

MARCH 2022

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| The Teachers' Resource Unit and the Regional Inspectorate of Pedagogy, in collaboration with NASTA | SUBJECT CODE NUMBER 0565 | PAPER NUMBER 1 |
| GENERAL CERTIFICATE OF EDUCATION REGIONAL MOCK EXAMINATION | SUBJECT TITLE HUMAN BIOLOGY | |
| CANDIDATE NAME: CANDIDATE NUMBER: CENTRE NUMBER: | | |
| ORDINARY 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 "Ordinary level -0565 code and subject title—HUMAN 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

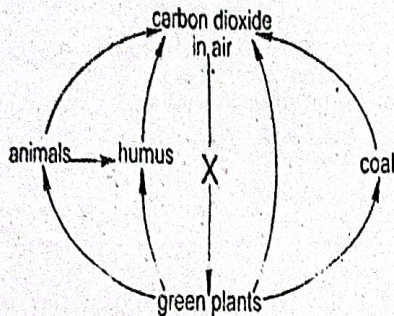
How to answer questions in this examination:

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. You can come back to the 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.

- The limbs of mammals are built on a basic pentadactyl plan. The tibia and fibula of the hind limb are represented in the fore limb by the;
 - Humerus and femur
 - Radius and ulna
 - Carpals and metacarpals
 - Femur and metatarsals

- The diagram shows the Carbon Cycle



What process does letter X represent?

- Photosynthesis
 - Combustion
 - Decomposition
 - Animal respiration
- Which of the following activities is not carried out in a health centre?
 - Vaccination of children
 - Taking x-rays
 - Administration of injection
 - Health education
 - Haemophilia is caused by a sex linked recessive allele. Two parents have a haemophiliac son, a normal son, and a haemophiliac daughter. What are the most likely genotypes of the parents?

| Mother | Father |
|-------------|--------|
| A. X^hX^h | X^HY |
| B. X^HX^H | X^hY |
| C. X^HX^h | X^hY |
| D. X^HY^h | X^HY |
 - Which one of the following should first be done to an unconscious person by a first aider?
 - Try to reduce the effect of shock
 - Stop any bleeding
 - Restore breathing
 - Clean and dress any wound
 - Tomato seedlings transplanted under hot sunlight will wilt for one of the following reasons
 - Excess water absorbed by the roots
 - Excess loss of water through the roots
 - Excess loss of water through the leaves
 - Excess pressure on the plant
 - Receptors are structures which detect
 - Responses
 - Impulses
 - Stimuli
 - Dendrites

Directions: For Question 8-11 below, ONE or more of the responses are correct. Decide which one of the responses is (are) correct. Then choose;

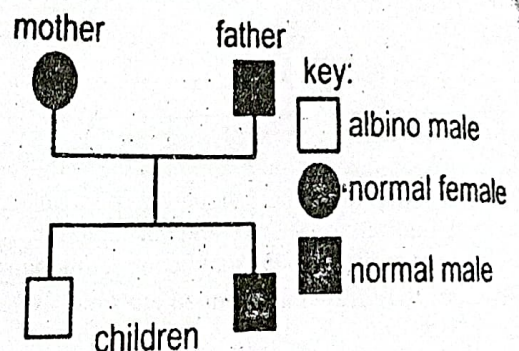
- If (1), (2) and (3) are all correct
 - If (1) and (2) only are all correct
 - If (2) and (3) only are all correct
 - If (1) only is correct
- We put on clothes in order to

