

REPUBLIQUE DU CAMEROUN
Paix-Travail-Patrie
MINISTRE DES ENSEIGNEMENTS
SECONDAIRES



REPUBLIC OF CAMEROON
Peace-Work-Fatherland
MINISTRY OF SECONDARY EDUCATION

TEACHERS' RESOURCE UNIT
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MARCH 2023

The Teachers' Resource Unit and the Regional Inspectorate of Pedagogy, in collaboration with NASTA	SUBJECT CODE NUMBER 0710	PAPER NUMBER 1
	SUBJECT TITLE BIOLOGY	
GENERAL CERTIFICATE OF EDUCATION REGIONAL MOCK EXAMINATION		
CANDIDATE NAME:		
CANDIDATE NUMBER:		
CENTRE NUMBER:		
ADVANCED LEVEL		

Time Allowed: One and a half hours
INSTRUCTIONS TO CANDIDATES:

Mobile phones are **NOT ALLOWED** in the examination room.

1. USE A SOFT HB PENCIL THROUGHOUT THIS EXAMINATION.
2. DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

Before the Examination begins:

3. Check that this question booklet is headed "Advanced level -0710 code and subject title— BIOLOGY Paper 1".
4. Insert the information required in the spaces above.
5. Without opening the booklet, pull out the answer sheet carefully from inside the front cover of this booklet. 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.
6. Insert the information required in the spaces provided on the answer sheet using your HB pencil:

Candidate Name, Centre Number, Candidate Number, Subject Code Number, and Paper number

How to answer questions in this examination:

7. Answer ALL the 50 questions in this examination. All questions carry equal marks.
8. Non-programmable calculators are allowed.
9. For each question there are four suggested answers, A, B, C and D. Decide which answer is correct. 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]
10. Mark only one answer for each question. If you mark more than one answer, you will score zero for that question. If you change your mind about an answer, erase the first mark carefully, and then mark your new answer.
11. Avoid spending much time on any question. If you find a question difficult, move to the next question. You can come back to this question later.
12. Do all rough work in this booklet using, where necessary, the blank spaces in the question booklet.
13. You must not take this booklet and answer sheet out of the examination room. All question booklets and answer sheets will be collected at the end of the examination.

1. Choose the description that corresponds to a primary structure of a protein
- A: The sequence of amino acid in polypeptide
 B: The amino acid chain coiled into an α -helix
 C: The shape of protein in space.
 D: The association of 2 or more polypeptide chains.
2. The role of activation energy in metabolic reactions is to
- A: overcome the energy barrier
 B: increase enzyme efficiency
 C: speed up the rate of biochemical reaction
 D: enable substrates bind to active site of enzyme.
3. Which of the following cell structures is selectively permeable and controls the exchange of substance between the cell and the environment?
- A: Cytoplasm
 B: Nucleus
 C: Mitochondrion
 D: Cell Membrane.
4. The significance of oxidative phosphorylation and photophosphorylation is seen in the formation of
- A: CO_2
 B: ATP
 C: NADH
 D: H_2O and O_2 .
5. An unknown solution produces a brick red precipitate when heated with Millon's reagent. A yellow precipitate develops when Fehling's reagent is used on the solution. Using these results only, which nutrients does this solution contain?
- A: Protein and fat
 B: Protein and reducing sugar
 C: Fat and starch
 D: Starch and reducing sugar
6. In which of these pigments is Magnesium an essential component?
- A: Chlorocruirin
 B: Haemocyanin
 C: Haemoglobin.
 D: Chlorophyll
7. Select a simple food chain from the following organisms: eagle, grasshopper, frog, toad, and snake
- A: grass \rightarrow frog \rightarrow grasshopper \rightarrow eagle \rightarrow snake
 B: frog \rightarrow grasshopper \rightarrow grass \rightarrow snake \rightarrow eagle
 C: snake \rightarrow grasshopper \rightarrow frog \rightarrow grass \rightarrow eagle
 D: grass \rightarrow grasshopper \rightarrow frog \rightarrow snake \rightarrow eagle
8. Cam plants conserve water only by
- A: opening their stomata during the day
 B: opening their stomata at night
 C: accepting PEP
 D: closing their stomata during the day
9. Select a process of chemical digestion from the list provided below:-
- A: The cutting and crushing action of teeth
 B: The rhythmic distention of the gut wall
 C: The hydrolyzing action of enzyme
 D: The emulsification of fat by bile salt

