

There are various editions of Biology NCERT Books in circulation in the market. Different editions carry different corrections carried out by the NCERT since 2014. For the benefit of the students, we are giving a complete list of erroneous facts accepted by the NCERT on the suggestion of Dr. Arvind Goyal.

DIVERSITY IN THE LIVING WORLD

FUNGI

1. **Wrong Statement : Under Ascomycetes – Many members like morels and buffles are edible. [pg. 24; NCERT XI]**

Corrected To: Many members like morels and **truffles** are edible.

ANIMAL KINGDOM

2. **Wrong Statement : In the flow chart it is mentioned that Echinodermata has bilateral symmetry. [pg 49,NCERT XI]**

Actually in Echinodermata adults have pentaradial symmetry and larvae have bilateral symmetry.

Corrected to: Echinodermata exhibits radial or bilateral symmetry depending on the stage.

PLANT KINGDOM

3. **All seed bearing plants *i.e.*, Gymnosperms and Angiosperms follow diplontic life cycle (diagram shows Gametic meiosis) – pg. 42; (NCERT XI).**

Corrected To: This kind of life cycle is termed as diplontic. An alga, *Fucus sp.*, represents this pattern (Fig. 3.7b). In addition, all seed bearing plants *i.e.*, gymnosperms and angiosperms, follow this pattern with some variations, wherein, the gametophytic phase is few to multi-celled.

4. **Spirullina are unicellular algae rich in proteins. (pg. 32, NCERT XI.)**

Earlier written that Chlorella and Spirullina are unicellular algae. Now corrected and Spirullina deleted .

Written as “*Chlorella* a unicellular alga, rich in proteins. “

5. **Pg 39, NCERT (XI); Megasporangium has been equated to ovule also and Nucellus also in two different places on this page.**

Corrected - Megasporangium equated only to Ovule.

STRUCTURAL ORGANISATION IN PLANTS AND ANIMALS

PLANT MORPHOLOGY

6. **Wrong Statement :** In the family Fabaceae, the floral diagram shows valvate aestivation of Calyx, while in the theory it is mentioned that Calyx has imbricate aestivation (pg. 79, NCERT XI).

Corrected To: Calyx in Fabaceae has Valvate / Imbricate aestivation.

Since diagram is specifically of *Pisum sativum* so valvate shown in that.

7. **Wrong Statement :** In the family liliaceae, the floral diagram shows the perianth to be gamophyllous and the theory also says Perianth – tepal six (3+3), often united into tube. But the floral formula shows the perianth to be polyphyllous (pg. 81, NCERT XI). Similarly in the floral diagram in the androecium, the stamens are shown to be free and epiphyllous (united to tepals). But in the floral formula they are shown as A₃₊₃ meaning to be free and not attached to perianth. In the theory it is mentioned Androecium is stamen six, (3+3), which again means they are fused.

Corrected To: Floral formula corrected to P₍₃₊₃₎; Androecium is 3+3 and in floral diagram corrected to 3+3 and made Epitepalous.

ANIMAL MORPHOLOGY

8. **Wrong Statement :** Typhlosole extends between 26 – 35 segments in the intestine of Earthworm (pg. 108; NCERT XI).

Corrected To: The Typhlosolar region lies after 26th segment except the last 23rd-25th segments .

9. **Wrong Statement :** (Figure 7.13 pg 110 NCERT XI) – The labelling of spermiducal funnels and testis is wrong. The structure which has been labelled as spermiducal funnel is testes. Testes have been shown to be present in segment 10th only while in the text, it has been clearly mentioned that testes are present in the 10th and 11th segment.

Corrected To: The labeling has been corrected in the Diagram(7.13) and Testis labeled in both 10th and 11th segments.

10. **Wrong Statement** :Main text (pg. 115; Class 11th) says female cockroach produces 9 – 10 ootheca. But summary at the end of the chapter (pg 121) says female cockroach produces 10 – 40 ootheca.

