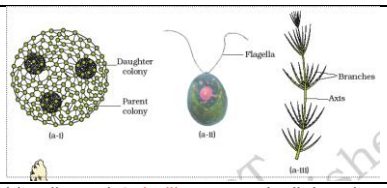
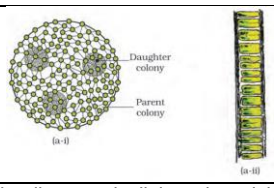
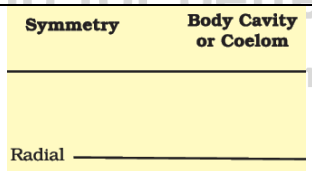
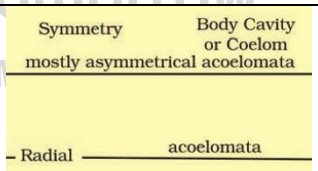
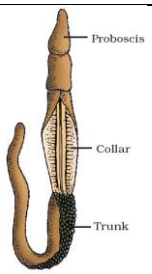
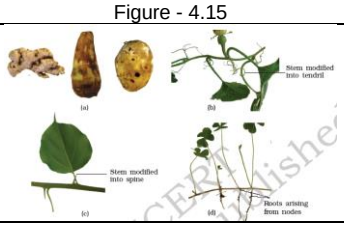
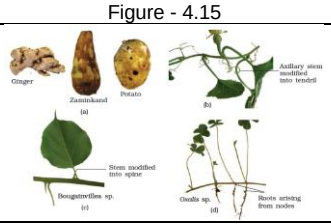
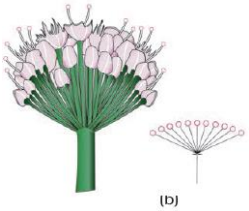
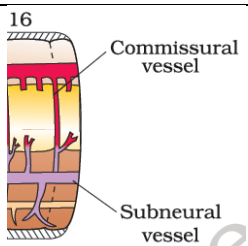
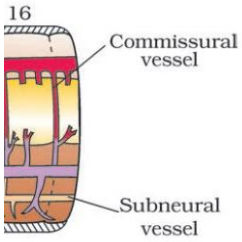
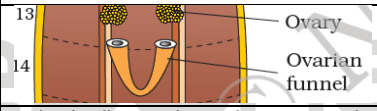
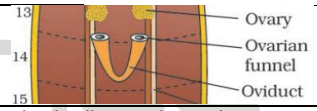
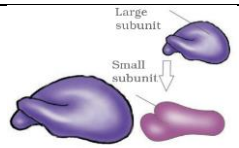
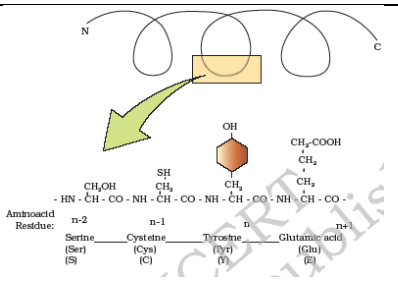
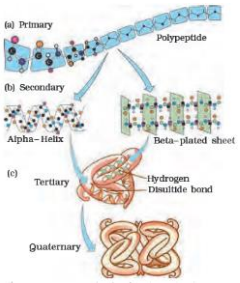
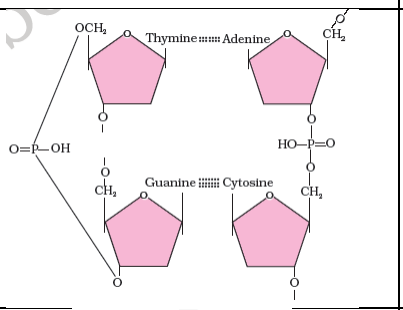
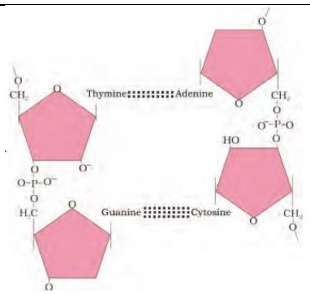
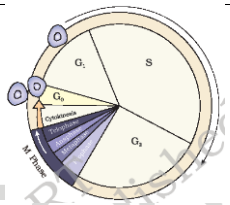
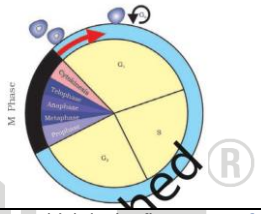
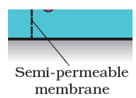
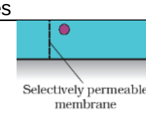
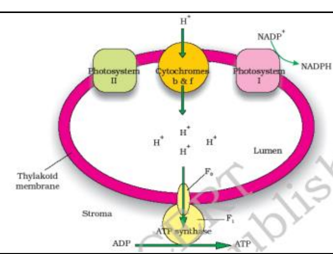
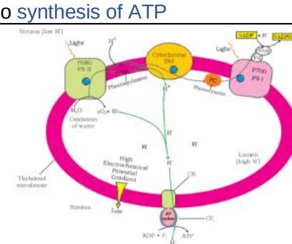
NCERT-2018-19 UPDATE Class XI

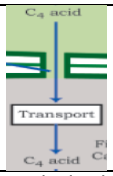
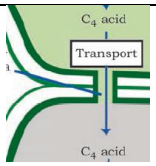
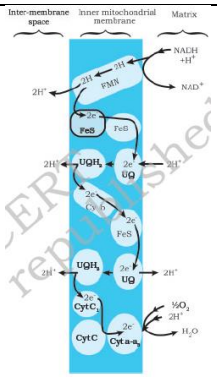
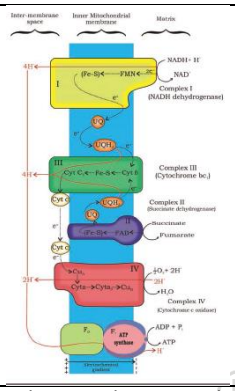
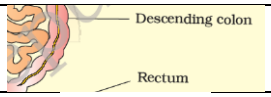
