

CAMEROON GENERAL CERTIFICATE OF EDUCATION BOARD
General Certificate Of Education Examination

710 BIOLOGY 1

ADVANCED LEVEL

JUNE 2016

Candidate Number

Centre Name

Candidate Identification No.

Subject Code and Paper Number

Mobile phones are NOT allowed in the examination room.

MULTIPLE CHOICE QUESTION PAPER

One and a half hours

INSTRUCTIONS TO CANDIDATES

Read the following instructions carefully before you start answering the questions in this paper. Make sure you have a soft HB pencil and an eraser for this examination.

USE A SOFT HB PENCIL THROUGHOUT THE EXAMINATION.

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

Before the examination begins:

Check that this question booklet is headed "0710 Biology 1 – ADVANCED LEVEL".

Fill in the information required in the spaces above.

Fill in the information required in the spaces provided on the answer sheet using your HB pencil:

Candidate Name, Exam Session, Subject Code, Centre Number and Candidate Number.

Take care that you do not crease or fold the answer sheet or make any marks on it other than those asked for in these instructions.

How to answer the questions in this examination

Answer ALL the 50 questions in this Examination. All questions carry equal marks.

Each question has FOUR suggested answers: A, B, C and D. Decide which answer is appropriate. Find the number of the question on the Answer Sheet and draw a horizontal line across the letter to join the square brackets for the answer you have chosen.

For example, if C is your correct answer, mark C as shown below:

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

Mark only one answer for each question. If you mark more than one answer, you will score a zero for that question. If you change your mind about an answer, erase the first mark carefully, then mark your new answer. Avoid spending too much time on any one question. If you find that a question is difficult, move on to the next question. You can come back to this question later on.

Do all rough work in this booklet using the blank spaces in the question booklet.

At the end of the examination, the invigilator shall collect the answer sheet first and then the question booklet. DO NOT ATTEMPT TO LEAVE THE EXAMINATION HALL WITH IT.

1. A type of classification of organisms based on similarities and differences in as many observable characteristics is
- artificial classification.
 - phylogenetic classification.
 - numerical classification.
 - phenetic classification.
-
2. An enzyme that is inactive and must associate with a specific cofactor molecule in order to function is
- apoenzyme.
 - coenzyme.
 - enzyme activator.
 - allosteric enzyme.
-
3. Which of these carbohydrates has residues, linked by α -1, 4 glycosidic bonds?
- Maltose.
 - Lactose.
 - Sucrose.
 - Glycogen.
-
4. The presence of a perivisceral cavity in the mesoderm of triploblastic multicellular animals makes them to be called
- acoelomates.
 - pseudocoelomates.
 - coelomates.
 - coelenterates.
-
5. Becauseoccurs more frequently between genes situated far apart on a chromosome and less frequently on genes situated close together, this information is used to draw a chromosome map. Which of the following best fills the space above?
- Mutations.
 - Cross over value.
 - Cross over frequency.
 - Crossing over.
-
6. Smoking destroys the cilia in the respiratory passage. This
- makes it harder to move air in and out of the lungs.
 - decreases the surface area for respiration.
 - slows blood flow through the blood vessels in the lungs.
 - makes it harder to keep the lungs clean.
-
7. Epithelial tissues arise from
- all the three germ layers.
 - the ectoderm.
 - the endoderm.
 - the mesoderm.
-
8. The complete breakdown of 1 glucose molecule releases 2880KJ (38 ATP). If 1 ATP molecule contains 30.6 KJ, what will be the percentage efficiency of energy transfer in aerobic respiration?
- 40.1%
 - 40.3%
 - 40.2%
 - 40.4%
-
9. Secretory vesicles that carry products for exocytosis in cells are produced in the
- ribosomes.
 - golgi complex.
 - endoplasmic reticulum.
 - lysosomes.
-
10. The parasitic protoctist that causes dysentery is
- Amoeba histolytica*.
 - Entamoeba gingivalis*.
 - Shigella dysenteriae*.
 - Entamoeba histolytica*.
-
11. In leaves, gaseous exchange and transport takes place in the
- cuticle.
 - spongy mesophyll.
 - palisade mesophyll.
 - guard cells.
-
12. The function of deamination is to
- produce NH_3 .
 - produce urea.
 - remove excess amino acid.
 - synthesize ornithine.
-
13. In recombinant DNA technology, plasmids may be used to
- cut DNA at specific locations.
 - introduce foreign DNA into bacteria.
 - introduce foreign DNA into human cell.
 - activate DNA.
-
14. The greatest volume of water is reabsorbed from the nephron by the
- proximal tubule.
 - Bowman's capsule.
 - distal tubule.
 - collecting duct.

