

WASSCE / WAEC MAY / JUNE 2006 BIOLOGY PAPER 2 SECTION A (OBJECTIVES)

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S5042 June W.A.S.S.C.E. 2006 BIOLOGY 2 $2\frac{1}{2}$ hours	Name: <i>239</i> Index Number:				
THE WEST AFRICAN EXAMINATIONS COUNCIL West African Senior School Certificate Examination					
June 2006	BIOLOGY 2	$2\frac{1}{2}$ hours			
<i>Do not open this booklet until you are told to do so. While you are waiting, write your name and index number in the spaces provided at the top right-hand corner of this booklet and thereafter, read the following instructions carefully. This paper consists of two sections. Answer Section A on your Objective Test answer sheet and Section B in your answer booklet. Section A will last for 1 hour after which the answer sheets will be collected. Do not start Section B until you are told to do so. Section B will last for $1\frac{1}{2}$ hours.</i>					
SECTION A OBJECTIVE TEST [60 marks]		1 hour			
1. Use HB pencil throughout. 2. If you have got a blank answer sheet, complete the top section of it as follows. (a) In the space marked Name , write in capital letters your surname followed by your other names . (b) In the spaces marked Examination, Year, Subject and Paper ; write 'W.A.S.S.C.E.', '2006 JUNE', ' BIOLOGY ' and ' 2 ', respectively. (c) In the box marked Index Number , write your index number vertically in the spaces on the left-hand side. There are numbered spaces in line with each digit. Shade carefully the space with the same number as each digit. (d) In the box marked Paper Code , write the digits 504213 in the spaces on the left-hand side. Shade the corresponding numbered spaces in the same way as for your index number. (e) In the box marked Sex , shade the space marked M if you are male , or F if you are female . 3. If you have got a pre-printed answer sheet, check that the details are correctly printed, as described in 2 above. In the boxes marked Index Number, Paper Code and Sex , reshade each of the shaded spaces. 4. An example is given below. This is for a male candidate whose name is Chukwuma Adekunle CIROMA , whose index number is 4251102068 and who is offering Biology 2 .					
THE WEST AFRICAN EXAMINATIONS COUNCIL					
PRINT IN BLOCK LETTERS Name: CIROMA CHUKWUMA ADEKUNLE Examination: WASSCE Year: 2006 JUNE Surname Other Names Subject: BIOLOGY Paper: 2					
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For Supervisors only. If candidate is absent shade this space: <input type="checkbox"/>					
INSTRUCTIONS TO CANDIDATES 1. Use grade HB pencil throughout. 2. Answer each question by choosing one letter and shading it like this: [A] [B] [C] 3. Erase completely any answers you wish to change. 4. Leave extra spaces blank if the answer spaces provided are more than you need. 5. Do not make any markings across the heavy black marks at the right-hand edge of your answer sheet.					

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Answer all the questions.

Each question is followed by four options lettered A to D. Find out the correct option for each question and shade in pencil on your answer sheet, the answer space which bears the same letter as the option you have chosen. Give only one answer to each question. An example is given below.

Which part of the gill of fish is involved in gaseous exchange?

- A. Gill slits
- B. Gill bars
- C. Gill covers
- D. Gill filaments

The correct answer is Gill filaments, which is lettered D, and therefore answer space D would be shaded.

[A] [B] [C] **[D]**

Think carefully before you shade the answer spaces; erase completely any answer you wish to change.

Do all rough work on this question paper.

Now answer the following questions:

1. The following life processes are common to both plants and animals except

- A. respiration.
- B. growth.
- C. reproduction.
- D. photosynthesis.

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2. Which of these organelles is common to both plant and animal cells?

- A. Chloroplast
- B. Centriole
- C. Mitochondrion
- D. Pyrenoid

3. The epidermis of the mammalian skin is an example of a tissue because the cells

- A. prevent light from passing through them.
- B. have a similar structure and function.
- C. prevent excessive loss of water.
- D. are impregnated with keratin.