10. Seeds from brightly colored succulent fruits are better dispersed by

- A: fur of animals.
 B: insects.
 C: wind.
 D: birds feeding on the fruit juice

11. The mechanism of translocation which permits the passage of water across a charged membrane is

- A: massflow
 B: active transport
 C: surface spreading
 D: electroosmosis

12. One symptom of eutrophication is

- A: algal bloom.
 B: increase SO_2 and NO_2 gases in the atmosphere.
 C: global warming
 D: growth of more fish in water

13. A respiratory quotient is described as the

- A: volume of carbon dioxide used to the volume of oxygen produced during respiration
 B: volume of carbon dioxide produced to the volume of oxygen used during respiration.
 C: volume of both carbon dioxide and oxygen produced during respiration
 D: volume of carbon dioxide produced during respiration.

14. An epithelial tissue that could be found in a surface where gaseous exchange and ultra-filtration occur is

- A: cuboidal epithelium.
 B: pavement epithelium.
 C: columnar epithelium.
 D: glandular epithelium

15. One similarity between parenchyma and collenchyma cells is that both cells

- A: have living protoplasm.
 B: are dead cells.
 C: have uniform cellulose cell wall.
 D: have lignified cell walls.

16. The management of biotic and abiotic components of an environment to ensure survival of a maximum number of species is

- A: Overfishing
 B: Desertification
 C: Conservation
 D: Survival of the fittest

17. From the following list A=Spider; B=Wasp; C=Bird; D=Caterpillar, Select the organism from column I below that is correctly matched with a key feature in column II.

Column I	Column II
A:	Body covered with feathers
B:	Segmented body, no legs
C:	Winged forelimbs
D:	Possesses two prolegs on the thorax and two proper legs on the abdomen

18. Identify the substance that does not pass out of blood capillaries into the Bowman's capsule during ultrafiltration

- A: Salts
- B: Urea
- C: Fibrinogen
- D: Glucose

19. What name is given to the cells that respond to secretion from an endocrine gland?

- A: Epidermal cells
- B: Gamete cells
- C: Somatic cells
- D: Target cells

20. Identify the blood group of a couple that will be different from that of their offspring.

- A: Blood group A x blood group B
- B: Blood group AB x blood group O
- C: Blood group AB x blood group B
- D: Blood group O x blood group A.

For questions 21-29, one or more of the responses is/are correct. Choose:

- A: If (i, ii, and iii) are correct.
- B: If (i and iii) are correct.
- C: If (ii and iv) are correct.
- D: If only (iv) is correct.

21. Spermatogenesis and oogenesis

- (i) involves multiplication, growth and maturation
- (ii) begins in the fetus
- (iii) are influenced by hormones
- (iv) always produce gametes.

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

22. Antidiuretic hormones (ADH) are

- (i) secreted by the pituitary gland
- (ii) release hormones made by the hypothalamus
- (iii) promote reabsorption of water in kidneys
- (iv) suppress immune responses to combat stress

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

23. Having binocular vision is better than having one, because

- (i) defect in one eye does not result to blindness
- (ii) it gives a layer of vision filled layer
- (iii) it provides a potential for stereoscopic vision
- (iv) it reduces the amount of light

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

24. The Eustachian tube connects

- (i) the inner ear with the throat
- (ii) the middle ear with the inner ear
- (iii) the outer ear with the nose
- (iv) the middle ear with the throat

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

25. Plant growth regulators are sometimes called plant growth hormones because

- (i) they are made or manufactured in special organs
- (ii) they are chemical messengers that facilitate intracellular communication
- (iii) they do not regulate responses to external stimuli
- (iv) they are present in low concentrations

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

26. During the metaphase stage of meiosis I:-

- i. Homologous chromosomes align in pairs.
- ii. Crossing over occurs between neighboring sister chromatids.
- iii. Centromere of whole chromosomes orientate toward opposite poles.
- iv. Cell membrane constrict at the equator of spindle fibre.

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

27. A DNA structure can be described

- (i) a double helix
- (ii) two polynucleotide chains
- (iii) two chains held together by complementary base pairing
- (iv) chains with no sugar phosphate backbone.

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

28. Long day plants:

- i. They require the periodic exposure of light less than the critical period to induce flowering.
- ii. Require shorter night periods to flower.
- iii. Require the accumulation of phytochrome red to flower.
- iv. Bloom only when they receive more than 12 hours of light.

