

GENERAL CERTIFICATE OF EDUCATION BOARD

General Certificate of Education Examination

0565 HUMAN BIOLOGY 1

JUNE 2023

ORDINARY LEVEL

Centre Number	
Centre Name	
Candidate Identification Number	
Candidate Name	

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.

1. USE A SOFT HB PENCIL THROUGHOUT THE 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 "ORDINARY LEVEL – 0565 HUMAN BIOLOGY 1"
4. Fill in the information required in the spaces above.
5. Fill in the information required in the spaces provided on the answer sheet using your HB pencil: **Candidate Name, Exam Session, Subject Code and Candidate Identification 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

6. Answer ALL the 50 questions in this Examination. All questions carry equal marks.
7. Non-programmable Calculators are allowed.
8. 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]

9. 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.
10. Avoid spending too much time on any one question. If you find a question difficult, move on to the next question. You can come back to this question later.
11. Do all your rough work in this booklet using the blank spaces in the question booklet.
12. 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.

0565/1

Turn Over

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1. Identify the feature that makes man structurally different from other mammals.
- External ears
 - Heterodont dentition
 - Four chambered heart
 - Opposable thumbs

2. Two solutions separated by a permeable membrane with equal movement of water in both directions are described as being:
- Hypertonic
 - Isotonic
 - Hypotonic
 - Concentrated

3. Which cell organelle synthesizes proteins?
- Ribosome
 - Nucleus
 - Mitochondrion
 - Lysosome

4. Which of the tissues bind organs together in the body?
- Epithelial tissue
 - Nervous tissue
 - Connective tissue
 - Skeletal tissue

5. Meiosis is a type of cell division that occurs in:
- Somatic cells
 - Sex cells
 - Body cells
 - Muscle cells

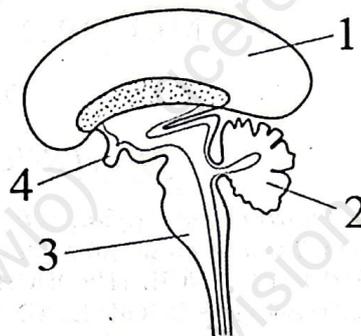
6. Soaking a piece of mammalian limb bone into dilute HCL for a few hours makes it:
- Flexible and inelastic
 - Soft and brittle
 - Brittle and elastic
 - Soft and flexible

7. Identify the characteristics which best describes skeletal muscle:
- Has elongated and multinucleated fibres which contract fast and easily get tired.
 - Has elongated and multinucleated fibres which contract fast and never get tired
 - Has spindle shaped and multinucleated fibres which contract fast and never get tired.
 - Has branched and uninucleated fibres which contract fast and never get tired

8. Identify the structure which prevents dislocation of bones during movement.
- Cartilage
 - Ligament
 - Tendons
 - Synovial fluid

9. Which is the direction of transmission of a nerve impulse along a neuron?
- Axon → dendron → dendrite
 - Dendrite → dendron → axon
 - Cell body → dendrite → axon
 - Dendron → axon → dendrite

10. Which of the part indicated on the diagram of the brain below controls the breathing rate?



(Courtesy of CJ Clegg et al. Advanced Biology, Principles and application)

- 1
- 2
- 3
- 4

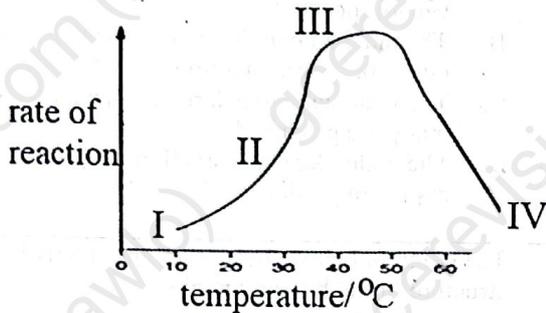
11. Identify the eye defect that can be corrected using a concave lens.
- Astigmatism
 - Presbyopia
 - Hypermetropia
 - Myopia

12. Identify the gland which secretes both hormones and enzymes in the human body.
- Pancreas
 - Pituitary
 - Thyroid
 - Adrenal

13. How does adrenaline affects the heart beat rate and the functioning of the liver?
- Causes heart beat to decrease and liver to convert glucose to glycogen
 - Causes heart beat to decrease and liver to convert glycogen to glucose
 - Causes heart beat to increase and liver convert glycogen to glucose
 - Causes the heart beat to increase and liver convert glucose to glycogen

14. Choose a mineral element necessary in the diet for the prevention of goiter.
- Iron
 - Iodine
 - Calcium
 - Sodium

15. The graph below shows the effect of temperature on an enzyme controlled reaction.



Which one of the points corresponds to the optimum temperature for this reaction?

