

AGA KHAN UNIVERSITY EXAMINATION BOARD

SECONDARY SCHOOL CERTIFICATE

CLASS X EXAMINATION

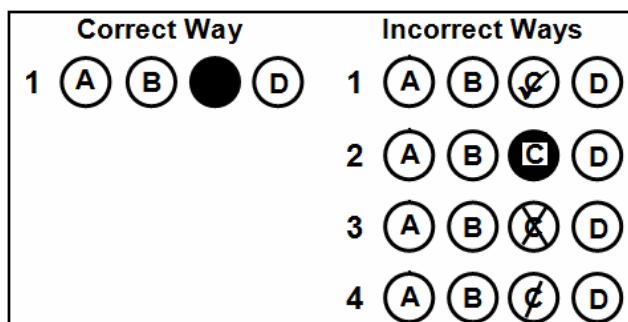
MAY 2012

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.

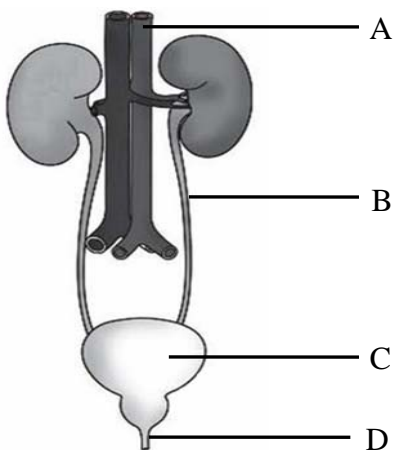
1. All of the following are symptoms of emphysema EXCEPT

- A. difficulty in breathing.
- B. loss of elasticity of lungs.
- C. increased production of sputum.
- D. intense coughing.

2. Which of the following is correct about the condition of the following muscles when we breathe in?

	External Intercostal Muscles	Internal Intercostal Muscles
A.	Contract	Relax
B.	Contract	Contract
C.	Relax	Relax
D.	Relax	Contract

3. Which of the following correctly identifies ureter?



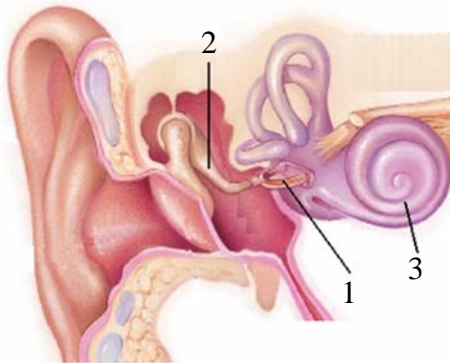
4. Which of the following is the most toxic for the human body if not removed quickly?

- A. Carbon dioxide
- B. Ammonia
- C. Oxygen
- D. Water

5. Which of the following glands does NOT match correctly with the hormone it secretes?

	Gland	Hormone
A.	Pancreas	Insulin
B.	Pituitary	Antidiuretic hormone
C.	Ovary	Estrogen
D.	Thyroid	Glucagon

6. The diagram shows a human ear.



Which of the following correctly labels 1, 2 and 3?

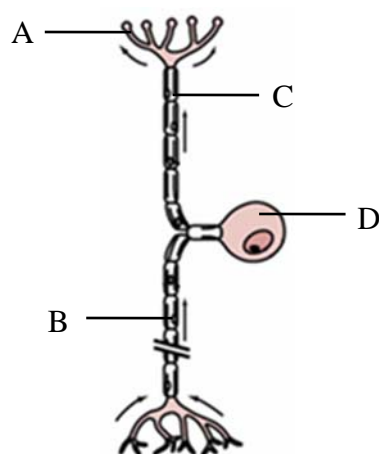
	1	2	3
A.	Incus	Stapes	Cochlea
B.	Cochlea	Incus	Stapes
C.	Stapes	Incus	Cochlea
D.	Stapes	Cochlea	Incus

7. Which of the following parts of the neuron receives neurotransmitter receptors?

- A. Axon
- B. Dendrite
- C. Nodes of Ranvier
- D. Myelin sheath

8. The diagram shows a sensory neuron.

Which of the labelled structures correctly identifies the cell body?

