



# BIOLOGY

## BOOKS - TRUEMAN'S BIOLOGY (ENGLISH)

### Living World

#### Assertion And Reason

1. [A] :Biology is regarded as science of exceptions.

[R]: Biological sciences deal with living organisms found in different climatic conditions .

A. If both A and R are true and R is the correct explanation of A

B. If both A and R are true but R is not the correct explanation of A

C. If A is true and R is false

D. If both A and R are false

**Answer:**





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2. [A] : Energy transformations are important for living cells.

[R] : Organisms show variation and changes due to mutations and genetic recombinations.

A. If both A and R are true and R is the correct explanation of A

B. If both A and R are true but R is not the correct explanation of A

C. If A is true and R is false

D. If both A and R are false

**Answer:**



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3. [A]: Dhanvantari is regarded as the god of medicine .

[R] : Susruta is acknowledged as the father of surgery.

- A. If both A and R are true and R is the correct explanation of A
- B. If both A and R are true but R is not the correct explanation of A
- C. If A is true and R is false
- D. If both A and R are false

**Answer:**



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4. [A] : Susruta is one of the earliest scientists who studied human anatomy

[R] : Susruta carried out plastic surgery of human nose and used leeches for preventing man nose and used leeches for preventing clotting of blood in post operative cases.

A. If both A and R are true and R is the correct explanation of A

B. If both A and R are true but R is not the correct explanation of A

C. If A is true and R is false

D. If both A and R are false

**Answer:**



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5. [A] : Control experiment is meant for confirming the validity of experiment .

[R] : Control experiment has no relationship with the actual experiment .

A. (a) If both A and R are true and R is the correct explanation of A

B. (b) If both A and R are true but R is not the correct explanation of A

C. (c) If A is true and R is false

D. (d) If both A and R are false

**Answer:**



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6. [A] : Living organisms do not interact with each other.

[R] : All living organisms have originated independently.

A. If both A and R are true and R is the correct explanation of A

B. If both A and R are true but R is not the correct explanation of A

C. If A is true and R is false

D. If both A and R are false

**Answer:**



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7. [A] : Living organisms are like a close system

.

[R] : Energy in the organisms neither can be lost nor gained from the another environment

.

A. If both A and R are true and R is the correct explanation of A

B. If both A and R are true but R is not the correct explanation of A

C. If A is true and R is false

D. If both A and R are false

**Answer:**



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**8. [A] :** Energy can be transformed from one form to another by living organisms.

[R] : All organisms can not manufacture energy but they transform it

A. If both A and R are true and R is the correct explanation of A

B. If both A and R are true but R is not the correct explanation of A

C. If A is true and R is false

D. If both A and R are false

**Answer:**



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9. [A] : Study of internal structure is called Anatomy.

[R] : It is useful for phylogenetic study.

A. (a) If both A and R are true and R is the correct explanation of A

B. (b) If both A and R are true but R is not the correct explanation of A

C. (c) If A is true and R is false

D. (d) If both A and R are false

**Answer:**



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**10. [A] :** Saline drop contains sodium chloride.

**[R] :** Sodium chloride cause plasmolysis of all germ cells .

A. If both A and R are true and R is the correct explanation of A

B. If both A and R are true but R is not the correct explanation of A

C. If A is true and R is false

D. If both A and R are false

**Answer:**



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**11.** Assertion. Lysosomes help in the process of photorespiration.

Reason. Lysosomes contain basic enzymes.

- A. If both A and R are true and R is the correct explanation of A
- B. If both A and R are true but R is not the correct explanation of A
- C. If A is true and R is false
- D. If both A and R are false

**Answer:**



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12. [A] : The plasmalemmas of animals cells typically have the oligosaccharide chains of their glycolipids and exposed freely on their surfaces .

[R] : These play important roles in immunological responses , in cell-cell adhesion and identification of cell surface changes.

A. (a) If both A and R are true and R is the correct explanation of A

B. (b) If both A and R are true but R is not the correct explanation of A

C. (c) If A is true and R is false

D. (d) If both A and R are false

**Answer:**



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**13. [A] :** Mitochondria are called power houses of the cell.