Corrected To: Female cockroach produces 9 – 10 ootheca has been mentioned at both places.

11. **Wrong Statement** : Figure 7.13 (pg. 110, NCERT XI) – The prostate gland in earthworm has been shown to be lying in 17th to 19th segments.

Corrected To: Now shown to be lying in 17th to 20th segments in Figure 7.13

12. **Wrong Statement** : On pg. No. 114 (NCERT XI), it is mentioned that ovaries in cockroach are present in 2nd to 6th abdominal segments while on pg. no. 121 (NCERT XI), it is mentioned that ovaries in cockroach are present in 4th, 5th and 6th abdominal segments.

Corrected To: Ovaries in cockroach are present in 2nd to 6th abdominal segments ,at both places in the book.

13. **Wrong Statement** : On pg. No. 114 (NCERT XI), it is mentioned that testes in cockroach are present in 4th to 6th abdominal segments while on pg. No. 121 (NCERT XI), it is mentioned that testes in cockroach are present in 4th and 5th abdominal segments.

Corrected To: Testes in cockroach are present in 4th to 6th abdominal segments , at both places in the book.

CELL: STRUCTURE AND FUNCTIONS

CELL: THE UNIT OF LIFE

14. **Wrong Statement** :Size of chloroplast – length – 5 – 10mm and width – 2 – 4mm (pg. 136 NCERT XI).

Corrected To: Size of chloroplast – length – 5 – 10µm and width – 2 – 4µm

15. **Wrong Statement** :All prokaryotes have a cell wall surrounding the cell membrane. (+1 NCERT, pg 127-128) ;But on pg No. 20, +1 NCERT writes that the Mycoplasma are organisms that completely lack a cell wall. As Mycoplasma are prokaryotic organisms kept under Monera by NCERT itself, the fact given on pg No. 127-128 should be rectified.

Corrected To: All prokaryotes have a cell wall surrounding the cell membrane except in mycoplasma.

BIOMOLECULES

16. **Wrong Statement:** Exoskeletons of arthropods have a complex polysaccharide called chitin. These complex polysaccharides are heteropolymers. [Pg. 149 (NCERT XI).]

Corrected To: Homopolymers.

17. **Wrong Statement :** Structure of glutamic acid (pg. 150, NCERT XI)

Corrected To: Extra-CH₂ group deleted, and so Glutamic acid is C₅H₉NO₄

18. **Wrong fact :** NCERT (XI) pg. 151; Fig 9.5; The given diagram of DNA doesn't show the 3'-5' antiparallel directions of the two strands correctly.

Corrected – The diagram has been corrected.

19. **Wrong Statement :** NCERT (XI) pg. 160 mentions; There are 21 types of amino acids, and on pg.147 it is mentioned that there are 20 types of amino acids.

Corrected To: There are 20 types of amino acids, at both places in the book.

CELL CYCLE AND CELL DIVISION

20. **Wrong Statement :** In the NCERT +1 pg. 164 the text matter says that 'The cells that do not divide further exit G₁ phase to enter an inactive stage called quiescent stage(G₀) of the cell cycle', whereas Figure 10.1 on pg. 163 depicts G₀ phase before the G₁ phase.

Corrected to: Figure 10.1 on pg. 163 has been modified accordingly.

PLANT PHYSIOLOGY

TRANSPORT/MINERAL NUTRITION IN PLANTS

21. **Wrong Statement:** The deficiency symptoms of relatively immobile elements appear first in young leaves – e.g., Sulphur & calcium (pg. 198: Mineral Nutrition: NCERT XI).

Under Translocation of Mineral Ions on pg 190; NCERT XI it is mentioned that – Elements most readily mobilized are phosphorus, sulphur, nitrogen and potassium. Some elements that are structural components like calcium are not remobilized.

Corrected To: Sulphur is mobile and Calcium is an immobile element, at both places in the book.

