



BIOLOGY

BOOKS - CENGAGE BIOLOGY

CELL: THE BASIC UNIT OF LIFE

Mandatory Exercise Exercise Set I

1. A friend tells you that he reads somewhere that rotting garbage can turn into maggots, which are fly larvae, and the maggots then can

grow into adult flies. What part of the cell theory will you use to refuse his claim?



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2. _____ discovered cells while looking at a piece of cork under the micro-scope.



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3. If the eyepiece lens magnifies 10 times, what objective lens will give 400X magnification?

A. 0.4 X

B. 4 X

C. 40X

D. 400X

Answer: C



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4. Mark the following statement as True or

False:

The cell membrane is impermeable.



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5. Mark the following statement as True or False:

Cell walls are found in plant cells and fungi



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6. Mark the following statement as True or False:

Human cells are prokaryotic cells.





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7. Mark the following statement as True or False:

An ostrich egg cell is the largest known cell.



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8. Mention the kind of study made under the following branches of science

Taxonomy



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9. Mention the kind of study made under the following branches of science

Genetics



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10. Mention the kind of study made under the following branches of science

Histology



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11. Mention the kind of study made under the following branches of science

Ecology



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12. For each item in column A, write the letter of the matching item in column B.

Column A	Column B
(i) The basic unit is the cell	(p) Development
(ii) Maintenance of a stable internal environment	(q) Growth
(iii) Reaction to a change in the environment	(r) Homeostasis
(iv) Cell enlargement and division	(s) Organisation
(v) Changes in an organism that take place over time	(t) Reproduction
(vi) Transmission of hereditary information from one generation to the next	(u) Response to stimulus



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13. Using what you know about the characteristics of life, determine whether each of the following describes a living or nonliving

thing.

Rust on a bucket _____



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14. Using what you know about the characteristics of life, determine whether each of the following describes a living or nonliving thing.

An apple on a tree _____



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15. Using what you know about the characteristics of life, determine whether each of the following describes a living or nonliving thing.

Bacteria _____



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16. Using what you know about the characteristics of life, determine whether each of the following describes a living or nonliving

thing.

A dinosaur fossil _____



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17. Using what you know about the characteristics of life, determine whether each of the following describes a living or nonliving thing.

A wasp _____



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18. Plasma membrane is known as _____ membrane.



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19. Passive transport includes two types of movement across membranes. They are _____ and _____. How do they differ?



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20. For active transport to occur, the following must be present.

- A. Carrier proteins, ATP, and cell membrane
- B. Carrier proteins, ADP, and cell membrane
- C. ATP, cell membrane, and vacuole
- D. Cell membrane, water, and ATP

Answer: A



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Mandatory Exercise Exercise Set II

1. _____ is the material that makes up the cell wall in plants.



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2. _____ are the powerhouses of the cell and break down food to produce large amounts of energy.



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3. Expand ATP. Explain its role



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4. Lysosomes contain RNA and direct the production of proteins in a cell. True / False.



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5. Write the exact function of the lysosome.



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6. Centrioles take part in

A. muscle contraction

B. membrane architecture

C. DNA recognition

D. Cell division

Answer: D



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7. Differentiate between 70s and 80S ribosomes.



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8. Observe the relationship between the first two words and then fill in the suitable word at the fourth place.

Mitochondria : cristae : : chloroplast :



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9. Observe the relationship between the first two words and then fill in the suitable word at the fourth place.

Chloroplast : photosynthesis : : leucoplast :



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10. Observe the relationship between the first two words and then fill in the suitable word at the fourth place.

Nucleus : controlling centre of the cell : :

nucleolus : _____



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11. Label the parts of the plant cell depicted

below:

