5. RESPIRATION
TEACHING TASK

SINGLE CORRECT ANSWER TYPE

1. Respiration is the process in which -

   (A) energy is stored in the form of ADP

   (B) energy is released and stored in the form of ATP

   (C) energy is not released at all

   (D) energy is used up

Correct Answer: (B)

Explanation: Respiration breaks down glucose to release energy stored as ATP.

2. Which of the following is the source of respiration -

   (A) Stored food (B) Fats (C) Glucose (D) Proteins

Correct Answer:(C)

Explanation: Glucose is the primary substrate for cellular respiration.

3. The form of energy used in respiration is -

   (A) Chemical energy (B) Electrical energy

   (C) Mechanical energy (D) Radiant energy

Correct Answer:(A)

Explanation: Respiration converts chemical energy in glucose to ATP.

4. Which one is anabolic process?

   (A) Respiration (B) Digestion
   (C) Photosynthesis (D) Ascent of sap

Correct Answer:(C)

Explanation: Photosynthesis builds complex molecules (anabolic), while respiration breaks them down (catabolic).

5. A catabolic process is -

   (A) Absorption of minerals (B) Ascent of sap

   (C) Respiration (D) Assimilation

Correct Answer: (C)

Explanation: Respiration breaks down molecules to release energy.

6. What is wrong about respiration

   (A) It does not occur in cell

   (B) Oxidation occurs without the use of enzymes

   (C) Energy is released in one step quickly

(D) All the above

Correct Answer:(D)

Explanation: All statements are incorrect - respiration occurs in cells, uses enzymes, and releases energy in multiple steps.

7. In anaerobic respiration in plants:
   (A) O_2 is taken in (B) O_2 is given out
   (C) CO_2 is taken in (D) CO_2 is given out

Correct Answer:(D)
Explanation: CO2 is produced as a byproduct.

8. Stomata open during day time because the guard cells:
   (A) are thin walled
   (B) are bean shaped
   (C) have to help in gaseous exchange
   (D) photosynthesize and produce osmotically active sugars or organic acids.

Correct Answer: (D)
Explanation: Photosynthesis in guard cells creates osmotic pressure to open stomata.

9. Which one of the following is the link between glycolysis and Kreb's cycle?
   (A) Phosphoenolpyruvic acid (B) Fumaric acid
   (C) Citric acid (D) Acetyl Co-A

Correct Answer:(D)
Explanation: Pyruvate converts to Acetyl Co-A to enter Krebs cycle.

10. Exchange of gasses occurs through
   (A) Stomata (B) Lenticels(C) Root surface (D) All the above

Correct Answer: (D)
Explanation: Plants use all these structures for gas exchange.

11. Exchange of gasses invloves
   (A) Osmosis (B) Diffusion (C) Imbibition (D) Suction pressure

Correct Answer: (B)
Explanation: Gases move by diffusion along concentration gradients.

12. They participate in respiration
   (A) Colourless cells (B) Coloured cells (C) Only green cells (D) All living cells

Correct Answer:(D)
Explanation: All living cells respire for energy.

13. Respiration is:
   (A) breaking down of complex organic substances into simple substances
   (B) transformation of potential energy into kinetic energy
   (C) liberation of energy
   (D) all of the above

Correct Answer:(D)
Explanation: All describe aspects of respiration.

14. Kreb's cycle takes place in:
   (A) mitochondria (B) chloroplast (C) ribosome (D) endoplasmic

Correct Answer: (A)
Explanation: Occurs in mitochondrial matrix.reticulum

15. Respiration takes place:
(A) in green parts of the plant only
(B) in all the living cells of the plants
(C) in living and dead cells of plants
(D) in those parts of the plant which are above the soil

Correct Answer:(B)

Explanation: Respiration happens in all living cells.

16. Evolution of CO_2 is more than in take of oxygen when:
(A) fats are respired (B) glucose is respired
(C) sucrose is respired (D) organic acids are respired

Correct Answer:(D)

Explanation: Organic acids have lower RQ (Respiratory Quotient).