RESPIRATION IN PLANTS

22. **Wrong Statement :** We have till now seen that Glucose has been broken down to release CO₂ and eight molecules of NADH + H⁺; two of FADH₂ have been synthesised besides just two molecules of ATP (pg 232; NCERT XI).

It should be ten molecules of NADH+H⁺ and four molecules of ATP. As two NADH+H⁺ and two ATP molecules are also produced during conversion of glucose to pyruvate (glycolysis). It is mentioned in the NCERT also at pg. No. 229.

Or

It should be written as : Two molecules of pyruvate are broken down to release eight molecules of

NADH+H⁺, two molecules of FADH₂ and two molecules of ATP during TCA cycle.

Corrected To: We were misinformed that it has been corrected and uploaded, but it has not been done so.

23. **There can be a net gain of 36 ATP molecules during aerobic respiration of one molecule of glucose (pg. 234; NCERT XI).**

As per data given in the NCERT itself, it should be 38 ATPs.

Corrected to-
38 ATP molecules.

DIGESTION AND ABSORPTION

24. **Wrong Statement :** The duodenum is 'u' shaped. (pg. 259; NCERT).

Corrected To: This is a 'c' shaped structure.

25. **Wrong Statement :** Fructose is absorbed with the help of the carrier ions like Na⁺. (pg. 264, NCERT XI).

Corrected To: Substances are **absorbed** with the help of the carrier ions like Na⁺. They have deleted the statement that Fructose is absorbed with the help of the carrier ions like Na⁺.

Guyton Textbook of Medical Physiology: Fructose transport does not occur by the sodium co-transport mechanism. It is transported by facilitated diffusion but not coupled with sodium transport.

26. The stomach has three major parts – a cardiac, fundic and pyloric portion. – pg 259; NCERT XI.

Corrected to-

The stomach is divided into four regions

- (i) Cardia (ii) Fundus (iii) Body (iv) Pyloric part

27. The colon is divided into three parts – an ascending, a transverse and a descending part. – (pg 259; NCERT (XI)).

Corrected to-

Colon consists of the ascending, transverse, descending and sigmoid colon.

The next line related to the above fact has not been changed and is thus still incorrect- “Descending part of colon opens into rectum”. This should also be corrected to -

“ Descending part opens into Sigmoid colon which further opens into the rectum.’

BREATHING AND EXCHANGE OF GASES

28. Nasopharynx opens through glottis of the larynx region into the trachea. (Page No. 269, +1 NCERT).

Corrected To -The nasal chamber opens into the **pharynx**, a portion of which is the common passage for food and air. The pharynx opens through the larynx region into the **trachea**.

29. **Wrong Statement: Receptors associated with aortic arch and carotid artery also can recognize changes in CO₂ and H⁺ concentration (+1 NCERT, pg 275).**

According to Guyton’s Textbook of Medical Physiology chemoreceptors located in aortic arch and carotid artery are especially important for detecting changes in oxygen in blood, although they also respond to a lesser extent to changes in carbon dioxide and hydrogen ion concentrations. When the oxygen concentration in the arterial blood falls below normal, these chemoreceptors become strongly stimulated.

Corrected To: Suggestion accepted but the correction has not been carried out.

BODY FLUIDS & CIRCULATION

30. **Wrong Statement : Diagram of Heart (pg. 283; class XI)**

Structure labelled as pulmonary vein is actually pulmonary trunk (pulmonary artery).

Corrected To: Labelling of Pulmonary vein and pulmonary artery has been corrected in Fig. 18.2

EXCRETORY SYSTEM

31. **Wrong Statement :**Our lungs remove large amounts of CO₂(18 litres/day) (Page no. 298; NCERT XI)

Corrected To: Our lungs remove large amounts of CO₂(approximately 200 mL/ minute)

32. **Wrong Statement :**Reabsorption is minimum in Henle's loop (pg. 294, NCERT XI)

Corrected To: Henle's loop : Reabsorption is minimum in its ascending limb.

