Step Academy official

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STUDENT NAME	
PAPER CODE	12175
TIME ALLOWED	150
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CLASS	New 1st Year (FSC/ICS)
SUBJECT	Biology
TOTAL MARKS	100
Paper Type	

Q1. Choose the correct answer. **17X1=17**

1. How does CO_2 enter the leaf?

(A) Through xylem **(B)** Through roots **(C)** Through stomata **(D)** Through veins

2. Gibberellins are mainly produced in:

(A) Mature leaves **(B)** Root caps **(C)** Apical portions of roots and shoots **(D)** Fruits only

3. Which hormone promotes lateral bud growth and breaks bud dormancy?

(A) Auxin **(B)** Cytokinin **(C)** Ethylene **(D)** Abscisic acid

4. In an isotonic solution, the net movement of water is:

(A) Into the cell **(B)** Out of the cell **(C)** Zero **(D)** Unpredictable

5. Which plants flower without being influenced by day length?

(A) Day-neutral plants **(B)** Short-day plants **(C)** Long-day plants **(D)** Annuals

6. How does gas exhange occur in the alveoli?

(A) Active transport **(B)** Osmosis **(C)** Diffusion between alveoli and surrounding capillaries **(D)** Secretion of enzymes

7. What is breathing or ventilation?

(A) Movement of food in the digestive tract **(B)** Movement of air in and out of the body **(C)** Movement of blood in arteries **(D)** Movement of muscles during exercise

8. How many oxygen molecules can one haemoglobin molecule carry?

(A) One **(B)** Two **(C)** Three **(D)** Four

9. How long is the treatment for pulmonary tuberculosis usually?

(A) 1 month **(B)** 3 months **(C)** 6 months **(D)** 9 months

10. Capillaries allow exchange of materials through:

(A) Osmosis only **(B)** Filtration only **(C)** Diffusion and active transport **(D)** Conduction

11. The coronary sinus drains blood into the:

(A) Left atrium **(B)** Right atriumv **(C)** Left ventricle **(D)** Right ventricle

12. The lymphatic ducts drain into the:

(A) Aorta **(B)** Vena cava **(C)** Subclavian veins **(D)** Pulmonary arteries

13. Which of the following is NOT an unpaired cranial bone?

(A) Frontal bone **(B)** Temporal bone **(C)** Occipital bone **(D)** Sphenoid bone

14. What happens in a slipped disc?

(A) Vertebrae break completely **(B)** Outer layer of intervertebral disc tears and inner substance presses nerves **(C)** Bones get fractured **(D)** Ligaments become loose

15. Which of the following is NOT a symptom of joint dislocation?

(A) Swelling **(B)** Intense pain **(C)** Increased motion **(D)** Immobility

16. The transverse tubules (T-tubules) are?

(A) Part of the nucleus **(B)** Elongated tubes from the sarcoplasm **(C)** Hollow tubes from the sarcolemma **(D)** Extensions of myosin filaments

17. What is a key difference in severity between tetany and tetanus?

(A) Tetany is more serious than tetanus **(B)** Both have equal severity **(C)** Tetanus is more serious and potentially life-threatening **(D)** Neither condition is serious

Q2. Write short answers of the following questions. Any 8 **8X2=16**

1 . What is the role of spongy mesophyll in gaseous exchange?

2 . What causes the movement of sugar solution from source to sink?

3 . Where are apical meristems located?

4 . Where is the zone of elongation located?

5 . Can auxins induce fruit development without fertilization?

6 . How do gibberellins influence flowering in long-day plants?

7 . What happens chemically in the oral cavity during chewing?

8 . How is pepsinogen activated and what is its function?

9 . What are the main functions of the small intestine?

10 . How many parts does the large intestine consist of?

11 . What happens to K^+ ions at night in guard cells?

12 . What is the starch-sugar hypothesis?

Q3. Write short answers of the following questions. Any 8 **8X2=16**

1 . What is the serosa layer and what is its function?

2 . What is chyme and how is it formed?

3 . What is the length and function of the duodenum?

4 . What is bile, and how does it aid digestion?

5 . What is breathing or ventilation?

6 . What is the structure of myoglobin and how does it differ from haemoglobin structurally?

7 . Differentiate between: Bronchi and bronchioles

8 . What are the symptoms of sinusitis?

9 . What are lower respiratory-tract infections and which diseases do they include?

10 . What is pneumonia and what happens to the lungs during pneumonia?

11 . Which genetic deficiency is linked to the development of COPD

12 . How do children gain voluntary control of defecation?

Q4. Write short answers of the following questions. Any 6 **6X2=12**

1 . What is the main difference between the walls of an artery and a vein?

2 . What type of blood does the pulmonary circulation carry to the lungs?

3 . Differentiate between thrombus and embolus.

4 . Name the bones of forelimbs and hindlimbs.

5 . What are osteoblasts and what is their function in bone formation?

6 . What is spondylosis?

7 . What is the most common cause of sciatica?

8 . What is the major difference between voluntary and involuntary muscles?

9 . How does repeated activation of muscle fibres affect muscle function?

Q5. Write detailed answers of the following questions. Any 6 **6X4=24**

1 . Discuss accessory organs (liver, gallbladder and pancreas) and their contributions in digestion.

2 . Why do we need bile if we already have enzymes for fat digestion?

3 . Can you explain the process of external respiration versus internal respiration in the context of gaseous exchange?

4 . Outline the main principles of coronary bypass and angioplasty.

5 . Justify how vasoconstriction or vasodilation is reflective of emotions

6 . What are the main components of coronary, hepatic-portal and renal circulation?

7 . Interpret why the swelling of the lymph nodes is a cause of concern

8 . Trace the path of lymph from a lymph capillary until it is returned to the blood.

9 . Write the cause and symptoms of joint dislocation, spondylosis, and sciatica.

10 . Explain the ultrastructure of skeletal muscle.