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

29. Gaps in fossil records are caused by:

- i. some fossils not yet discovered
- ii. some fossils decomposed rapidly before fossilization could occur.
- iii. some dead bodies did not have enough time for fossilize.
- iv. fossils were destroyed by natural disasters.

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

30. Identify the function of lysosome

- A: Breakdown of macromolecules, cell membrane repairs and respond against foreign substances
- B: Ribosome synthesis.
- C: Ca^{2+} storage in muscle cells.
- D: Modifying and packing of proteins and lipids into vesicles

31. What is a gene expression?

- A: Production of a functional protein from edited mRNA
- B: The process by which the instructions in our DNA are converted.
- C: The process by which the instructions in our DNA are converted into a functional product, such as a protein.
- D: A gene product acting as a transcription factor for many other genes.

32. The relationship in which a virus is thriving in a human and the human is losing immunity is described as

- A: Interspecific competition
- B: Competitive exclusive principle
- C: Parasitism
- D: Commensalism

33. A photosystem contains

- A: pigment, a reaction center and electron acceptors
- B: ADP, phosphate and hydrogen ions
- C: proteins, photons, and pigments.
- D: Cytochromes

34 Which of the following relationship correctly differentiates C₃ plants from C₄ plants?

	C ₃ plants	C ₄ plants
A:	chloroplasts are dimorphic	chloroplasts of these are monomorphic
B:	RuBP is the primary acceptor of CO ₂	PEP is the primary acceptor of CO ₂
C:	fix CO ₂ through ornithine cycle	fix CO ₂ through the Hatch-Slack pathway
D:	Involves only photosystem P700	Involves both P700 and P680

35. Calculate the water potential of a plant cell whose solute potential is -2000kpa and pressure potential is+300pa.

- A: -2300 B: +1700
C: -2000 D: -1700

36. DNA profiling can be used to

- A: identify the probable origin of a body fluid sample
B: check immigration application
C: detect the presence of chronic diseases
D: detect the presence of cancer cells

37. Which of the following is a post-fertilization event in flowering plants?

- A: Embryo development
B: Formation of flower
C: Formation of pollen grains
D: Transfer of pollen grains

38. The role of restricting enzymes in DNA technology is to

- A: provide a vector for the transfer of recombinant DNA
B: produce cDNA from mRNA
C: produce a cut at specific recognition sequence on DNA
D: reseals sticky ends after complementary base pairing.

39. Choose the correct equation which shows the sex chromosomes when a sperm fertilizes an egg to produce a baby boy

	sperm		egg	foetus
A:	X	x	Y	XY
B:	Y	x	X	XY
C:	Y	x	Y	YY
D:	X	x	X	XX

40. Which of the following factors or force can alter the allele frequency in a small population?

- A: mutation
B: Non Random mating
C: Gene inheritance
D: Variation

41. Which one of the following is an example of discontinuous variations in humans;

- A: height,
B: Weight,
C: intelligence,
D: ABO system of blood group.

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.	A marine teleost ingest a lot of sea water	Excess salt in the blood of marine fish is eliminated by chloride secretory glands.
43.	In flowering plants the male gamete is in the pollen grain.	During the growth of pollen tube the generative nucleus develops into two male gametes
44.	Transpiration pull help in moving manufactured food from the leaves to their storage sites	The phloem companion cell has most cell organelles found in living cell
45.	When a germinating bean seedling is placed horizontally on soil in the dark the plumule grows upwards while the radical grows downwards	The plumule grows away from high auxin concentration while radical grows towards high concentration of auxin.
46.	A blood clot prevents further blood loss	Blood clotting minimizes blood flow from an injured area
47.	The cells of the distal convoluted tubule have a similar structure to those of the proximal convoluted tubule	The distal convoluted tubule is the longest region of the nephron
48.	The main homeostatic function of the skin is thermoregulatory	Subcutaneous fat in the epidermis of the skin helps in insulation.
49.	Anemia results in tissues being starved of oxygen because of decreased oxygen carrying capacity	Vitamin D regulates the deposition of calcium bones
50.	The absorption spectrum of chlorophyll depends on the wavelength of light	Shorter wavelengths of light contain more energy

STOP

GO BACK AND CHECK YOUR WORK