NEURAL CONTROL & COORDINATION

33. **Midbrain and Hindbrain form the brain stem. (+1 NCERT pg. 321).**

Corrected to-

The Midbrain, Pons and Medulla oblongata form the Brainstem.

Ironically the erroneous fact " **Midbrain and Hindbrain form the brain stem** "has not been deleted .

34. **Wrong Statement :**There are wax secreting sebaceous glands in the skin of the pinna and the meatus. (Page No. 325; NCERT (XI)

Corrected To: There are wax secreting glands in the skin of the pinna and the meatus.

Snell's Clinical Anatomy for Medical Students: The wax glands (ceruminous glands) are modified sweat glands.

NEURAL CONTROL & COORDINATION

35. **Retina contains three layers of cells from inside to outside-ganglion cells, bipolar and photoreceptor cells. (Page No. 323; NCERT (XI))**

The pigment cell layer is the outer most layer of retina which is not mentioned in the NCERT.

Corrected To- Retina contains three layers of **neural cells** from inside to outside-ganglion cells, bipolar and photoreceptor cells.

36. **Internal ear has 3 semi circular canals and the otolith organ consisting of saccule and utricle. Page No. 326; NCERT (XI)**

Ganong's Textbook of Physiology : The term Otolithic organ is used for macula which is a sensory part of Saccule and Utricle.

Corrected To-The vestibular apparatus is composed of three **semi-circular canals** and the **otolith** (macula is the sensory part of saccule and utricle).

CHEMICAL COORDINATION AND INTEGRATION

37. **Wrong Statement: Endocrine system – NCERT XI pg 334; mentions that thymus gland is located on the dorsal side of the heart and the aorta. Actually, thymus lies moulded over the ventral side of pericardium and aorta.**

Corrected to: The Thymus is located between lungs behind sternum on the ventral side of aorta.

REPRODUCTION

REPRODUCTION IN ORGANISMS

38. **Wrong Statement: Haploid chromosome number (n) in Onion is given as 16 (page no. 13, + 2 NCERT), while on page No. 164, +1 NCERT, it is written that onion cells have 14 chromosomes.**

Corrected To: Haploid chromosome number (n) in Onion is 8 and Diploid is 16 , corrected in both the 11th and 12th Books.

39. **Wrong Statement: Pg 5, XII, NCERT – It is mentioned that when offspring is produced by a single parent with or without the involvement of gamete formation, the reproduction is asexual.**

Whereas on pg 15, XII, NCERT – In the box of summary it is given that – Asexual reproduction does not involve the formation or fusion of gametes.

Corrected To: On pg 15, XII, NCERT – In the box of summary now it is given that – Asexual reproduction does not involve the fusion of gametes.

SEXUAL REPRODUCTION IN FLOWERING PLANTS

40. **Wrong Statement: Sun flower is an example of albuminous seed (pg 36, NCERT XII). Actually it is a non-albuminous seed.**

Corrected to: It has been removed from the list of albuminous seeds.

41. **Wrong Statement: The ovule generally has a single embryo sac formed from a megaspore through reduction division. NCERT XII, Pg 25.**

Corrected To: The ovule generally has a single embryo sac formed from a megaspore.

HUMAN REPRODUCTION

42. **Wrong Statement:** Pg 54; NCERT (XII) : End of 24 weeks is termed as second trimester.

Corrected To: By the end of about approximately 24 weeks (end of second trimester).

43. **Wrong Statement:** Fertilization takes place at the Ampullary isthmic junction of the fallopian tube in Humans. Page No. 51; (NCERT (XII)

Corrected to: Fertilisation takes place in the Ampullary region of the fallopian tube.

GENETICS

PRINCIPLES OF INHERITANCE & VARIATIONS

44. **Wrong Statement:** Pg 70, NCERT XII; one of the contrasting traits selected in pea plants by Mendel was smooth or inflated pods.

Corrected To: one of the contrasting traits selected in pea plants by Mendel was constricted or inflated pods.