17. Respiratory structures in the insects are -
(A) Gills (B) Skin (C) Lungs (D) Trachea

Correct Answer:(D)

Explanation: Insects have tracheal systems.

18. The narrowest and most numberous tubes of lungs are termed as -
(A) Bronchus (B) Bronchioles (C) Alveoli (D) None of these

Correct Answer:(B)

Explanation: Bronchioles are the smallest airways before alveoli.

19. A normal man respires in a minute -
(A) 10-15 times (B) 14-18 times (C) 20-25 times (D) 25-30 times

Correct Answer:(B)

Explanation: Average is 12-20 breaths/minute.

20. In anaerobic respiration -
(A) O_2 is given out (B) CO_2 is given out
(C) CO_2 is taken in (D) O_2 is taken in

Correct Answer: (B)

Explanation: CO2 is still produced.

21. The exchange of gases (O_2 and CO_2) in a mammal take place in -
(A) Trachea (B) Bronchi (C) Bronchioles (D) Alveoli

Correct Answer:(D)

Explanation: Alveoli are the actual gas exchange surfaces.

22. During inspiration muscles of diaphragm-
(A) Contracts (B) Expands (C) No effect (D) Coiled like string

Correct Answer: (A)

Explanation: Diaphragm contraction enlarges the chest cavity.

23. Expiration involves -

(A) Relaxation of diaphragm and intercostal muscles

(B) Contraction of diaphragm and intercostal muscles

(C) Contraction of diaphragm muscles

(D) Contraction of intercostal muscles

Correct Answer:(A)
Explanation: Passive process involving relaxation.

24. The structure which prevent the entry of food into respriatory tracts is -

(A) Pharynx (B) Larynx (C) Glottis (D) Epiglottis

Correct Answer: (D)

Explanation: Epiglottis covers trachea during swallowing.

25. In fever breathing rate -

(A) Increase (B) Decrease (C) Stop (D) None

Correct Answer:(A)

Explanation: Increased metabolic rate raises respiration.

26. Mammalian lungs are -

(A) Hollow (B) Solid and spongy (C) Spongy (D) None

Correct Answer:(C)

Explanation: Spongy due to millions of alveoli.

27. Haemolgobin is -

(A) Vitamin (B) Skin pigment (C) Blood carrier (D) Respiratory pigment

Correct Answer:(D)

Explanation: Binds oxygen in red blood cells.

28. If CO_2 concentration increases in blood then breathing will-

(A) Increases (B) Decreases (C) Stop (D) Remain unchanged

Correct Answer:(A)
Explanation: CO2 is the main respiratory stimulus.

29. In respiration, air passes through -

(A) Pharynx, Nasal cavity, Larynx, Trachea, Bronchi, Bronchiole, Lungs

(B) Nasal cavity, Pharynx, Larynx, Trachea, Bronchi, Bronchiole, Lungs

(C) Larnyx, Nasal cavity, Pharynx, Trachea, Lungs

(D) Larynx, Pharynx, Trachea, Lungs

Correct Answer: (B)
Explanation: Correct sequence: Nasal cavity, Pharynx, Larynx, Trachea, Bronchi, Bronchiole, Lungs

LEARNERS TASK

30. In which of the following animals,respiration occurs without respiratory organ ?

(A) Frog (B) Fish (C) Cockroach (D) Earthwarm

Correct Answer: (D)

Explanation: Earthworms respire through their moist skin (cutaneous respiration).

31. Rate of respiration is directly affected by -

(A) CO_2 concentration (B) O_2 in trachea

(C) Concentration of O_2 (D) Diaphragm expansion

Correct Answer: (C)

Explanation: The primary regulator is oxygen concentration in blood.

32. The maximum bonding of haemoglobin is with -

(A) Carbon monoxide (B) Carbondioxide

(C) Oxygen (D) Ammonia

Correct Answer: (A)

Explanation: CO binds 240 times more strongly than O2 to hemoglobin.

33. Most of the carbondioxide is carried in the blood as -

(A) Bicarbonates (B) Carbon monoxide

(C) Carbonic acid (D) Carbonates

Correct Answer: (A)

Explanation: About 70% CO2 converts to bicarbonate ions in blood.

