



**Q1(A) Write the correct alternative :**

**(3)**

- (1) Cell division occurring in somatic cells is ..... .
- a) mitosis  
b) diakinesis  
c) meiosis  
d) diplotene
- (2) Spindle fibers attach to which part of the chromosome?
- a) q-arm of chromosome  
b) Centromere  
c) p-arm of chromosome  
d) Centriole
- (3) The nuclear membrane disappears completely in ..... .
- a) Prophase  
b) Metaphase  
c) Anaphase  
d) Telophase

**(B) Answer the following questions as per the given instructions :**

**(2)**  
**(1)**

- (1) State true or false  
Carbohydrates are the body building nutrients.
- (2) Fill in the blank and rewrite the completed statements  
Our muscle cells perform \_\_\_\_\_ type of respiration during exercise.

**Q2(A) Give scientific reasons (any one) :**

**(2)**

- (1) Krebs's cycle is also known as citric acid cycle.
- (2) Oxygen is necessary for complete oxidation of glucose.

**(B) Answer the following (any one) :**

**(2)**

- (1) Define:
- (i) Proteins  
(ii) Nutrients
- (2) Distinguish between : aerobic and anaerobic respiration.

**Q3) Answer the following (any two) :**

**(6)**

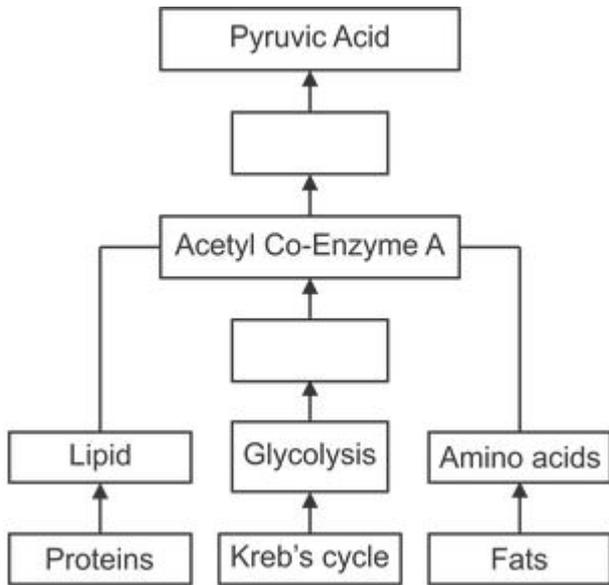
- (1) Why is ATP called as 'energy currency' of the cell?
- (2) i. Why some living organisms have to perform anaerobic respiration?  
ii. Give examples of such living organisms.  
iii. What are the two steps of anaerobic respiration?
- (3) Complete the paragraph.  
(ATP, mitochondria, external, internal, inhalation, alveolar, breathing, respiration exhalation, Nitrogen)  
Release of energy from the assimilated food is called ..... . Inhalation and exhalation is called .....

When ..... is done, air enters the lungs. The oxygen from this air enters the blood while carbon dioxide from the blood exits from the blood. Through exhalation, CO<sub>2</sub> is given out. This gaseous exchange occurs through ..... membrane. This is called ..... respiration. The RBC's carry oxygen to every cell. Here inside the ..... tissue respiration or ..... respiration takes place. The oxygen is used for production of energy. By oxidation of food nutrients, energy is released in the form of .....

**Q4) Answer any one of the following :**

**(5)**

(1) Redraw the flow-chart with corrections. Explain in brief the process of obtaining energy through oxidation of carbohydrates, lipids & proteins.



(2) With the help of suitable diagrams, explain the mitosis in detail.

All the Best