MOLECULAR BASIS OF INHERITANCE

45. **Wrong Statement:** NCERT (XII) pg 105 mentions- E.coli divides in 20 minutes and on pg 106 it is mentioned that E. coli completes the process of DNA replication within 38 minutes. Both these facts don't seem to relate well to each other.

Corrected To: On pg 105 E. coli divides in 20 minutes and on pg 106 it is mentioned that E.coli completes the process of DNA replication within 18 minutes.

46. **Wrong Statement:** NCERT (XII) pg 112; In the given table of codons for various amino acids; the

short name of Glutamine is given as Gin.

Corrected To: Gln instead.

47. Pg 113, XII, NCERT – It is mentioned that, Insertion or deletion of three or its multiple bases insert or delete one or multiple codon, hence one or multiple amino acids and reading frame remains unaltered. Such mutations are referred to as frame-shift insertion or deletion mutations.

Actually these are not frame shift mutations.

Corrected To- Insertion or deletion of one or two bases changes the reading frame from the point of insertion or deletion. However, such mutations are referred to as frameshift insertion or deletion mutations. Insertion or deletion of three or its multiple bases insert or delete one or multiple codon hence one or multiple amino acids, and reading frame remains unaltered from that point onwards.

- 48. Wrong Statement: Pg. 114, XII, NCERT – Direction of tRNA is wrong in the Fig 6.12. For reference please see Genes by Lewin and Stryer. The codon and anticodon are complementary and antiparallel. They are written as Codon : 5' ACG 3' Anticodon : 3' UGC 5'**

In figure 6.12 of NCERT (12th) both codon (mRNA) and anticodon (tRNA) are shown to be in same direction

Corrected To : The diagram has been modified to show the correct directions of t-RNA and m- RNA.

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BIOLOGY IN HUMAN WELFARE

HUMAN HEALTH & DISEASE

- 49. Wrong Statement: NCERT XII; pg 162 – AIDS can be transmitted to one's life partner through sexual contact while hepatitis B is transmitted through infected blood.**

Corrected To: Both can be transmitted through sexual contact or infected blood.

- 50. Wrong Statement: Drugs like barbiturates, amphetamines, benzodiazepines, lysergic acid diethyl amides (LSD), and other similar drugs, that are normally used as medicines to help patients cope with mental illnesses like depression and insomnia, are often abused. (+2 NCERT, pg 159).**

Corrected To: LSD has been deleted from this list of drugs used as medicines.

- 51. Wrong Statement: In earlier Reprints of +2 Biology Textbook, Mosquito intestine was mentioned in place of mosquito stomach at two places in life cycle of Plasmodium [Figure 8.1 Stages in life cycle of Plasmodium, pg 148]. In current reprints error has been rectified at one place but not at the second place. It should be Mosquito stomach at both the places.**

Corrected to – Mosquito Gut at both places in the Diagram of Life Cycle of *Plasmodium*.

STRATEGIES FOR ENHANCEMENT IN FOOD PRODUCTION

52. **Wrong Statement:** Under Tissue Culture somatic hybridisation between protoplasm of tomato and potato resulted in formation of tomato. Page No. 177; NCERT (XII).

Corrected To: Tissue culture somatic hybridisation between protoplasm of tomato and potato resulted in formation of **pomato**.

53. **Wrong Statement:** (NCERT XII; pg 195) – The convention for naming the restriction enzymes is the first letter of the name comes from the genes and the second two from the species.

Corrected To: “genus” instead of “genes”.

BIOTECHNOLOGY & ITS APPLICATIONS

54. **Wrong Statement:** Pg 211; NCERT (XII) – Figure 12.3, The colour of A peptide should be blue and that of the B peptide should be green after being separated from the ‘C’ peptide.

Corrected To: Colours have been corrected.

ECOLOGY

ORGANISMS AND POPULATIONS

55. **Wrong Statement:** Pg 222; (NCERT XII), Salinity of hypersaline lagoons is mentioned as > 100 percent.

