

**AGA KHAN UNIVERSITY EXAMINATION BOARD**

**SECONDARY SCHOOL CERTIFICATE**

**CLASS IX EXAMINATION**





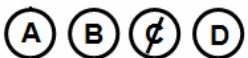
**MAY 2015**

**Biology Paper I**

**Time: 35 minutes    Marks: 25**

**INSTRUCTIONS**

1. Read each question carefully.
2. Answer the questions on the separate answer sheet provided. DO NOT write your answers on the question paper.
3. There are 100 answer numbers on the answer sheet. Use answer numbers 1 to 25 only.
4. In each question there are four choices A, B, C, D. Choose ONE. On the answer grid black out the circle for your choice with a pencil as shown below.

Correct Way		Incorrect Ways	
1		1	
		2	
		3	
		4	

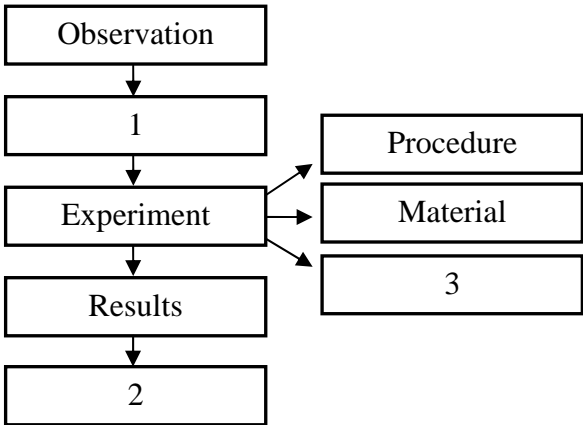
**Candidate's Signature**

5. If you want to change your answer, ERASE the first answer completely with a rubber, before blacking out a new circle.
6. DO NOT write anything in the answer grid. The computer only records what is in the ci

1. The life cycles of houseflies, mosquitoes and butterflies contain four stages. These stages can be studied in detail in
  - A. taxonomy.
  - B. entomology.
  - C. pharmacology.
  - D. biotechnology.
2. Kenya is the world’s largest exporter of tea. Tea from Kenya is distributed to various parts of the world.

The above case shows the link of biology with

- A. mathematics.
  - B. geography.
  - C. chemistry.
  - D. physics.
3. In solving a biological problem through a scientific method a number of steps are involved. Some of these are shown below.



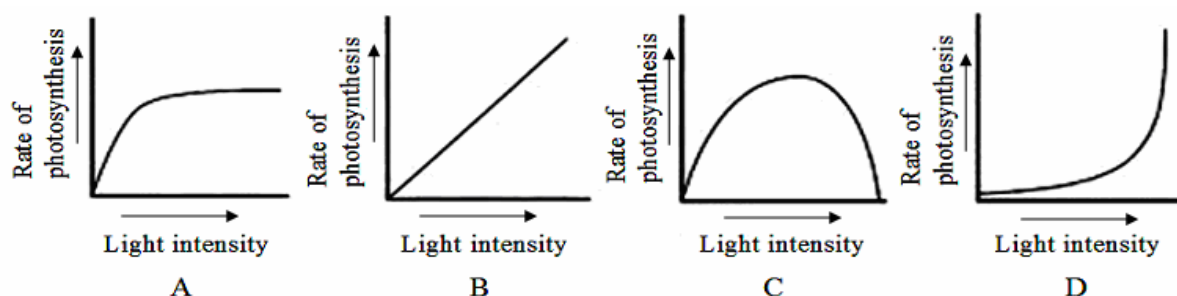
Which of the following CORRECTLY identifies steps 1, 2 and 3?

	Step 1	Step 2	Step 3
A	Hypothesis	Precautions	Conclusion
B	Conclusion	Precautions	Hypothesis
C	Hypothesis	Conclusion	Precautions
D	Conclusion	Hypothesis	Precautions

4. The table below shows that the rate of photosynthesis increases with an increase in the intensity of light.

	Light Intensity (units)	Rate of Photosynthesis (arbitrary units)
1	2	10
2	4	20
3	6	30

Which of the following graphs CORRECTLY represents the given information?



5. Abu Usman Umer Aljahiz contributed to the field of biology by
- discovering microbes in the air which spoil food.
  - describing circulation of blood in the human body.
  - developing a method of classification for organisms.
  - describing characteristics of 350 species of animals.
6. Which of the following is NOT a rule of binomial nomenclature?
- The scientific names of the organisms are written in Greek only.
  - The scientific names of the organisms consist of two parts.
  - The species names of the organisms are written using small letters only.
  - The scientific names of the organisms are italicized.
7. Kudzu is a plant from Japan. It was brought to the United States of America to help stop soil erosion. Kudzu is now a huge problem in some southern states. The plant grows very fast and can completely take over an area and out-compete native plants for space and sunlight.

The above case is an example of

- introduction of new species.
- climate change.
- loss of habitat.
- over-hunting.

