

**AGA KHAN UNIVERSITY EXAMINATION BOARD**

**SECONDARY SCHOOL CERTIFICATE**

**CLASS IX EXAMINATION**

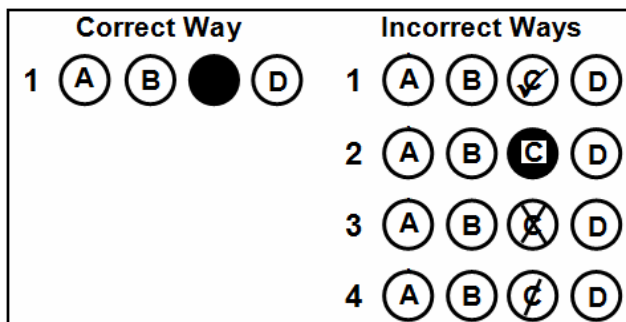
**MAY 2012**

**Biology Paper I**

**Time allowed: 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.



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 circles.

1. Which of the following is the correct sequence of the level of organisation of life from simple to complex?
  - A. Hydrogen, ribosomes, protein, nervous tissue
  - B. Hydrogen, protein, ribosomes, nervous tissue
  - C. Protein, hydrogen, nervous tissue, ribosomes
  - D. Ribosomes, nervous tissue, hydrogen, protein
  
2. Which of the following measures controls the increasing rate of pollution?
  - A. Introducing new fishing methods
  - B. Selective breeding of animals
  - C. Controlled use of fertilizers
  - D. Preventing abuses of drugs
  
3. Mr. Anjum has recently developed skin infection and the doctor has recommended him tissue examination.

Which of the following branches of biology would deal with such a test?

  - A. Morphology
  - B. Histology
  - C. Physiology
  - D. Parasitology
  
4. A person has kept an indoor plant on his terrace and soon finds it wilting. Which step of the biological research method has he applied?
  - A. Observation
  - B. Hypothesis
  - C. Deduction
  - D. Experiment
  
5. Which of the following is an example of qualitative observation?
  - A. A litre of water is heavier than a litre of ethanol.
  - B. The boiling point of ethanol is 78°C.
  - C. 70% patients are suffering from malaria.
  - D. Five students are absent from the class.
  
6. Archaeobacteria and fungi are similar in a way as both are
  - A. prokaryotes.
  - B. heterotrophic.
  - C. multicellular.
  - D. acellular.

7. Which of the following is correct about mushrooms?

	<b>Eukaryotes</b>	<b>Unicellular</b>	<b>Autotroph</b>
A.	×	✓	×
B.	✓	×	✓
C.	✓	×	×
D.	×	✓	✓

8. The process of deforestation results in

- A. loss of habitat.
- B. decrease in pollution.
- C. increase in transpiration.
- D. reduction of carbon dioxide in air.

9. One of the important terms used in microscopy is ‘magnification’ which is the

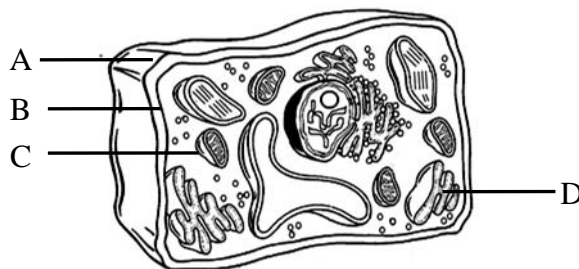
- A. measure of the clarity of an image.
- B. increase in the apparent size of an object.
- C. minimum distance at which two objects are seen.
- D. measure of visible light passing through a specimen.

10. Which of the following is NOT a postulate of the cell theory presented by Schleiden and Schwann?

- A. All organisms are made up of cells.
- B. New cells are formed from pre-existing cells.
- C. Substances found inside the cells are called protoplasm.
- D. Cell is the structural and functional unit of living things.

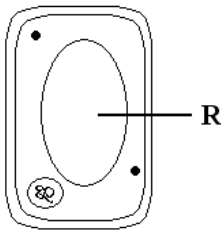
11. The diagram shows a plant cell.

Which of the labelled structures is responsible to control movement of substances across the cell?



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12. The diagram shows a plant cell.



What is the composition of the fluid found in organelle R?

- A. Sugars and lignin
- B. Amino acids and lignin
- C. Minerals and glycogen
- D. Minerals and amino acids

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

- I. Found in young herbaceous stems
- II. Made of uneven thick cell wall
- III. Provides flexibility to the plant

Which of the following plant tissues is it?

- A. Collenchyma
- B. Sclerenchyma
- C. Parenchyma
- D. Vascular bundle

14. Which of the following is correct about the duration and rate of metabolism of mitotic phase and interphase?

	Mitotic Phase	Interphase
A.	Short with high metabolic rate	Short with slow metabolic rate
B.	Long with high metabolic rate	Long with slow metabolic rate
C.	Short with slow metabolic rate	Long with high metabolic rate
D.	Long with slow metabolic rate	Short with high metabolic rate

15. The diagram shows an event of prophase I during meiosis.



Which of the following describes the process shown above?