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4. Which of the following statements is correct about organs?

- A. They are composed of specialized cells
- B. They perform a certain overall function
- C. They are not found in plants
- D. Unicellular animals have few organs

SOURCE: WWW.LARNEDU.COM

5. The structure used for movement in *Amoeba* is

- A. cilia.
- B. pseudopodia.
- C. flagella.
- D. endoplasm.

6. Which of the following parts of a cell is not an organelle?

- A. Food vacuole
- B. Mitochondrion
- C. Cell wall
- D. Nucleus

7. The folded portion of mitochondrion is called

- A. cristae.
- B. cell membrane.
- C. nucleolus.
- D. partition.

8. The physical process which occurs when a red blood cell is placed in distilled water causing it to burst and break down is known as

- A. crenation.
- B. plasmolysis.
- C. turgidity.
- D. haemolysis.

9. During the process of osmosis a semi-permeable membrane allows

- A. only solute molecules to pass through it.
- B. both solute and solvent molecules to pass through it.
- C. only solvent molecules to pass through it.
- D. only gaseous molecules to pass through it.

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10. Which of the following environmental conditions is ideal for plant cells to remain turgid?
 - A. Hot, dry weather
 - B. Windy weather
 - C. Cold, dry weather
 - D. Cool, humid weather

11. Which of the following processes does **not** contribute towards growth?
 - A. Cell division
 - B. Cell enlargement
 - C. Cell differentiation
 - D. Cell plasmolysis

12. The aspects of growth in living organisms include all the following processes **except**
 - A. increase in dry weight.
 - B. reversible increase in size.
 - C. irreversible increase in length.
 - D. increase in number of cells.

13. Support in young herbaceous plants is provided by
 - A. translocation.
 - B. guttation.
 - C. turgidity.
 - D. osmosis.

14. Which of the following heart structures is **best** adapted to cope with double circulation?
 - A. One auricle and one ventricle
 - B. Two auricles and one ventricle
 - C. Two auricles and partially divided ventricle
 - D. Two auricles and two ventricles.

15. Which of these factors does **not** contribute towards the ascent of water in plants?
 - A. Root pressure
 - B. Capillarity
 - C. Transpiration pull
 - D. Turgor pressure

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16. The ventricles of the mammalian heart have thicker muscular walls than the auricles because the
 - A. ventricles are larger.
 - B. ventricles receive more blood.
 - C. ventricles pump blood to longer distances.
 - D. auricles have smaller capacity.

17. Gaseous exchange occurs through the following structures in some organisms except
 - A. spiracle and tracheae.
 - B. alveoli and lungs.
 - C. stomata and lenticels.
 - D. chloroplast and plastids.

18. Which of the following organs in mammals is **not** excretory in function?
 - A. Liver
 - B. Kidney
 - C. Pancreas
 - D. Lungs

19. Which of the following substances is **not** an excretory product in mammals?
 - A. Carbon dioxide
 - B. Water
 - C. Faeces
 - D. Urea

20. An organism which maintains a constant temperature irrespective of environmental temperature fluctuation is
 - A. an insect.
 - B. a mammal.
 - C. an amphibian.
 - D. a fish.

21. Which of the following conditions is responsible for the presence of sugar in the blood of diabetic patients?
 - A. High intake of carbohydrates
 - B. Low production of insulin
 - C. Low intake of carbohydrates
 - D. High production of insulin

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22. The central nervous system in humans is made up of the
 - A. brain, medulla oblongata and nerves.
 - B. brain, spinal cord and cranial nerves.
 - C. brain and spinal nerves.
 - D. brain and spinal cord.

23. The part of the ear in mammals responsible for the detection of sound is the
 - A. utriculus.
 - B. tympanum.
 - C. cochlea.
 - D. semi-circular canal.