**[R] :** Mitochondria produces ATP by the break-

down of carbohydrates into carbon dioxide (of carbohydrates) and water .

A. (a) If both A and R are true and R is the correct explanation of A

B. (b) If both A and R are true but R is not the correct explanation of A

C. (c) If A is true and R is false

D. (d) If both A and R are false

**Answer:**



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14. [A] : Lysosomes are also known as Suicidal bags of the cells .

[R] : Lysosomes digest food contents of the phagosomes .

A. (a) If both A and R are true and R is the correct explanation of A

B. (b) If both A and R are true but R is not the correct explanation of A

C. (c) If A is true and R is false

D. (d) If both A and R are false

**Answer:**



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15. [A] : Chloroplasts contain circular DNA , rRNA , mRNA and are also able to conduct protein synthesis .

[R] : Origin of chloroplasts is from the proplastids.

A. If both A and R are true and R is the correct explanation of A

B. If both A and R are true but R is not the correct explanation of A

C. If A is true and R is false

D. If both A and R are false

**Answer:**



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**16. [A] :** Mitochondria synthesize energy rich compounds called ATP .

**[R] :** Mitochondria perform important functions such as oxidation , dehydrogenation and oxidative phosphorylation .

A. If both A and R are true and R is the correct explanation of A

B. If both A and R are true but R is not the correct explanation of A

C. If A is true and R is false

D. If both A and R are false

**Answer:**



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**17. [A] :** Chloroplasts have 75% chlorophyll a and 25% chlorophyll b

**[R] :** Chloroplasts have 50% chlorophyll a and 50% chlorophyll b .



A. (a) If both A and R are true and R is the correct explanation of A

B. (b) If both A and R are true but R is not the correct explanation of A

C. (c) If A is true and R is false

D. (d) If both A and R are false

**Answer:**



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**18. [A] :** Peroxisomes occur , both in plants and animals .

**[R] :** Peroxisome is a microbody .

A. If both A and R are true and R is the correct explanation of A

B. If both A and R are true but R is not the correct explanation of A

C. If A is true and R is false

D. If both A and R are false

**Answer:**



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**19. [A] :** Glyoxysome are present only in plant cells .

**[R] :** They are found in yeast , Neurospora and oil rich seeds .

A. If both A and R are true and R is the correct explanation of A

B. If both A and R are true but R is not the correct explanation of A

C. If A is true and R is false

D. If both A and R are false

**Answer:**



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**20.** Assertion. The nuclear envelope acts as an interface between the genetic component of the cell and the cytoplasm.

Reason. It thus protects DNA against the mutagenic effect of cytoplasmic enzyme

A. If both A and R are true and R is the correct explanation of A

B. If both A and R are true but R is not the correct explanation of A

C. If A is true and R is false

D. If both A and R are false

**Answer:**



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21. [A] : One or many nucleoli are present in a nucleus .

[R] :The nuclei of polyploids have more nucleoli than those of diploids .

A. If both A and R are true and R is the correct explanation of A

B. If both A and R are true but R is not the correct explanation of A

C. If A is true and R is false

D. If both A and R are false

**Answer:**



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**22. [A] :** Nucleus controls metabolic as well as hereditary activities of the cell.

**[R] :** Size of nucleus is related to the size of the chromosomes .

A. (a) If both A and R are true and R is the correct explanation of A

B. (b) If both A and R are true but R is not the correct explanation of A

C. (c) If A is true and R is false

D. (d) If both A and R are false

**Answer:**



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**23. [A]** : Homeostasis is the maintenance of a stable internal environment .

**[R]** : Homeostasis involves the coordination of cells , tissues and organ systems .

A. If both A and R are true and R is the correct explanation of A

B. If both A and R are true but R is not the correct explanation of A

C. If A is true and R is false

D. If both A and R are false

**Answer:**



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**24. [A] :** Usually the cells of animals and plants have controlled growth .

**[R] :** In certain special circumstances the cells begin to grow and multiply continuously , forming tumors.

A. (a) If both A and R are true and R is the correct explanation of A

B. (b) If both A and R are true but R is not the correct explanation of A

C. (c) If A is true and R is false

D. (d) If both A and R are false

**Answer:**



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**25. [A] :** Behavioural activities that are correlated with a one week cycle under fairly constant conditions are called circadian

rhythms .