34. The exchange of gases between the external air and the blood occurs in the

(A) bronchus (B) bronchiole (C) trachea (D) alveoli

Correct Answer: (D)

Explanation: Alveoli are the actual sites of gas exchange.

35. Anaerobic respiration is likely to occur in

(A) Ants (B) Earthworms (C) Echinoderms (D) Tapeworms

Correct Answer: (D)

Explanation: Tapeworms live in oxygen-poor intestinal environments.

36. In humans lungs, the lobes are

(A) 2 in left and 3 in right lungs (B) 3 in left and 2 in right lungs

(C) 3 in each lung (D) 2 in each lung

Correct Answer: (A)

Explanation: Left lung has 2 lobes, right has 3 to accommodate heart.

37. Oxygen is transported in vertebrates as

(A) dissolved in plasma (B) combined with Haemoglobin

(C) dissolved in cytoplasm of erythrocytes (D) absorbed over the RBC

Correct Answer: (B)

Explanation: 98% of oxygen binds to hemoglobin in RBCs.

38. Respiration is controlled by -

(A) cerebrum (B) cerebellum

(C) Medulla oblongata (D) olfactory lobe

Correct Answer: (C)

Explanation: Medulla contains the respiratory control center.

39. Respiration by lungs is called as -

(A) pulmonary respiration (B) cutical respiration

(C) bronchial respiration (D) cutaneous respiration

Correct Answer: (A)

Explanation: Pulmonary refers to lung-based respiration.

40. During expiration, the diaphragm becomes

(A) oblique (B) normal (C) flattened (D) dome- shaped

Correct Answer: (D)

Explanation: Diaphragm relaxes into dome shape during exhalation.

41. In human body, blood is oxygenated and purified in the -

(A) liver (B) kidneys (C) heart (D) lungs

Correct Answer: (D)

Explanation: Lungs oxygenate blood and remove CO2.

42. In mammals the body cavity is partitioned into thoracic and abdominal parts by

(A) liver (B) lungs (C) ribs (D) diaphragm

Correct Answer: (D)

Explanation: Diaphragm separates thoracic and abdominal cavities.

43. Which function is not performed by lungs?

(A) Elimination of carbon dioxide (B) Provision of oxygen

(C) Purification of blood (D) removal of nitrogenous waste

Correct Answer: (D)

Explanation: Kidneys remove nitrogenous wastes like urea.

44. The end product of anaerobic respiration is -

(A) CO_2 (B) H_2O (C) ethyl alcohol (D) A and C both

Correct Answer: (D)

Explanation: Produces both CO2 and alcohol (in yeast) or lactate (in muscles).

45. Amount of which of the following components in air does not change in process of respiration

(A) Oxygen (B) Carbon dioxide (C) Nitrogen (D) Water Vapour

Correct Answer: (C)

Explanation: Nitrogen is inert and not used in respiration.

46. Given below are some statements.

(a) The oxygen dependent respiration is called aerobic respiration.

(b) The requirement of water for photosynthesis is not essential.

(c) Gymnosperms such as pines are the vascular plants which produce seeds but no fruits.

(d) Root hairs provide increased surface area for gas exchange and absorption of water in plants.

Which one of the following alternatives is correct ?

(A) a is true, b is false (B) b is true, a is false

(C) b is true, c is false (D) d is true, a is false

Correct Answer: (D)

Explanation: (d) is correct; (b) is false as water is essential for photosynthesis.

47. Glottis is a passage for

(A) food (B) air(C) both of these (D) none of these

Correct Answer: (B)

Explanation: Glottis is the vocal cord opening for air passage.

48. The common phase between aerobic and anaerobic respiration is called

(A) glycolysis (B) Kreb's cycle

(C) tricarboxylic acid cycle (D) none of these

Correct Answer: (A)

Explanation: Glycolysis occurs in both respiration types.

49. Breathing rate in man is controlled by a part of the brain called

(A) thalamus

(B) hypothalamus

(C) medullar oblongata

(D) cerebellum

Correct Answer: (C)

Explanation: Medulla contains the respiratory pacemaker.