- III
 - II
 - I
 - IV
16. A digestive disorder characterized by the sending out of hard faeces is known as:
- Diarrhoea
 - Gastritis
 - Dysentery
 - Constipation
17. Select a disaccharide below which when hydrolyzed produces only glucose molecules.
- Lactose
 - Sucrose
 - Maltose
 - Starch

18. Which one of the statements below is true of inspiration.
- Diaphragm muscles contract giving the diaphragm a flattened shape
 - Diaphragm muscles contract giving the diaphragm a dome shape
 - Diaphragm muscles relax and the diaphragm flattens.
 - Diaphragm muscles relax and become dome-shaped.

19. Identify a short-term effect of exercise on the breathing rate.
- Expansion of the alveoli
 - Increase in the volume of the lungs
 - Increase in the breathing rate
 - The diaphragm muscles become larger

20. Which one of the following blood vessels is superficially located in the body?
- Arteries
 - Veins
 - Capillaries
 - Arterioles

21. How is Lymph different from blood?
- Movement of Lymph is by the pumping action of the heart
 - Lymph flows in one direction only
 - Lymph contains many platelets
 - Lymph contains more digestive food nutrients

22. Anaemia is a blood disorder caused by:
- Shortage of white blood cells
 - Shortage of blood platelets
 - Shortage of blood Plasma
 - Shortage of red blood cells

For questions 23 to 26 one or more of the responses is (are) correct. Decide which of the responses is/ are correct and then choose:

- If 1, 2 and 3 are correct
- If 1 and 2 only are correct
- If 2 and 3 only are correct
- If 1 only is correct

23. Are the homeostatic organs in the human body
- Kidneys and Liver
 - Lungs and skin
 - Skin and kidneys
- -
 -
 -

24. How is vasodilation in the skin brought about?
- Skin arterioles narrow and blood flow to the surface
 - Skin arterioles dilate
 - Shunt vessels dilate
- -
 -
 -

Turn Over

25. The part of the nephron which serves as the target for the action of Antidiuretic hormone?

1. Distal convoluted tubule
2. Glomerulus
3. Loop of Henle.

A
B
C
D

26. What usually happens after profuse sweating during exercise?

1. Less urine is formed
2. Blood becomes less concentrated
3. Less water is reabsorbed by the kidney

A
B
C
D

27. Identify a substance produced by the liver

- A Glucose
- B Bile
- C Insulin
- D Enzymes

28. A chemical barrier against pathogens that is provided by the eye is:

- A The production of Lysozyme
- B The production of aqueous and vitreous humours
- C The production of tears
- D The production of antibodies

29. Choose the correct sequence of events for a blood clot to be formed on a damaged tissue:

- A Release of thrombokinase, conversion of prothrombin to thrombin, formation of a mesh network, exposure of platelets to air.
- B Release of thrombokinase, exposure of platelets to air, conversion of fibrinogen to fibrin, calcium ions convert prothrombin to thrombin
- C Release of thrombokinase, conversion of prothrombin to thrombin, conversion of fibrinogen to fibrin, formation of a mesh network.
- D Release of thrombokinase, calcium ions convert prothrombin to thrombin, exposure of platelets to air formation of a mesh network

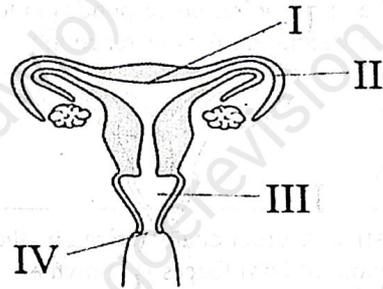
30. A person with anti-A antibodies and anti-B antibodies in its plasma belongs to what blood group?

- A Blood group A
- B Blood group B
- C Blood group AB
- D Blood group O

31. Which information about the male gamete is correct?

- A The male gamete is large in size and cannot move
- B The male gamete is small in size and only one is produced at a time
- C The male gamete is large in size and many are produced.
- D The male gamete is small in size and many are produced.

32. The diagram below shows the reproductive structure of the human female.



(Courtesy of Roland Soper, GCSE Human Biology)

In which part does fertilization occur?