Corrected To : > 100 parts per thousand.

ECOSYSTEM

56. **Wrong Statement:** Primary production is expressed as g-2 in terms of weight. Rate of biomass production or productivity is expressed in terms of weight as g-2 yr-1 (Page no. 243; NCERT (XII)).

The correct units are as follows:

Primary production is expressed in terms of weight (gm-2) or energy (kcal m-2).

Productivity (Rate of Biomass production) is expressed in terms of weight (gm-2) yr -1 or energy (kcalm-2) yr -1.

Corrected to: The units have been corrected .

57. **Wrong Statement:** Pg 245; (NCERT XII); Chemosynthetic bacteria have been called autotrophs which fix sun’s energy.

Corrected To: Chemosynthetic bacteria have been deleted from the list of Photoautotrophs.

- 58. Wrong Statement:** In primary succession in water. Page 251 (In the theory) it says.

The pioneers are the small phytoplanktons, they are replaced by free floating angiosperms, then by rooted hydrophytes, sedges, grasses and finally the trees.

Corrected To: In primary succession in water, the pioneers are the small phytoplanktons, they are replaced with time by rooted-submerged plants, rooted-floating angiosperms followed by free-floating plants, then reed-swamp, marsh-meadow, scrub and finally the trees. The climax again would be a forest.

- 59. Wrong Statement:** The arrow shown in the carbon cycle from Burning forests and fuelwood is pointed in the wrong direction (Fig 14.6, Pg 253, NCERT XII).

Corrected To: The direction of arrow has been corrected.

ENVIRONMENTAL ISSUES

- 60. Wrong Statement:** On pg. No. 276 (NCERT XII), in the text matter, the levels of DDT in water are given in units – parts per billion (0.003 ppb) but in the accompanying diagram the levels are given in units – parts per million (0.003 ppm).

Corrected To: In the accompanying diagram the levels have been corrected to units – parts per billion (0.003 ppb).

- 61. Wrong Statement:** According to **Euro II Norms**, the amount of Sulphur is to be controlled at 350 parts per million in diesel and at 150 ppm in petrol (Page No. 273; NCERT XII). The Euro II norms given by NCERT do not match with those given on the internet on various sites.

Corrected To: According to **Euro III Norms**, the amount of Sulphur is to be controlled at 350 parts per million in diesel and at 150 ppm in petrol.

List of erroneous facts accepted and intimated to Dr. Arvind Goyal by the NCERT in March 2018.

1) STRUCTURAL ORGANISATION IN ANIMALS; PAGE 109; NCERT-XI

ERRONEOUS FACT: Figure 7.11, Closed circulatory system of earthworm:

Labelling of sub neural vessel is wrong.

CORRECTION: The vessel which has been labelled as sub neural vessel, is actually ventral vessel. The sub neural vessel is the vessel lying below this vessel in the figure.

Accepted

2) CELL: THE UNIT OF LIFE; PAGE 137; NCERT-XI

ERRONEOUS FACT: The axoneme usually has nine pairs of doublets of radially arranged peripheral microtubules.

CORRECTION: The axoneme usually has nine doublets (and not nine pairs of doublets) of radially arranged peripheral microtubules.

Accepted

3) CELL CYCLE AND CELL DIVISION; PAGE 164; NCERT-XI

ERRONEOUS FACT: In animals, mitotic cell division is only seen in the diploid somatic cells.

CORRECTION: It is well known fact that some animals are formed by parthenogenesis. In these animals mitosis occurs in haploid cells also and that is how they grow. Examples of these animals like rotifers, honeybees, some lizards and some birds (turkey) are given in NCERT Textbook of Biology for Class XII (page-14).