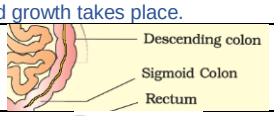
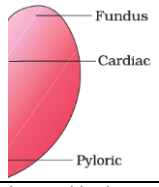
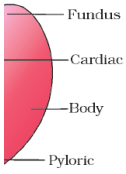
S. N0.	Page No. (NCERT 18-19)	Topic	Old Content (to be updated)	Updated Content
1.	17 (Table 2.1)	Biological Classification		
2.	17	Biological Classification	It brought together the prokaryotic bacteria and the blue green algae with other groups which were eukaryotic.	It brought together the prokaryotic bacteria and the blue green algae (cyanobacteria) with other groups which were eukaryotic.
3.	21	Biological Classification		
4.	22	Biological Classification	When your bread develops a mould or your orange rots it is because of fungi.	You must have seen fungi on a moist bread and rotten fruits.
5.	27	Biological Classification	Earlier there was no information about prions	Prions:In modern medicine certain infections neurological diseases were found to be transmitted by an agent consisted of abnormally folded protein. The agent was similar in size to viruses. These agents were called prions. The most notable diseases caused by prions are bovine spongiform encephalopathy (BSE) commonly called mad cow disease in cattle and its analogous variant Cr-Jacob disease (CJD) in humans.