- A II
- B III
- C I
- D IV

33. Select the term often used to describe the continuous presence of malaria in a community.

- A Epidemic
- B Pandemic
- C Endemic
- D Sporadic

34. What main event characterizes the menstrual cycle in a human female?

- A The release of blood and accumulated semen
- B The release of blood and poorly formed eggs
- C Continuous bleeding due to hemorrhage
- D Break down of uterine lining and its release with unfertilized egg

35. What are the possible genotypes of offspring resulting from the marriage between a male of blood group O and a female of blood group AB?
- A AO and BO
B OO and AO
C OO and BO
D AO and AB

36. During the birth process, what initiates the rhythmic contractions of the walls of the uterus?
- A The breakage of the amniotic Sac.
B The head of the baby lying above the cervix
C The release of the hormone Oxytocin
D The voluntary push by the mother

37. For a normal couple to have a colour blind Son, the woman's genotype must be;
- A $X^N Y$
B $X^N X^n$
C $X^N X^N$
D $X^N Y$

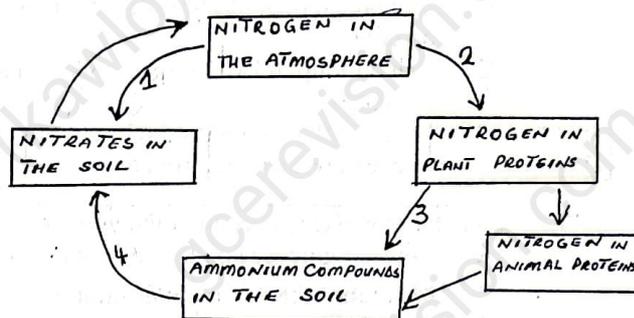
38. An organism having a pair of identical alleles is described as being
- A Heterozygous
B Homozygous
C Homogametic
D Heterogametic

39. Given the food chain below:
Grass → Chick → Snake → Hawk
What is the trophic level of the hawk?
- A Secondary Consumer
B Primary Consumer
C Tertiary Consumer
D Quaternary Consumer

40. Which one of the following diseases is caused by a virus?
- A Cholera
B Chicken pox
C Diphtheria
D Candidiasis

41. Identify the main component of the cell wall of Fungi.
- A Cellulose
B Phospholipids
C Chitin
D Glycogen.

42. Study the illustration of the nitrogen cycle below and answer the question that follows:



What is the name of the bacterium that brings about the process numbered 2?

- A Denitrifying bacteria
B Nitrifying bacteria
C Putrefying bacteria
D Nitrogen-fixing bacteria

43. What is eutrophication?
- A Over enrichment of a water body with excess nutrients
B Overgrowth in the water body of algae and bacteria
C Leaching of inorganic fertilizers from farmlands into a water body
D The release of sewage effluent into a water body

44. What is the principle of smoking as a method of food preservation?
- A The food is subjected to a high temperature and then rapidly cooled
B Removes water from the food making it unfavorable for the growth of microbes
C It denatures the natural enzymes of the micro-organisms
D Provides acid conditions that inhibit the growth of micro-organisms.

45. Identify a common practice amongst students in a boarding school which should be discouraged.
- A Taking regular exercises
B Taking regular baths
C Sharing of meals
D Sharing underwears and sport wears

Turn Over

46. What causes smoker's cough?
- A The buildup of extra mucus in the trachea and bronchi
 - B The breakdown of the walls of the lung alveolus
 - C The buildup of extra mucus and tar inside the lungs
 - D Nicotine that damages the lining of the trachea bronchi and bronchioles.

-
47. Regular exercise is needed in the body to:
- A Burn up glucose and provoke hunger
 - B Make the athlete a popular figure
 - C Provide income to the winner
 - D Improve on muscle tone

-
48. What kind of clinic should a mother with a new born baby attend?
- A Postnatal
 - B Antenatal
 - C Prenatal
 - D Family Planning

49. Identify one important role of play grounds from the list below.

- A Hide out for thieves and delinquents
- B Place to practice drug addiction
- C Sites for recreation and leisure
- D Help people to run away from problems.

-
50. What first aid measure would you use when trying to rescue a person who has been electrocuted?

- A Rush victim to the hospital immediately
- B Switch off the source of power immediately
- C Administer first aid drugs to the victim.
- D Immobilize the part of the body affected.

STOP
GO BACK AND CHECK YOUR WORK