- A. Synapsis between sister chromatids
- B. Synapsis between non-sister chromatids
- C. Crossing over between sister chromatids
- D. Crossing over between non-sister chromatids

16. Which of the following is correct about the nature and effect of an enzyme on the rate of a chemical reaction?

	Nature of Enzyme	Rate of Chemical Reaction
A.	Protein	Decreases
B.	Lipid	Decreases
C.	Protein	Increases
D.	Lipid	Increases

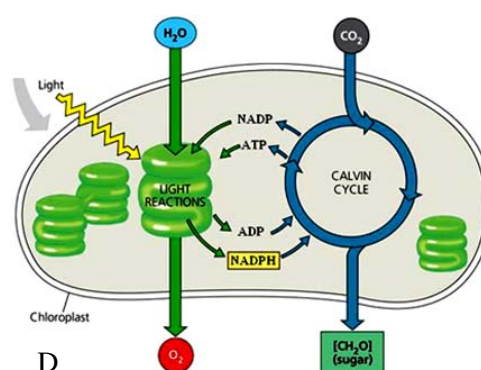
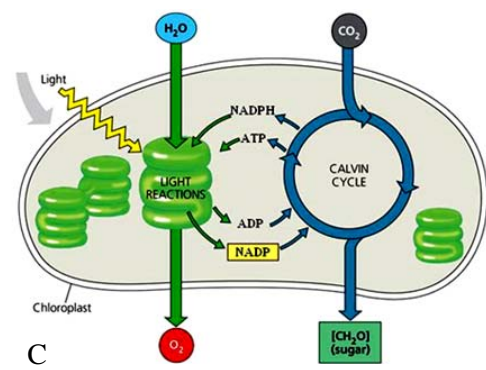
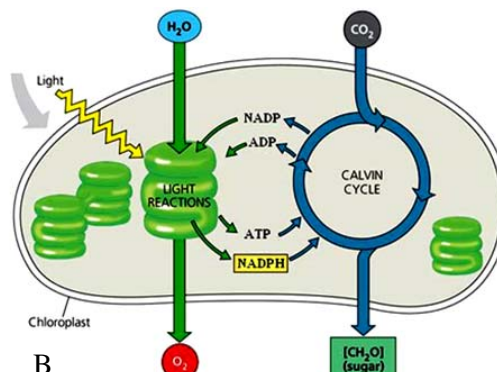
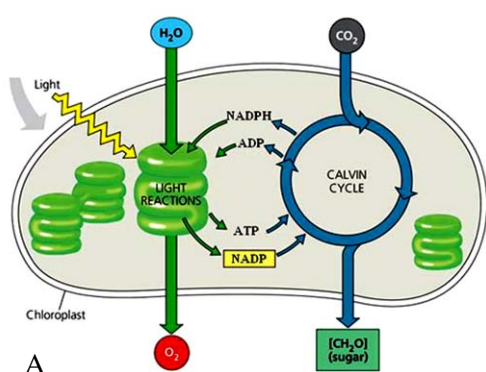
17. What happens to an enzyme after it has reacted with a substrate?

- A. It is denatured.
- B. It remains unchanged.
- C. It is broken into products.
- D. It requires a co-factor for next reaction.

18. Which of the following is the final step of cellular respiration?

- A. Formation of pyruvic acid
- B. Synthesis of ATP molecules
- C. Conversion of NAD into NADH
- D. Breakdown of carbon dioxide

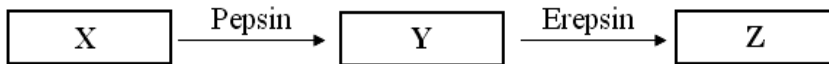
19. Which of the following diagrams correctly represents the energy molecules of light and dark reactions of photosynthesis?



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20. Aerobic and anaerobic respiration are similar in a way as both
- make use of oxygen.
  - take place in mitochondria.
  - release water.
  - generate energy.
21. Which of the following elements are absorbed from the soil by the plants?
- Carbon and hydrogen
  - Sulphur and oxygen
  - Hydrogen and nitrogen
  - Nitrogen and oxygen

22. The diagram shows some stages of digestion.



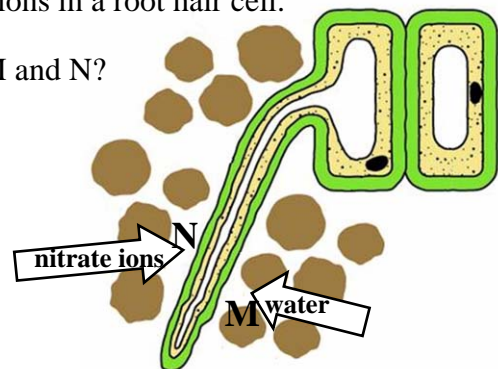
What are substances X, Y and Z?

	X	Y	Z
A.	Proteins	Amino acids	Poly peptides
B.	Poly peptides	Proteins	Amino acids
C.	Proteins	Poly peptides	Amino acids
D.	Poly peptides	Amino acids	Proteins

23. The diagram shows the absorption of water and nitrate ions in a root hair cell.

Which of the following correctly identifies processes M and N?

	M	N
A.	Osmosis	Osmosis
B.	Osmosis	Active transport
C.	Active transport	Active transport
D.	Active transport	Osmosis



24. Which of the following components is found in the smallest amount in plasma?
- Water
  - Oxygen
  - Salts
  - Proteins
25. The blood vessel which collects blood from the posterior parts of the body and brings it to the heart is called
- dorsal aorta.
  - femoral vein.
  - hepatic artery.
  - inferior vena cava.

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