6.	30	Plant Kingdom	These gametes can be flagellated and similar in size (as in **Chlamydomonas**) or non-flagellated (non-motile) but similar in size (as in Spirogyra). Such reproduction is called isogamous. Fusion of two gametes dissimilar in size, as in some species of **Chlamydomonas** is termed as anisogamous.	In place of Chamydomonas for example of flagellated and similar sized gametes, now **Ulothrix** is given. In place of Chlamydomonas for the example of Anisogamous reproduction **Udorina** is given

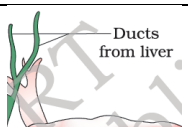
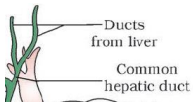
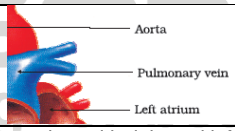
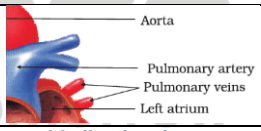
7.	**31 Figure - 3.1**	**Plant Kingdom**		
8.	**32 Para-1 line-12**	**Plant Kingdom**	Chlorella and Spirullina are unicellular algae, rich in proteins and are used as food supplements even by space travellers.	Chlorella a unicellular alga rich in proteins is used as food supplement even by space travellers.
9.	**40 Para-1 , Line-9**	**Plant Kingdom**	The dicotyledons are characterised by having two cotyledons in their seeds while the monocolyledons have only one. The male sex organs in a flower is the stamen. Each stamen consists of a slender filament with an anther at the tip. The anthers, following meiosis, produce pollen grains. The female sex organs in a flower is the pistil or the carpel. Pistil consists of an ovary enclosing one to many ovules. Within ovules are present highly reduced female gametophytes termed embryo-sacs. The embryo-sac formation is preceded by meiosis. Hence, each of the cells of an embryo-sac is haploid.	The dicotyledons are characterised by seeds having two cotyledons, reticulate venations in leaves, and tetramerous or pentamerous flowers, i.e. having four or five memerbs in each floral whorls. The monocotyledons on the other hand are characterised by single cotyledonous seeds, parallel venation in leaves, and trimerous flowers having three members in each floral whorls. The male sex organs in a flower is the stamen. Each stamen consists of a slender filament with an anther at the tip. Within the anthers, the pollen mother cell divide by meiosis to produce microspores which matures into pollen grains. The female sex organs in a flower is the pistil. Pistil consists of an ovary at its base, a long slender style and stigma. Inside the ovary, ovules are present. Generally each ovule has a megaspore mother cell that undergoes meiosis to form four haploid megaspore. Three of them degenerate and one divide to form the embryo sac.
10.	**49 Fig-4.4**	**Animal Kingdom**		
11	**50, 4.2.2 Para-1, Line-3**	**Animal Kingdom**	cnidoblasts or cnidocytes (which contain the stinging capsules or **nematocytes**)	cnidoblasts or cnidocytes (which contain the stinging capsules or **nematocysts)**
12.	**54**	**Animal Kingdom** Note – The line which is added in 4.2.10 (para-1) is Hemichordata have a rudimentary structure in the collar region called stomochord, a structure similar to notochord.	 Figure - 4.15	 Figure - 4.15
13.	**69**	**Morphology of Flowering plants**		

14.	**73**	**Morphology of Flowering plants**	Like calyx, corolla may be also free (gamopetalous) or united (polypetalous).	Like calyx, corolla may also be gamopetalous **(petals united)** or polypetalous **(petals free).**
15.	**80**	**Morphology of Flowering plants** (Solanaceae Family)	**Gynoecium:** bicarpellary, syncarpous; ovary superior, bilocular, placentaswollen with many ovules	**Gynoecium:** bicarpellary **obligately placed**, syncarpous; ovary superior, bilocular, placenta swollen with many ovules, **axile**
16.	**81**	**Morphology of Flowering plants**	 (b)	 (b)
17.	**90 6.3.1 - Para-2, Line-1**	**Anatomy of Flowering Plants**	Root Epidermis	Epiblema
18.	**109 Fig.- 7.11**	**Structural Organisation in Animals**		
19.	**110 Fig. 7.13**	STRUCTURAL ORGANISATION IN ANIMALS		
20.	**126 8.3 Para-4 Line-2**	**Cell : The Unit of Life**	Animal cells contain another non-membrane bound organelle called Centriole which helps in cell division.	Animal cells contain another non-membrane bound organelle called centrosome which helps in cell division.