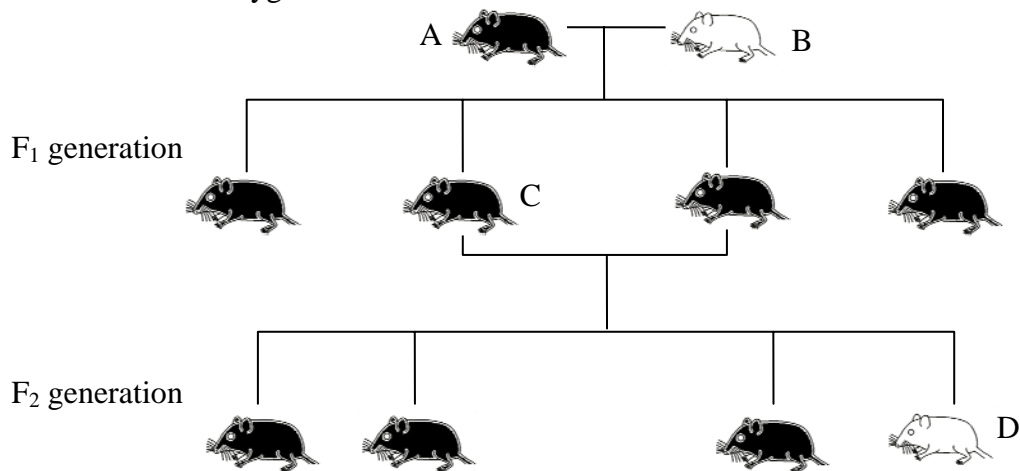


PLEASE TURN OVER THE PAGE

9. Bone is a tissue capable of growth and repair. Which of the following sets is mainly responsible to ensure this characteristic of bones?
- Fatty acids and calcium
 - Proteins and calcium
 - Fatty acids and potassium
 - Proteins and potassium
10. Which of the following matches the organism with its correct type of asexual reproduction?
- Binary fission – Planaria
 - Budding – Hydra
 - Regeneration – Paramecium
 - Parthenogenesis – Amoeba
11. Double fertilization in plants results in the formation of
- one haploid zygote.
 - two haploid zygotes.
 - one triploid endosperm cell.
 - two triploid endosperm cells.
12. If a homozygous tall man marries a homozygous dwarf woman what will be the possibility of tall children in the first generation?
- 25%
 - 50%
 - 75%
 - 100%

13. The diagram shows the inheritance of fur colour in pure breeding rats.

Which rat is heterozygous for colour?



14. Which of the following is correct about the pairing of nitrogenous bases in deoxyribose nucleic acid (DNA)?

	Pairing	Type of Bond
A.	A with T	Hydrogen
B.	A with G	Hydrogen
C.	G with C	Phosphate
D.	T with C	Phosphate

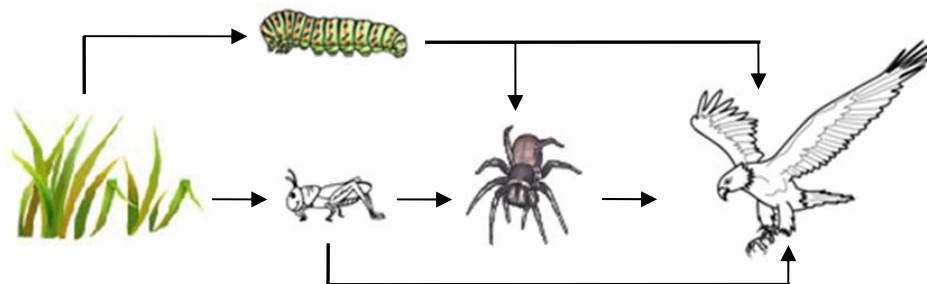
15. Which of the following is an example of natural selection?