[R] : Experiments have proved that biological clock is entirely internal.

A. If both A and R are true and R is the correct explanation of A

B. If both A and R are true but R is not the correct explanation of A

C. If A is true and R is false

D. If both A and R are false

**Answer:**





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26. [A] : Prokaryotic cell shows no cyclosis.

[R] : Eukaryotic cell shows the absence of cytoplasmic streaming .

A. If both A and R are true and R is the correct explanation of A

B. If both A and R are true but R is not the correct explanation of A

C. If A is true and R is false

D. If both A and R are false

**Answer:**



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27. [A] : No energy can be released in the cell in the absence of mitochondria.

[R] : Because all the enzymes of the cell respiration are present in it.

- A. If both A and R are true and R is the correct explanation of A
- B. If both A and R are true but R is not the correct explanation of A
- C. If A is true and R is false
- D. If both A and R are false

**Answer:**



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28. [A] : The lymphocytes have well developed lysosomes .

[R] : Because they defend the body during bacterial infection.

A. If both A and R are true and R is the correct explanation of A

B. If both A and R are true but R is not the correct explanation of A

C. If A is true and R is false

D. If both A and R are false



**Answer:**



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**29. [A] :** Prokaryotes lack Mitochondria.

**[R] :** Their plasma membrane bears respiratory enzymes .

A. If both A and R are true and R is the correct explanation of A

B. If both A and R are true but R is not the correct explanation of A

C. If A is true and R is false

D. If both A and R are false

**Answer:**



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**30. [A] :** Nuclear membrane of karyotheca forms an envelope-like structure called nuclear envelope around the nuclear contents .

**[R] :** Each membrane is about 75-90 Å thick and lipoproteinous in nature .

A. 1. If both A and R are true and R is the correct explanation of A

B. 2. If both A and R are true but R is not the correct explanation of A

C. 3. If A is true and R is false

D. 4. If both A and R are false

**Answer:**



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**31. [A]** : The space between nuclear envelope and nucleolus is filled by karyoplasm .

**[R]** : The nuclear components such as chromatin , threads , nucleoprotein granules , nucleolus , etc . Remain suspended in nucleoplasm.

A. If both A and R are true and R is the correct explanation of A

B. If both A and R are true but R is not the correct explanation of A

C. If A is true and R is false

D. If both A and R are false

**Answer:**



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**32. [A] :** Leucocytes can digest any thing harmful they eat .

**[R] :** Leucocytes contain large number of lysosomes .

- A. If both A and R are true and R is the correct explanation of A
- B. If both A and R are true but R is not the correct explanation of A
- C. If A is true and R is false
- D. If both A and R are false

**Answer:**



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**33. [A]** : The nuclear membrane forms envelope like structure called nuclear envelope around nuclear contents .

**[R]** : The nuclear envelopes separate the nucleoplasm from protoplasm .

A. If both A and R are true and R is the correct explanation of A

B. If both A and R are true but R is not the correct explanation of A

C. If A is true and R is false

D. If both A and R are false

**Answer:**



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**34. [A] :** The nuclear envelope is the derivative of membrane of mitochondria .

**[R] :** Nuclear membrane does not allow free exchange of ions between the nucleus and the cytoplasm .



A. (a) If both A and R are true and R is the correct explanation of A

B. (b) If both A and R are true but R does not explain A

C. (c) If A is true and R is false

D. (d) If both A and R are false

**Answer:**



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**35. [A] :** Rods and cones of retina are modified cilia .

**[R] :** Cilia are contractile structure in which metachronic and isochronic rhythms produce wave of contractions .

A. (a) If both A and R are true and R is the correct explanation of A

B. (b) If both A and R are true but R is not the correct explanation of A

C. (c) If A is true and R is false

D. (d) If both A and R are false

**Answer:**



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**36. [A] :** Golgi bodies and dictyosomes are synonymous .