15. An Inheritance pattern explained by multiple alleles is
- ABO blood group.
 - cystic fibrosis.
 - Down's syndrome.
 - haemophilia.
-
16. Organisms that have been genetically modified to carry foreign genes are
- homogenous organisms.
 - legated organisms.
 - plasmids.
 - transgenic organisms.
-
17. Which of the following compounds is the product of the reaction between carbon dioxide and phosphoenol pyruvate (PEP) in tropical plants such as sorghum?
- Ribulose biphosphate carboxylase.
 - Ribulose biphosphate.
 - Oxaloacetic acid.
 - Phosphoglyceraldehyde.
-
18. Why is the pancreas described as a mixed gland having both endocrine and exocrine functions?
- It produces digestive enzymes which are passed via the pancreatic duct to the duodenum and insulin and glucagon which are passed to the liver and muscles via blood vessels.
 - Produces peptidases to digest proteins.
 - It produces digestive enzymes which are passed via the pancreatic duct to the duodenum.
 - It produces insulin and glucagon which are passed to the liver and muscles via blood vessels.
-
19. What plant hormone is responsible for the stimulation of cell elongation in shoots?
- Indole acetic acid.
 - Ethylene.
 - Abscisic acid.
 - Cytokinins.
-
20. When does the second meiotic division in oogenesis likely to occur?
- When sperm head is inside the **secondary oocyte**.
 - When the sperm and secondary oocyte meet.
 - When the secondary oocyte is inside the uterus.
 - When the secondary oocyte is released from the ovary.

For questions 21 to 28, one or more of the responses is/are correct. Choose:

- If (i), (ii) and (iii) are correct.
 - If (i) and (iii) are correct
 - If (ii) and (iv) are correct
 - If only (iv) is correct
-
21. In a food chain with four links,
- there are three energy transfers.
 - there are four trophic levels.
 - primary consumers are more numerous than producers.
 - there are five organisms.
-
22. An inverted pyramid can be produced from
- orange tree → caterpillar → bird.
 - grass → locust → hen.
 - mango tree → ants → lizard.
 - carrot → goat → foxes.
-
23. A community includes
- different species in the same habitat.
 - the same species in different habitats.
 - different populations in the same habitat.
 - the same population in different habitat.
-
24. Characteristics of parenchyma tissues include:
- presence of living protoplasmic material.
 - presence of lignified cell wall.
 - cells which are isodiametric in shape.
 - presence of pits.
-
25. Asexual reproducing organisms exhibit little or no genetic variation because:
- asexual reproduction does not involve gamete formation.
 - asexual reproduction involves only one parent.
 - in asexual reproduction no fusion of gametes is involved.
 - during asexual reproduction many offspring are produced.
-
26. The electron transport system
- occurs in the cristae of the mitochondria.
 - involves electrons and protons reducing oxygen to water.
 - involves oxidative phosphorylation.
 - occurs in the cytoplasm of cells.