(A) _____

(B) _____

(C) _____

(D) _____

(E) _____

(F) _____

(G) _____

(H) _____

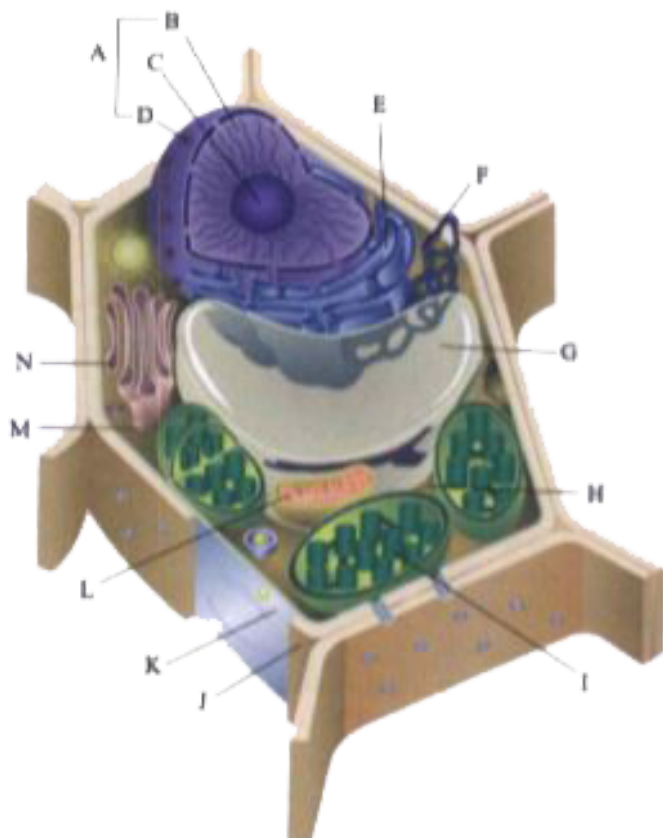
(I) _____

(J) _____

(K) _____

(M)

(N) _____



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12. This question consists of two statements each: assertion (A) and reason (R). To answer this question, mark the correct alternative as directed below.

Assertion: Ribosomes occur in both plant and animal cells.

Reason: They play a role in respiration.

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 but R is false

D. If both A and R are false

Answer: C



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13. Dictyosomes are also called _____.



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Mandatory Exercise Exercise Set Iii One Mark Questions

1. Define cell biology



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2. Who discovered the cell?



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3. What is the chemical composition of cell wall in plant, fungi and bacteria?



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4. Who proposed the cell theory?



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5. What will happen if a plant cell and animal cell are placed in a hypertonic solution?



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6. What is the outermost layer found in the plant and animal cell?



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7. Name two structures found only in animal cells and not in plant cells.



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8. Is plasma membrane living or dead ?



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9. Name the biomolecules present in plasma membrane.



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10. Define with example:

Permeable membrane





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11. Define with example:

Semi-permeable membrane



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12. Define with example:

Selectively permeable membrane



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13. Define with example:

Impermeable membrane



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14. Who proposed the first lamellar model?



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15. What is a hypotonic solution ?



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16. Define:

Hypertonic Solution



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17. Define:

Isotonic Solution



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18. Define:

Osmosis



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19. Define Diffusion.



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20. What is endocytosis and exocytosis?



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21. Give an example for:

Single membrane bound organelles



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22. Give an example for:

Double membrane bound organelles



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23. Give an example for:

Without membrane bound organelles



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24. Name the scientists who discovered:

Mitochondria



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25. Name the scientists who discovered:

Chloroplast



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26. Name the scientists who discovered:

Endoplasmic reticulum



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27. Name the scientists who discovered:

Golgi body



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28. Name the scientists who discovered:

Lysosome



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29. Name the scientists who discovered:

Vacuole



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30. Name the scientists who discovered:

Nucleus



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31. Name the scientists who discovered:

Chromosome



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32. Name the organelles for the following:

Power house of the cell



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33. Name the organelles for the following:

Photosynthetic organelles



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34. Name the organelles for the following:

Suicidal bag



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35. Name the organelles for the following:

Secretory organelles



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36. Name the organelles for the following:

Ribosomal factory



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37. Name the organelles for the following:

Site of protein synthesis



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38. Name the organelles for the following:

Osmoregulatory organelles



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39. Name the organelles for the following:

Lipid storage organ



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40. How many number of chromosomes are

present in

Human



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41. How many number of chromosomes are present in

Drosophila



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42. How many number of chromosomes are present in

Maize



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43. How many number of chromosomes are present in

Wheat



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44. How many number of chromosomes are present in

Ophioglossum



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45. How many number of chromosomes are present in

Haplopappus



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46. How many number of chromosomes are present in

Gorilla



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47. How many number of chromosomes are present in

Ascaris



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48. How many number of chromosomes are present in

Mucor



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49. Fill in the blanks:

Plant cell without cell wall is called _____



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50. Fill in the blanks:

Mitoplast - Mitochondria - _____ .



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51. Fill in the blanks:

Cell coat is present in _____ .



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