**[R] :** In plants the name of Golgi bodies is dictyosomes .

- A. If both A and R are true and R is the correct explanation of A
- B. If both A and R are true but R is not the correct explanation of A
- C. If A is true and R is false
- D. If both A and R are false

**Answer:**



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**37. [A] :** Mitochondria have evolved from bacteria .

**[R] :** Mitochondria and Bacteria both have circular DNA .

A. If both A and R are true and R is the correct explanation of A

B. If both A and R are true but R is not the correct explanation of A

C. If A is true and R is false

D. If both A and R are false

**Answer:**



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**38. [A] :** Calcium carbonate crystals are called cystoliths .

**[R] :** The main body of a cystolith is a cellulose extension of cell wall in which calcium carbonate is deposited .

A. If both A and R are true and R is the correct explanation of A

B. If both A and R are true but R is not the correct explanation of A

C. If A is true and R is false

D. If both A and R are false

**Answer:**



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**39. [A] :**  $F_0 - F_1 - ATPase$  complex is embedded in inner membrane of mitochondrion.

[R] : It has five polypeptides in  $F_1$  and four in  $F_0$  . Protons enter the mitochondrion through  $F_0$  . ATP synthesis is catalysed by ATPase present in  $F_1$  .

- A. If both A and R are true and R is the correct explanation of A
- B. If both A and R are true but R is not the correct explanation of A
- C. If A is true and R is false
- D. If both A and R are false



**Answer:**



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**40. [A] :** Centromere is concerned with splitting of chromosomes .

**[R] :** Oxysome is present in centromere to split it .

A. If both A and R are true and R is the correct explanation of A

B. If both A and R are true but R is not the correct explanation of A

C. If A is true and R is false

D. If both A and R are false

**Answer:**



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**41. [A] :** Peroxisomes and basal bodies are called microbodies .

[R] : Microbodies use free molecular oxygen like mitochondria.

A. If both A and R are true and R is the correct explanation of A

B. If both A and R are true but R is not the correct explanation of A

C. If A is true and R is false

D. If both A and R are false

**Answer:**



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**42. [A]** : A microtubule structure that brings about chromosomal movement during cell division .

**[R]** : A carbohydrates that cycles in quantity as the cell cycle progresses , combines with and activities kinases to promote the events of cell cycle .

A. If both A and R are true and R is the correct explanation of A

B. If both A and R are true but R is not the correct explanation of A

C. If A is true and R is false

D. If both A and R are false

**Answer:**



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**43.** [A] : Active transport results in solute movement against a concentration gradient .

[R] : Active transport of  $Na^+$ ,  $K^+$  is energized by ATP .

A. If both A and R are true and R is the correct explanation of A

B. If both A and R are true but R is not the correct explanation of A

C. If A is true and R is false

D. If both A and R are false

**Answer:**



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44. [A] : Plasma membrane is thin and not visible as a separate layer .

[R] : It appears merely as a surface layer of cytoplasm .

A. If both A and R are true and R is the correct explanation of A

B. If both A and R are true but R is not the correct explanation of A

C. If A is true and R is false

D. If both A and R are false

**Answer:**



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**45. [A] :** Pectins are abundant in middle lamella in plant cells .

[R] : Some cells in woody plants have a secondary wall that is found inside the primary wall .



A. If both A and R are true and R is the correct explanation of A

B. If both A and R are true but R is not the correct explanation of A

C. If A is true and R is false

D. If both A and R are false

**Answer:**



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**46.** Assertion : Mitochondria and chloroplasts are semiautonomous organelles.

Reason : They are formed by division of pre-existing organelles as well as contain DNA but lack protein synthesizing machinery

A. (a) If both A and R are true and R is the correct explanation of A

B. (b) If both A and R are true but R is not the correct explanation of A

C. (c) If A is true and R is false

D. (d) If both A and R are false

**Answer:**



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**47.** Assertion: Among the primates, chimpanzee is the closest relative of the present day humans.

Reason : The banding pattern in the autosome numbers 3 and 6 of man and chimpanzee is remarkably similar.

- A. If both A and R are true and R is the correct explanation of A
- B. If both A and R are true but R is not the correct explanation of A
- C. If A is true and R is false
- D. If both A and R are false

**Answer:**



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