- Decorate the body
 - Keep the body warm
 - Prevent pathogens from entering the body.
- Which mineral elements are responsible for the toughness and rigidity of a bone?
 - Phosphorus
 - Calcium
 - Iron
 - Patients are assigned to different hospital wards on the basis of
 - Type of disease
 - Sex (male or female)
 - Region of origin
 - Smooth muscles are found in
 - The heart
 - The gut wall
 - The arteries
 - Substances produced by some white blood cells against infections are called
 - Antibiotics
 - Antibodies
 - Antigens
 - Pathogens
 - Which of the following substances are stored in the liver
 - Bile and iron
 - Iron and vitamin C
 - Bile and vitamin D
 - Vitamin A and vitamin D
 - The formation of a blood clot within an undamaged blood vessel;
 - Hypertension
 - Hypotension
 - Thrombosis
 - Stroke
 - Why does your respiratory rate increase when jumping
 - Because jumping excites the lungs
 - Because jumping produces heat
 - Because jumping makes the heart beat faster
 - Because more energy is needed by the leg muscles
 - The Eustachian tube connects.
 - the inner ear with the throat
 - the middle ear with the inner ear
 - the middle ear with the throat
 - the outer ear with the nose
 - To enter and leave a cell, substances must pass through
 - Plasma membrane
 - Golgi apparatus
 - Nuclear membrane
 - Microtubules
 - Water acts as a solvent and transport medium. In man, most of the water is absorbed from the gut in
 - The colon
 - The ileum
 - The duodenum
 - The stomach
 - Samples of blood in the renal artery and renal vein are analyzed. What does the blood in the renal artery contain in comparison with the blood in the renal vein?
 - More oxygen and less urea
 - More CO_2 and more urea
 - Less oxygen and more urea
 - Less CO_2 and more urea

20. Which of the following is the main cause of body odour when a person has not maintained skin hygiene?
- Failure to keep the hair short and clean
 - The growth and activities of protozoan colonies
 - The growth and activities of viral colonies
 - The growth and activities of bacterial colonies
21. Where is red marrow found in the cross section on the human fibula?
- Periosteum
 - Epiphysis
 - Medullary cavity
 - Lamellae
22. What is the cause of sickle cell anaemia?
- Viral infection
 - Bacterial infection
 - Dietary deficiency
 - Gene mutation
23. Which of the following does not occur at fertilization?
- The tail falls off the sperm, which enters the egg
 - Chromosomes divide as the sperm enters the egg
 - Nuclei of the sperm and ovum fuse together
 - The outer membrane of the egg will not allow a second sperm to enter
24. A layer of dead skin cells is found in the:
- Cornified layer
 - Granular layer
 - Malpighian layer
 - Sub-cutaneous layer
25. Mammals are said to be endothermic (homeothermic). What does this mean?
- Have high metabolic rate
 - Have warm blood
 - Maintain a constant body temperature
 - Have a wide body temperature range
26. The maintenance of a constant internal environment is:
- Excretion
 - Homeostasis
 - Osmoregulation
 - Defaecation
27. A plasma protein that helps in blood clotting is called:
- Fibrinogen
 - Pepsinogen
 - Trypsinogen
 - Chymotrysinogen
28. Approximately how many ova will be released from a female's ovaries during her lifetime?
- 150-250
 - 40-100
 - 400-500
 - 600-800
29. What name is given to the cells that respond to secretion from an endocrine gland?
- Epidermal cells
 - Gamete cells
 - Somatic cells
 - Target cells
30. What is the number of chromosomes found in the human gametes and body cells?

| | Gametes | Body cells |
|---|---------|------------|
| A | 46 | 46 |
| B | 46 | 23 |
| C | 23 | 23 |
| D | 23 | 46 |

31. What is the main danger of excessive use of drugs such as penicillin?
- Resistant bacteria survive and multiply
 - They eventually cause sterility
 - They accumulate in the body tissues
 - They become poisonous with repeated use
32. The greatly elongated part of the neurone along which a nervous impulse is transmitted to an effector organ or to another neurone is called:
- Axon
 - Dendrite
 - Myelin sheath
 - Node of Ranvier
33. At which of the following stages are bacteria destroyed during water purification at a waterworks?
- Sand filters
 - Coarse and fine screens
 - Chlorination tanks
 - Reservoir
34. Why is insulin not taken orally during the treatment of diabetes?
- It irritates the gut wall
 - It is slowly absorbed by the stomach and intestinal walls
 - It will be inactivated by HCl in the stomach
 - It is a protein and will be digested by protein digesting enzymes in the gut
35. The diagram below shows the inheritance of albinism in a family. Albinism is caused by a recessive allele.