- A. High yield of wool in sheep
- B. Insecticide resistant plants
- C. Large appendix in cattle
- D. Seedless variety of tomatoes

16. Which of the following directly damages the atmosphere as a result of deforestation?

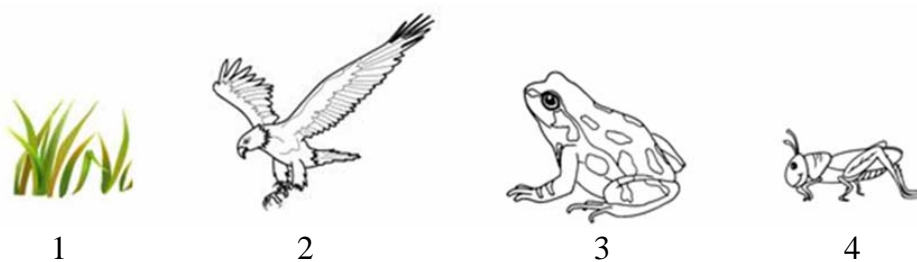
- A. Less land for cultivation
- B. Reduced oxygen in air
- C. Penetration of ultraviolet rays
- D. High humidity in atmosphere

17. In the food web shown below, which of the following are secondary consumers?



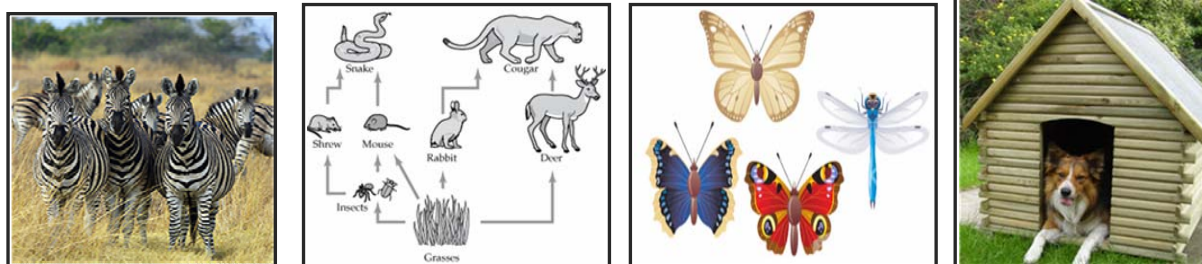
- A. Grasshopper and spider
- B. Spider and bird
- C. Bird and caterpillar
- D. Caterpillar and grasshopper

18. In the food chain given below, which of the following is the correct order of energy flow?



- A. 2 → 1 → 3 → 4
 B. 4 → 3 → 1 → 2
 C. 1 → 4 → 3 → 2
 D. 3 → 2 → 4 → 1

19. Which of the following pictures shows population?



- A B C D

20. Light, an abiotic component of ecosystem, affects the life on earth because it

- A. makes use of carbon dioxide.
 B. keeps the medium neutral.
 C. prevents loss of heat in the environment.
 D. increases inorganic substances in soil.

21. The use of non-biodegradable insecticides on crops is a major source of pollution which affects consumer's health.

In the food chain given below, which of the following possesses the highest amount of insecticide?

Carrots → rabbits → snakes → hawk

- A B C D

22. Amylase is used in bread making to break starch into sugar. This sugar is used to

- A. release CO₂ to make cavities in the dough.
- B. absorb carbon dioxide from the medium.
- C. produce oxygen for yeast to respire.
- D. evaporate alcohol from the dough.

23. In an industrial fermentor, an impeller is a device which

- A. removes heat during microbial activities.
- B. mixes the air bubbles with nutrient broth.
- C. controls pH of the culture broth.
- D. monitors temperature inside the fermenter.

24. The table refers to four different drugs. Which drug is most likely to be an antibiotic?

	Causes Hallucinogenation	Damages Nerve Tissue	Kills Bacteria	Develops Resistance
A.	✓	✓	✓	✗
B.	✗	✓	✓	✓
C.	✓	✗	✓	✗
D.	✗	✗	✓	✓

25. Sleeping pills are an example of

- A. analgesics.
- B. depressants.
- C. hallucinogens.
- D. stimulants.

Please use this page for rough work