21.	**128 8.4.1 Para-3 Line-1**	**Cell : The Unit of Life**	The plasma membrane is semi-permeable in nature and interacts with the outside world.	The plasma membrane is selectively permeable in nature and interacts with the outside world.
22.	**131 Fig. 8.4**	**Cell : The Unit of Life**	**Note –** The naming of diagram has changed	
23.	**136 Fig. 8.9**	**Cell : The Unit of Life**		 Figure 8.9 Ribosome ***Note – 8.5.6 , Para-2 , Line-2*** Each ribosome has two subunits, larger and smaller subunits (Fig 8.9). The two subunits of 80S ribosomes are 60S and 40S while that of 70S ribosomes are 50S and 30S.
24.	**139 Para-2 Line-4**	**Cell : The Unit of Life**		Centromere holds two chromatids of a chromosome.

25.	**150 Fig.9.3**	**Biomolecules**		
26.	**151 Fig. 9.5**	**Biomolecules**		
27.	**163 Fig. 10.1**	**Cell Cycle and Cell Division**		
28.	**164 10.2.1 Para-1 Line-1**	**Cell Cycle and Cell Division**	Prophase which is the first stage of mitosis follows the S and G2 phases of interphase.	Prophase which is the first stage **of karyokinesis** of mitosis follows the S and G2 phases of interphase.
29.	**164 10.2.1 2nd Point**	**Cell Cycle and Cell Division**	Initiation of the assembly of mitotic spindle, the microtubules, the proteinaceous components of the cell cytoplasm help in the process.	Centrosome which had undergone duplication during interphase, begins to move towards opposite poles of the cell. Each centrosome radiates out microtubules called asters. The two asters together with spindle fibres forms mitotic apparatus.
30.	**166 10.2.4 Para-1**	**Cell Cycle and Cell Division**	Telophase At the beginning of the final stage of mitosis, i.e., telophase, the chromosomes that have reached their respective poles decondense and lose their individuality. The individual chromosomes can no longer be seen and chromatin material tends to collect in a mass in the two poles (Figure 10.2 d).	TelophaseAt the beginning of the final stage **of karyokinesis**, i.e., telophase, the chromosomes that have reached their respective poles decondense and lose their individuality. The individual chromosomes can no longer be seen and **each set of chromatin material tends to collect at each of the two poles** (Figure 10.2 d).
31.	**166 10.2.4 Para-1 Point-2nd**	**Cell Cycle and Cell Division**	Nuclear envelope assembles around the chromosome clusters.	Nuclear envelope **develops around the chromosome clusters at each pole forming two daughter nuclei.**
32.	**166 10.2.5 Para-1 Line - 1st**	**Cell Cycle and Cell Division**	Mitosis accomplishes not only the segregation of duplicated chromosomes into daughter nuclei (karyokinesis), but the cell itself is divided into two daughter cells by a separate process called cytokinesis	Mitosis accomplishes not only the segregation of duplicated chromosomes into daughter nuclei (karyokinesis), but the cell itself is divided into two daughter cells **by the separation of cytoplasm** called cytokinesis
33.	**167 10.4 Para-1, Point-3rd**	**Cell Cycle and Cell Division**	Meiosis involves pairing of homologous chromosomes and recombination between them.	Meiosis involves pairing of homologous chromosomes and recombination between **non-sister chromatids of homologous chromosomes.**

34.	**168 10.4.1 Para-2 Line-13th**	**Cell Cycle and Cell Division**	During this stage bivalent chromosomes now clearly appears as tetrads.	During this stage, **the four chromatids of each bivalent chromosomes becomes distinct and clearly appears as tetrads.**
35.	**169 Telophase-I Line-1st**	**Cell Cycle and Cell Division**		There is no replication of DNA during interkinesis.
