



# BIOLOGY

## BOOKS - TRUEMAN BIOLOGY

### 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]: Dhanvantari is regarded as the god of medicine .

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

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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**3. [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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4. [A] : Control experiment is meant for confirming the validity of experiment .

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

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

.

[R] : Energy in the organisms neither can be



lost nor gained from the another environment

.

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 false and R is true

D. 4) If both A and R are false

**Answer:**



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

[R] : It is useful for phylogenetic study.

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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9. [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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**10. 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 false and R is true

D. If both A and R are false

**Answer:**



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

[R] : Mitochondria produces ATP by the breakdown of carbohydrates into carbon dioxide (of carbohydrates) and water .

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

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

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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**14. [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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**15. [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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**16. [A] :** Chloroplasts have 75% chlorophyll a and 25% chlorophyll b

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

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

**[R] :** They are the cell's garbage disposal system.

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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**18. [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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**19. 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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**20. [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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21. [A] : Nucleus controls different metabolic as well as hereditary activities of the cell.

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

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] :** 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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**23. [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. 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] : 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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**25. [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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**26. [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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27. [A] : Nuclear membrane or 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. 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 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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29. [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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**30. [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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**31. [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. 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] :** Rods and cones of retina are modified cilia .

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

- 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] :** 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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**34. [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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**35. [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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**36. [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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**37. [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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**38. [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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**39. [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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40. [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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**41. [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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**42. [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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**43.** 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. 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.** 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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