24. Which of the following statements best describes pollination? The transfer of pollen grain from
 - A. anther to stigmas.
 - B. stigmas to stamens.
 - C. the anther of a flower to the stigma of another flower of a different species.
 - D. anther to the ovary.

25. Which of the following vertebrae provide articulating surfaces for the ribs?
 - A. Thoracic
 - B. Lumbar *Abdomen*
 - C. Cervical *Neck*
 - D. Sacral *Waist*

26. Which of the following is **not** a component of the appendicular skeleton?
 - A. Ulna
 - B. Atlas
 - C. Femur
 - D. Pelvic girdle

27. If the mucus in the air track of mammals dry up and the hairs in the nostrils are removed
 - A. impure air would be breathed into their lungs.
 - B. the speed of air movement into their lungs would increase.
 - C. breathing air into their lungs would be difficult.
 - D. more air would be taken into their lungs.

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28. A one-seeded fruit in which the pericarp has fused with the seed coat is classified as
- a berry.
 - a caryopsis.
 - a legume.
 - an achene.

Study the following list of deficiency symptoms in animals, use it to answer questions 29 to 31.

- Loss of appetite and weight;
 - Delayed healing of wounds;
 - Rickets;
 - Sterility in animals;
 - Failure of blood to clot;
 - Night blindness.
29. Which of the following deficiencies is caused by lack of vitamin A. *Ans BL*
- I
 - III
 - V
 - VI
30. Which of the following vitamins would correct the deficiency numbered V?
- A Vitamin K
- Vitamin A
 - Vitamin C
 - Vitamin B
31. Which of the following combination of food substances would correct the deficiency numbered II?
- Tomatoes, oranges and mangoes
 - Yeast, liver and rice
 - Red palm oil, carrot and egg yolk
 - Green vegetables, butter and meat
32. Which of the following food substances would produce a translucent mark when rubbed on a white paper?
- Potato
 - Beans
 - Mango
 - Groundnut

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33. If an enzyme works best in an acid medium, in which of the following parts of the human gut is the pH **best** for enzyme activities? In the
 - A. ileum, pH 9·0.
 - B. stomach, pH 2·0.
 - C. duodenum, pH 7·0.
 - D. mouth cavity, pH 8·0.
34. Which of the following organisms is **not** considered as a parasitic plant?
 - A. *Cassytha*
 - B. *Rhizopus*
 - C. *Dodder*
 - D. *Mistletoe*
35. The examples of autotrophic organisms include the following except
 - A. *Euglena*.
 - B. *Chlamydomonas*.
 - C. *Hydra*.
 - D. *Spirogyra*.
36. Which of the following organisms feeds both autotrophically and heterotrophically?
 - A. *Hydra*
 - B. *Paramecium*
 - C. *Mucor*
 - D. *Euglena*
37. Siphons and gills are structures in aquatic organisms used for
 - A. gaseous exchange.
 - B. buoyancy.
 - C. excretion.
 - D. movement.
38. The first step in carrying out ecological studies in a terrestrial habitat is
 - A. quadrat sampling.
 - B. mapping the area.
 - C. collection of organisms.
 - D. measuring abiotic factors.

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39. Which of the following components of an ecosystem does **not** contribute to the biomass of the system?
- A. Producers
 - B. Consumers
 - C. Micro-organisms
 - D. Habitat
40. The physical and chemical factors which affect the life of organisms in an environment are described as
- A. biotic.
 - B. edaphic.
 - C. abiotic.
 - D. physiographic.
41. The group of several populations that interact and share a habitat, form
- A. a species.
 - B. a community.
 - C. an ecotype.
 - D. a tribe.
42. Which of these factors are common to both aquatic and terrestrial habitats?
- A. Light, rainfall and turbidity
 - B. Light, temperature and tide
 - C. Light, rainfall and temperature
 - D. Rainfall, turbidity and salinity
43. Organisms that feed essentially on plants within any ecosystem may be referred to as
- A. carnivores.
 - B. herbivores.
 - C. saprophytes.
 - D. omnivores.
44. If a pond contains water weed, tadpoles, Tap-minnows (fish) and is visited after by Herons (bird) what would be the possible food chain?
- A. Water weed → Tap-minnow → Heron → Tadpole
 - B. Water weed → Tadpole → Tap-minnow → Heron
 - C. Water weed → Heron → Tap-minnow → Tadpole
 - D. Water weed → Tadpole → Heron → Tap-minnow