36.	**169 10.4.2 Anaphase II**	**Cell Cycle and Cell Division**	It begins with the simultaneous splitting of the centromere of each chromosome (which was holding the sister chromatids together), allowing them to move toward opposite poles of the cell (Figure 10.4).	It begins with the simultaneous splitting of the centromere of each chromosome (which was holding the sister chromatids together), allowing them to move toward opposite poles of the cell (Figure 10.4) **by shortening of microtubules attached to kinetochores.**
37.	**178 11.1.3 Line-1st**	**Transport in Plants**	Active transport uses energy to pump molecules against a concentration gradient. Active transport is carried out by membrane-proteins	Active transport uses energy **to transport** and pump molecules against a concentration gradient. Active transport is carried out by membrane-proteins.
38.	**179 11.2.1 Para-3rd Line-1st**	**Transport in Plants**	If some solute is dissolved in pure water, the solution has fewer free water and the concentration of water decreases, reducing its water potential.	If some solute is dissolved in pure water, the solution has fewer free water molecules and the concentration (free energy) of water decreases
39.	**180 Fig. 11.3**	**Transport in Plants**		 Note – (g) What will be the direction of the movement of water when two solutions with water potential = 0.2 MPa and water potential = 0.1 MPa are separated by a selectively permeable membrane?
40.	**209 13.3 Para-3 Line-3rd**	**Photosynthesis in Higher Plants**	There is a clear division of labour within the chloroplast. The membrane system is responsible for trapping the light energy and also for the synthesis of ATP and NADPH. In stroma, enzymatic **reactions incorporate CO_2 into** the plant leading to the synthesis of sugar, which in turn forms starch. The former set of reactions, since they are directly light driven are called light reactions. The latter are not directly light driven but are dependent on the products of light reactions (ATP and NADPH). Hence, to distinguish the latter they are called, by convention, as dark reactions.	There is a clear division of labour within the chloroplast. The membrane system is responsible for trapping the light energy and also for the synthesis of ATP and NADPH. **In stroma, enzymatic reactions synthesise sugar, which in turn forms starch.** The former set of reactions, since they are directly light driven are called light reactions **(photochemical reactions).** The latter are not directly light driven but are dependent on the products of light reactions (ATP and NADPH). Hence, to distinguish the latter they are called, by convention, as dark reactions **(carbon reactions).**
41.	**212 13.6.1 Line-4th**	**Photosynthesis in Higher Plants**	The splitting of water is associated with the PS II; water is split into H^+, [O] and electrons.	The splitting of water is associated with the PS II; water is split into $2H^+$, [O] and electrons.
42.	**214 Last Para Line-2**	**Photosynthesis in Higher Plants**	Why are we so interested in the proton gradient? This gradient is important because it is the breakdown of this gradient that leads to release of energy.	Why are we so interested in the proton gradient? This gradient is important because it is the breakdown of this gradient that leads to synthesis of ATP
43.	**214 Fig. 13.7**	**Photosynthesis in Higher Plants**		 Figure 13.7 ATP synthesis through chemiosmosis

44.	**215 Para-1st Para-2nd**	**Photosynthesis in Higher Plants**	$F_0 \rightarrow$ **CF_0** $F_1 \rightarrow$ **CF_1** ATPase → **ATP synthase** Note – These terminologies has been changed in chapter PHOTOSYNTHESIS IN HIGHER PLANTS	
45.	**219 Fig. 13.9**	**Photosynthesis in Higher Plants**		
46.	**220 13.9 Para-3 Last line**	**Photosynthesis in Higher Plants**	Therefore, photorespiration is a wasteful process.	The biological function of photorespiration is not known yet.
47.	**233 Fig. 14.4**	**Respiration in Plants**		
48.	**234**	**Respiration in Plants**	Hence, there can be a net gain of 36 ATP molecules during aerobic respiration of one molecule of glucose.	Hence, there can be a net gain of **38 ATP** molecules during aerobic respiration of one molecule of glucose.