Accepted

4) BODY FLUIDS AND CIRCULATION; PAGE 284; NCERT – XI

ERRONEOUS FACT: A bundle of nodal fibres, atrioventricular bundle (AV bundle) continues from the AVN which passes through the atrio-ventricular septa to emerge on top of the inter-ventricular septum and immediately divides into a right and left bundle. These branches give rise to minute fibres throughout the ventricular musculature of the respective sides and are called Purkinje fibres. **These fibres along with right and left bundles are known as bundle of His.**

CORRECTION: Bundle of His is the term used for Atrio-ventricular bundle (AV bundle). The bundle of His divides into right and left bundle branches which further divide into Purkinje fibres.

Accepted and corrected , the wrong line "These fibres along with right and left bundles are known as bundle of His." has been deleted.

5) MOLECULAR BASIS OF INHERITANCE; PG 120; NCERT XII

ERRONEOUS FACT: Under the heading 'Salient features of Human Genome' in sub point (i) it says – "The human genome contains 3164.7 million nucleotide bases".

Whereas on page 118 and page 121 it is mentioned that, "The Human genome has approximately 3×10^9 base pairs".

CORRECTION: Now, 3×10^9 base pairs = $(3 \times 10^9) \times 2$ nucleotide bases
= 6×10^9 nucleotide bases

Thus on page 120; the given fact that the human genome has 3164.7 million nucleotide bases is wrong.

As 3164.7 million nucleotide bases = 3164×10^6 nucleotide bases.

= 3.164×10^9 nucleotide bases.

It should be $(3.164 \times 10^9) \times 2$ nucleotide bases.

Accepted, on page 120 it has been changed to 3164.7 million bp.

6) HUMAN HEALTH AND DISEASE: Pg. 158; NCERT XII

ERRONEOUS FACT: The given structure in Fig 8.7 is labelled as 'Structure of Morphine'.

CORRECTION: This is incorrect as the structure of morphine is $C_{17}H_{19}NO_3$ as per Textbook of Pharmacology by Tata McGraw. The structure labelled incorrectly in the NCERT resembles that of Cocaine instead of Morphine.

Accepted , the correct chemical structure of Morphine has been given.

7) BIOTECHNOLOGY: PRINCIPLES AND PROCESSES; Pg. 199; NCERT XII

ERRONEOUS FACT: Regarding ligation of alien DNA at a restriction site present in BamH I site of tetracycline resistance in the vector pBR322, it is mentioned that – The recombinant plasmids can be selected from the non-recombinant ones by plating the transformants on ampicillin.

CORRECTION: This is incorrect, as in this case the transformants and non-transformants can be selected by plating them on ampicillin. Then further the recombinants can be selected from the non-recombinants by plating the transformants on **tetracycline**.

Accepted, the line has been corrected as pointed out above.

8) BIOMOLECULES ; Page 145; NCERT- XI

ERRONEOUS FACT: The skeletal structure of Cholesterol given in Fig 9.1 is not fully correct.

ERROR: There should be a **Double bond** between the Carbon atoms 5 and 6 as given in Textbook of Biochemistry by Lippincott and in many other Standard Textbooks of Biochemistry.

Accepted

9) MINERAL NUTRITION ; Page-202; NCERT-XI

“Examples of free-living nitrogen- fixing aerobic microbes are Azotobacter and Beijernickia while Rhodospirillum is anaerobic and Bacillus free-living.”

Something seems to be missing in this statement in relation to Bacillus. When all the other bacteria mentioned here are also free-living, the part of the statement, “Bacillus free living” is not making any sense. **Accepted**

10) ENVIRONMENTAL ISSUES; Page 273; NCERT – XII

The Table 16.1 shows the Mass Emission Standards in India. As the Hon'ble Supreme Court has implemented BS IV norms for all vehicles from 1st April 2017, this table must be updated accordingly.

Accepted

11) ENVIRONMENTAL ISSUES; Page 284; NCERT – XII

It is mentioned, “By the end of the century, forest cover shrunk to 19.4 percent. “Although the given fact is not erroneous but in the light of India State of Forest Report 2015 released by Ministry of Environment and Forests, this data should be updated. According to this report the total forest cover has increased to 24.16%.

Accepted