

**Class : XI**

**Subject: Biology      HOLIDAY HOMEWORK**

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| 1. Which tissue of animals and plants exhibits meiosis?   | 1 |
| 2. Given that the average duplication time of E.coli is 20 minutes, how much time will two E.coli cells take to become 32 cells?  | 1 |
| 3. At what stage of cell cycle does DNA synthesis take place?   | 1 |
| 4. It is said that the one cycle of cell division in human cells (eukaryotic cells) takes 24 hours. Which phase of the cycle, do you think occupies the maximum part of cell cycle? | 1 |
| 5. What is the value of water potential of pure water at atmospheric pressure?  | 1 |
| 6. What is guttation? When does it normally occur?  | 1 |
| 7. Mention one point of difference between diffusion and facilitated diffusion.   | 1 |
| 8. Define imbibition.   | 1 |
| 9. It is observed that heart cells do not exhibit cell division. Such cells do not divide further and exit _____ phase to enter an inactive stage called _____ of cell cycle.       | 2 |
| 10. The following events occur during the various phases of the cell cycle, Name the phase against each of the events.  |   |
| a. Disintegration of nuclear membrane _____   |   |
| b. Appearance of nucleolus _____  |   |
| c. Division of centromere _____   |   |
| d. Replication of DNA _____   | 2 |
| 11. How does movement of chromosome occur during mitotic phase?   | 2 |
| 12. Mention two characteristics of membrane proteins.   | 2 |
| 13. What is solute potential? How does it influence water potential?  | 2 |
| 14. Minerals are transported actively into the root hair. Give reasons.   | 2 |
| 15. Write significances of imbibition pressure.   | 2 |

16. How does cytokinesis in plant cells differ from that in animal cells? 3
17. Comment on the statement – Telophase is reverse of prophase. 3
18. What are the various stages of meiotic prophase-I? Enumerate the chromosomal events during each stage? 3
19. Write brief note on the following a. Synaptonemal complex b. Metaphase plate 3
20. Give reason for the following statements:
  - a) Mitosis is equational division b) Meiosis is reduction division 3
21. Write the significance of mitosis. 3
22. List the significance of meiosis. 3
23. Enumerate the processes occurring during the four stages of mitosis. 3
24. Differentiate between Turgid cells and flaccid cells. Bring out the advantages of turgidity to plant cells. 3
25. What happens when a pressure greater than the atmospheric pressure is applied to pure water or a solution. 3
26. What are uniport, symport and antiport? 3
27. Explain the cohesion-tension theory of ascent of sap in tall trees. 3
28. Give an account of pressure flow hypothesis of translocation of sugars in plants. 5
29. Describe active absorption of water through osmotic mechanisms. 5
30. With the help of a table , compare diffusion, facilitated diffusion and active transport. 5