49.	**239 Para-1 Last 6 lines added**	**Plant Growth and Development**		The first step in the process of plant growth is seed germination. The seed germinates when favourable conditions for growth exist in the environment. In absence of such favourable conditions the seeds do not germinate and goes into a period of suspended growth or rest. Once favourable conditions return, the seeds resume metabolic activities and growth takes place.
50.	**258 Fig. 16.1**	**Digestion and Absorption**		
51.	**259 Fig. 16.3**	**Digestion and Absorption**		
52.	**259 Para-1st Line-4th**	**Digestion and Absorption**	The stomach, located in the upper left portion of the abdominal cavity, has three major parts – a **cardiac** portion into which the oesophagus opens, a **fundic** region and a **pyloric** portion	The stomach, located in the upper left portion of the abdominal cavity, has four major parts – a cardiac portion into which the oesophagus opens, a fundic region, **body** (main central region) and a pyloric portion
53.	**259 Para-1st Last 5 lines**	**Digestion and Absorption**	The colon is divided into three parts – an ascending, a transverse and a descending part. The descending part opens into the rectum which opens out through the anus.	The colon is divided into four parts – an ascending, a transverse, descending part and a **sigmoid colon**. The descending part opens into the rectum which opens out through the anus.

54.	**261 Fig. 16.6**	**Digestion and Absorption**		
55.	**261 Para-2 Line-2**	**Digestion and Absorption**	duodenum (U) shaped	duodenum **(C)** shaped
56.	**264 16.3 Para-1st Last 2 lines**	**Digestion and Absorption**	However, some of the substances like **fructose** and some amino acids are absorbed with the help of the carrier **ions like Na+**. This mechanism is called the facilitated transport.	However, some of the substances like **glucose** and some amino acids are absorbed with the help of the carrier **proteins**. This mechanism is called the facilitated transport.
57.	**268 17.1 Line-7**	**Breathing and Exchange of Gases**	Special vascularised structures called **gills** are used by most of the aquatic arthropods molluscs whereas vascularised bags called **lungs** are	Special vascularised structures called gills **(branchial respiration)** are used by most of the aquatic arthropods and molluscs whereas vascularised bags called lungs **(pulmonary respiration)**
58.	**268 17.1 Line-10**	**Breathing and Exchange of Gases**	Among vertebrates, fishes use gills whereas reptiles, birds and mammals respire through lungs. Amphibians like frogs can respire through their moist skin also. Mammals have a well developed respiratory system.	Among vertebrates, fishes use gills whereas amphibians, reptiles, birds and mammals respire through lungs. Amphibians like frogs can respire through their moist skin (cutaneous respiration) also.
59.	**269 17.1.1 Line-2nd**	**Breathing and Exchange of Gases**	The nasal chamber opens into **nasopharynx which is a portion of pharynx** the common passage for food and air	The nasal chamber opens into **pharynx the portion which is** common passage for food and air
60.	**269 17.1.1 Line-4th**	**Breathing and Exchange of Gases**	**Nasopharynx** opens through **glottis** of larynx region in to the trachea	The **pharynx** opens through larynx region In to the trachea
61.	**283 Fig. 18.2**	**Breathing and Exchange of Gases**		
62.	**284 Para-2nd**	**Body Fluids and Circulation**	These fibres alongwith right and left bundles are known as bundle of His.	**Note – This line has been removed**
63.	**294 19.3 Para-2nd Line 1st**	**Excretory Products and Their Elimination**	Henle's loop—reabsorption in this segment is minimum.	Henle's loop—reabsorption is minimum **in its ascending limb.**
64.	**298 19.7 Para-2nd Line 1st**	**Excretory Products and Their Elimination**	Para19.7–our lungs remove large amount of CO2(18 litres /day)	Our lungs remove large amount of CO2 **(approximately 200 ml/minute)**
65.	**321 21.4.3 Last 3 lines**	**Neural Control and Coordination**	**Note –** This line was not there in NCERT-2017	Brain stem forms the connections between the brain and spinal cord. Three major regions make up the brain stem; mid brain, pons and medulla oblongata.