8. Which of the following could be seen using a light microscope?

- I. DNA
- II. Bacterial cell
- III. Individual atoms

- A. I only
- B. II only
- C. II and III
- D. I and III

9. The function of bilayered lipids in the cell membrane is to

- A. act as gateways that allow movement of molecules.
- B. maintain the definite shape of the cell.
- C. generate ATP for active transport.
- D. provide elasticity and fluidity.

10. A plant tissue is found with the following characteristics.

- It is flexible.
- It is made of elongated cells with uneven cell wall.
- It is found in the cortex of young herbaceous stems.

Which of the following plant tissues is most likely to have the above characteristics?

- A. Sclerenchyma
- B. Collenchyma
- C. Phloem
- D. Xylem

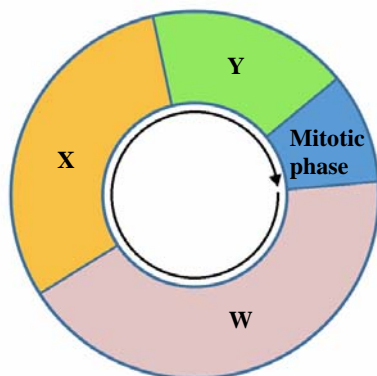
11. The diagram below shows an animal tissue.



Which of the following options describes the characteristics of this animal?

- A. Unstriated and involuntary
- B. Unstriated and voluntary
- C. Striated and involuntary
- D. Striated and voluntary

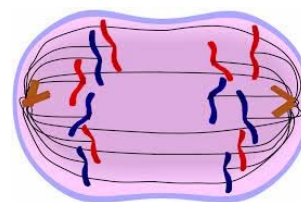
12. The diagram below shows the cell cycle.



Which of the following may happen if the stage labelled as 'X' does not take place?

- A. Supply of proteins would stop.
  - B. Spindle fibres would not be formed.
  - C. Synthesis of DNA would stop.
  - D. Cell organelles would not be doubled.
13. Which stage of mitosis is shown below?

- A. Prophase
- B. Anaphase
- C. Metaphase
- D. Telophase



14. Which of the following is CORRECT about the examples of haploid and diploid cells in man?

	Example of Haploid Cells	Example of Diploid Cells
A	Nerve cell	Skin cell
B	Sperm cell	Skin cell
C	Sperm cell	Egg cell
D	Nerve cell	Egg cell

15. The second meiotic division mainly ensures that

- A. different daughter cells are produced.
- B. two daughter cells are formed.
- C. four daughter cells are formed.
- D. haploid cells are produced.

16. The conversion of insoluble fibrinogen into fibrin threads is carried out by enzyme thrombin which works in the presence of vitamin K only. Here, vitamin K is acting as a/an

- A. substrate.
- B. active site.
- C. co-factor.
- D. inhibitor.

PLEASE TURN OVER THE PAGE

17. Optimum temperature of an enzyme can be described as the temperature at which

- A. the enzyme is denatured completely.
- B. the enzyme starts its catalytic activity.
- C. the enzyme activity is at its maximum rate.
- D. all the enzyme molecules turn into product.

18. The ability of ATP to release energy lies in its

- A. three phosphate groups.
- B. five-carbon sugar.
- C. six-carbon deoxyribulose sugar.
- D. double-ringed nitrogenous base.

19. Aerobic and anaerobic respiration are similar in a way as both

- A. take place in mitochondria.
- B. make use of oxygen.
- C. generate energy.
- D. release water.

20. Which of the following is CORRECT about vitamin C?

	Dietary Source	Function
A	Oranges and carrots	Forms rhodopsin
B	Oranges and guava	Forms collagen
C	Carrots and fish	Forms collagen
D	Fish and guava	Forms rhodopsin

21. What happens to pepsin when it enters the small intestine along with partially digested food?

- A. Pepsin is denatured completely.
- B. Pepsin is converted back to pepsinogen.
- C. Pepsin digests proteins into amino acids.
- D. Pepsin destroys the inner lining of the small intestine.

22. A patient has the following symptoms.

- Pain in abdominal region
- Difficulty in expelling faeces
- Infrequent bowel movements

The patient is mostly likely to be suffering from

- A. constipation.
- B. diarrhoea.
- C. typhoid.
- D. ulcer.

23. Which of the following is CORRECT about the condition of guard cells and stoma at the time of transpiration?

	Condition of Guard Cells	Condition of Stoma
A	Turgid	Open
B	Turgid	Closed
C	Flaccid	Open
D	Flaccid	Closed

24. Lysosomes are most abundant in those cells which perform phagocytic activity. Which of the following cells will have most lysosomes?
- A. Nerve cell
  - B. Epithelial cell
  - C. Islets of Langerhans
  - D. White blood cell
25. Which blood vessel collects blood from the lower limbs of the human body and brings it to the heart?
- A. Dorsal aorta
  - B. Femoral vein
  - C. Hepatic artery
  - D. Inferior vena cava

Please use this page for rough work