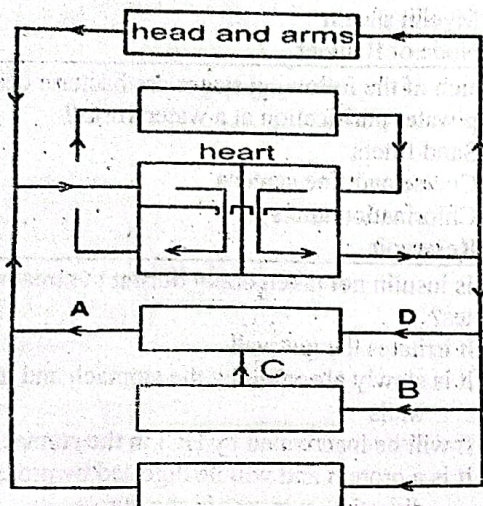
What are the genotypes of the parents?

| | Mother | Father |
|---|----------------------|----------------------|
| A | Heterozygous | Heterozygous |
| B | Homozygous dominant | Heterozygous |
| C | Heterozygous | Homozygous dominant |
| D | Homozygous recessive | Homozygous recessive |

36. Milk produces a red precipitate when heated with Millon's reagent. A yellow precipitate develops when the Fehling's reagent is used on milk. Using these results only, which nutrients does milk contain?
- Protein and fat
 - Protein and reducing sugar
 - Fat and starch
 - Starch and reducing sugar
37. Which of the following does not pass out of blood capillaries (glomerulus) into the Bowman's capsule during ultrafiltration?
- Salts
 - Urea
 - Fibrinogen
 - Glucose

38. When the ribs move downwards and the diaphragm assumes a dome shape, which of these best explains what happens?
- Pressure in the thoracic cavity drops
 - Air is drawn in
 - Air is expelled
 - Inhalation and exhalation occur

Question 39 concerns the diagram below of the human circulatory system



39. Which of the blood vessels (A-D) carries blood with the highest average temperature?

- A
- B
- C
- D

40. What is the major source of body heat?

- Blood circulation and metabolic activities
- Vasodilation and production of sweat
- Contracting muscles and vasodilation
- Metabolic activities and contracting muscles

41. Which of the following is not an enzyme?

- Erepsin
- Pepsin
- Trypsin
- Secretin

42. Cell fragments present in blood that help in blood clotting are:

- Fibrinogen
- Fibrin
- Platelets
- Phagocytes

43. Living agents transmitting pathogens are known as:

- Fomites
- Vectors
- Infectious agents
- Disease vehicles

44. The last region of the stomach which opens into the duodenum is called the:

- Pyloric region
- Cardiac region
- Iliac region
- Thoracic region

45. The outbreak of a disease that affects a large number of individuals within a population is:

- Epidemic
- Sporadic
- Pandemic
- Endemic

46. For an embryo to develop, it requires:

- Food and oxygen
- Parental care
- A shell for protection
- A womb in which to develop

47. Which of the following flows through a food chain and a food web

- CO₂ and oxygen
- CO₂ only
- Oxygen and energy
- Matter and energy

48. Which of the following diagrams shows the sex chromosomes when a sperm fertilizes an egg to produce a baby boy?

| | Sperm | | Egg | | Fertilized egg |
|----|-------|---|-----|---|----------------|
| A. | X | + | Y | = | XY |
| B. | Y | + | X | = | XY |
| C. | Y | + | Y | = | YY |
| D. | X | + | X | = | XX |

49. Which of the following is well developed in an intestinal parasitic worm?

- Sense organs
- Digestive system
- Organs of locomotion
- Reproductive system

50. Select the function of HCL secreted in the stomach during food digestion.

- Inhibits Salivary amylase from
- Activates Lysozyme so that they can kill potential harmful bacteria.
- Denature proteins in the food to permit easy digestion.
- Converts some active forms of enzymes in the digestive system to their inactive form.

END

GO BACK AND CHECK YOUR WORK