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45. Which of the following statements about feeding relationships is **correct**?
- A. In a food web on land, grasshopper feeds on praying mantis and on predator bugs.
 - B. In a food chain on land, green plant is the producer.
 - C. In an aquatic food chain, mollusc larvae are the producers.
 - D. In an aquatic food web, various copepods feed on mollusc larvae and on sand eel.
46. Which of these diseases **cannot** be spread by an insect?
- A. Cholera
 - B. Malaria
 - C. Trypanosomiasis
 - D. Measles
47. Which of the following orders **correctly** represents the trend in eutrophication?
- A. Lack of oxygen → Death of aquatic organisms → Massive algal growth
 - B. Excess nitrates and phosphates → Massive algal growth → Lack of oxygen → Death of aquatic organisms
 - C. Heavy mineralization → Lack of oxygen → Massive algal growth
 - D. Excess nitrates and phosphates → Lack of oxygen → Massive algal growth → Death of aquatic organisms
48. Air pollution can be reduced by the following methods **except**
- A. building tall factory chimneys.
 - B. passing waste gases through filters and absorbers.
 - C. using lead-free petrol in cars.
 - D. recycling tins, cans and bottles.
49. An effective management of natural resources to ensure their continued yield from generation to generation may involve all the following **except**
- A. protection of wildlife.
 - B. prevention of habitat destruction.
 - C. biological control of pests.
 - D. disposal of raw sewage into the sea.

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50. The following practices can contribute towards the conservation of natural resources except
- A. afforestation.
 - B. deforestation.
 - C. contour ploughing.
 - D. establishment of Game Reserves.
51. Variation is a factor which
- A. differentiates between individuals of the same species.
 - B. qualifies an organism to live with others.
 - C. enables organisms to adapt to the environment.
 - D. states the external features of an organism.
52. Which of the following traits in humans is **not** a morphological variation?
- A. Height
 - B. Shape of head
 - C. Colour of skin
 - D. Ability to roll the tongue
53. The blood group in humans referred to as a universal recipient is
- A. O.
 - B. A.
 - C. B.
 - D. AB.
54. If a heterozygous red flowered plant, (Rr) was self fertilized, the offspring would be expected to be
- A. all red flowered plants.
 - B. all white flowered plants.
 - C. $\frac{3}{4}$ red flowered, $\frac{1}{4}$ white flowered plants.
 - D. $\frac{3}{4}$ white flowered, $\frac{1}{4}$ red flowered plants.

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55. The contrasting pair of genes affecting a trait and located at the same position on homologous chromosomes is referred to as
- chromatids.
 - mutants.
 - alleles.
 - chromatin.
56. The haploid number of chromosomes in humans is
- 48.
 - 46.
 - 24.
 - 23.
57. If a pure breeding white cat (homozygous dominant) mates with a pure breeding black cat (recessive), what would be the fur colour of the F_1 generation?
- Homozygous white
 - Homozygous black
 - Heterozygous white
 - Heterozygous black
58. Courtship behaviour in animals may include all of the following except
- howling of a dog.
 - dancing of the worker bee.
 - croaking of a toad.
 - basking in the sun by a lizard.
59. Honey-bee workers carry out the following functions except
- laying eggs.
 - building nests.
 - cleaning the nest.
 - gathering food.

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60. The long necks and legs of the present day giraffes were some of the basis of

- A. Darwins' theory of evolution.
- B. Mendel's theory of inheritance.
- C. Lamarck's theory of evolution.
- D. DeVries theory of evolution.

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