27. Which of the following is true about nervous tissue?
- Composed of neurons.
 - Has dendrites which conduct impulses towards the cell body.
 - Has axons which conduct impulses away from the cell body.
 - Has myelin sheath which facilitates conduction of impulses across the synapse.
-
28. In enzyme activity the molecule NADP can be considered as
- a prosthetic group.
 - a cofactor.
 - a coenzyme.
 - an activator.
-
29. In mice the dominant allele B determines black coat colour. Brown coat colour results from a recessive allele b. The dominant allele N determines hair which grows straight. Wavy hair is caused by the recessive allele n. What will be the genotype of the F_1 generation from a cross between a black wavy haired male and a brown straight haired female?
- BBNn
 - Bbnn
 - BbNn
 - bbnn
-
30. One of the differences between C_3 and C_4 plants is that
- C_3 plants have two types of chloroplast.
 - C_4 plants carry out photorespiration.
 - C_4 plants carry out double fixation of carbon dioxide.
 - C_3 plants are found in temperate regions.
-
31. The act of concentration of urine was found to decrease shortly after a person had drunk a glass of distilled water. This is because
- less salt is excreted in the urine.
 - more water is excreted in the urine.
 - there is a drop in the water potential of the blood.
 - More ADH released into the blood.
-
32. The water content of the mammalian blood is regulated by antidiuretic hormone (ADH). In which part of the nephron does this regulation occur?
- The ascending limb of the loop of Henle.
 - The collecting duct.
 - The descending limb of the loop of Henle.
 - The proximal convoluted tubule.
-
33. At which rate of reaction of the maximum velocity can the Michaeli's Menten constant be obtained?
- the rate of reaction is 25% of its maximum velocity.
 - the rate of reaction is 50% of its maximum velocity.
 - the rate of reaction is 75% of its maximum velocity.
 - the rate of reaction is 90% of its maximum velocity.
-
34. Which of the following mammalian glands is an exocrine gland?
- Thyroid gland
 - Mammary gland
 - Adrenal gland
 - Ovary and testis
-
35. The cascade effect describes a situation where:
- the secretion of a hormone is in response to the presence of another hormone.
 - the presence of a particular hormone stops the activity of other hormones.
 - hormones perform synergistic actions.
 - hormones act on similar gland.
-
36. Blood flow through capillaries is slow because
- blood volume is reduced from the capillaries.
 - the pressure in the venules is high.
 - the total cross sectional area of the capillaries is larger than that of the arteries.
 - the osmotic pressure in the capillaries is very high.
-
37. Which of these animals have a common ancestry based on possession of similar bones in upper arm?
- Bat, bird, whale, humans.
 - Bat, whale, horse, humans.
 - Bird, whale, bat, fox.
 - Bird, bat, whale, horse.
-
38. What will be the likely consequence if the enzyme pepsin was to be produced in an active form in the zymogen cells?
- Pepsin will digest the cell protein.
 - Pepsin will split nucleoprotein into nucleic acids and protein.
 - A Pepsin will digest move proteins.
 - Pepsin will be inactivated in the stomach.

39. The volume of air taken in during inspiration which does not take part in gaseous exchange is known as

- A residual volume.
- B inspiratory reserve volume.
- C Vital capacity.
- D dead space air.

40. Which of the following will usually contain blood with the lowest amount of oxygen?

- A The left ventricle.
- B The left atrium.

- C The pulmonary veins.
- D The pulmonary arteries.

41. What are the phenotypes of the parents of a haemophiliac son and a normal daughter.

	Father	Mother
A	Carrier	Normal
B	Haemophiliac	Carrier
C	Haemophiliac	Haemophiliac
D	Normal	Carrier

For questions 42 to 50 there are two statements. Read through the statements and then choose:

- A if both statements are true and the second explains the first.
- B if both statements are true but the second does not explain the first
- C if the first statement is true and the second is false
- D if the first statement is false and the second is true.

First Statement

Second Statement

- | | | |
|----|---|---|
| 42 | Asexual reproduction is a very fast process and produces offspring that are identical to the parents. | Asexual reproduction results in variation. |
| 43 | Relative growth rate curves compare growth rate at a given time against the original measurement as a percentage. | If a ten year old boy and a thirty year old man both increase 2cm in height in one month, the ten year old boy has a higher relative growth rate. |
| 44 | In meiotic cell division the offspring produced have different genetic contents. | During mitotic division sister chromatids move while in meiosis whole chromosomes move. |
| 45 | Antipodal cells are found in the chalaza end of the embryo sac mother cell | Polar nuclei are also most often found in the chalaza end Of the embryo sac mother cells. |
| 46 | Pure water has the lowest water potential value of zero. | Dissolving solutes lower the water potential of pure water. |
| 47 | Suckling actions by a baby help in ovulation. | Suckling actions prevent the release of FSH and LH |
| 48 | A hormone originating in the terminal buds of plants suppresses the growth of lateral buds. | Plant hormones may promote or inhibit growth. |
| 49 | Ciliated epithelium is associated with goblet cells which secrete mucus in which cilia set up currents | Epithelia that line various ducts e.g. oviduct generate ciliary currents which propel the zygote to the uterus. |
| 50 | Lysosomes are vesicles from a golgi apparatus that contain enzymes. | Lysosomes break down food, cellular debris and foreign invaders such as bacteria |

STOP

GO BACK AND CHECK YOUR WORK