CANDIDATE – PLEASE NOTE!

PRINT your name on the line below and return this booklet with your answer sheet. Failure to do so may result in disqualification.

FORM TP 2020080

TEST CODE **01253010**

MAY/JUNE 2020

CARIBBEAN EXAMINATIONS COUNCIL

CARIBBEAN SECONDARY EDUCATION CERTIFICATE® EXAMINATION

HUMAN AND SOCIAL BIOLOGY

Paper 01 – General Proficiency

1 hour 15 minutes

01 JUNE 2020 (p.m.)

READ THE FOLLOWING INSTRUCTIONS CAREFULLY.

1. This test consists of 60 items. You will have 1 hour and 15 minutes to answer them.

2. In addition to this test booklet, you should have an answer sheet.

3. Each item in this test has four suggested answers lettered (A), (B), (C), (D). Read each item you are about to answer and decide which choice is best.

4. On your answer sheet, find the number which corresponds to your item and shade the space having the same letter as the answer you have chosen. Look at the sample item below.

   Sample Item

   Abnormally high blood pressure is called

   (A) distension
   (B) hypotension
   (C) hypertension
   (D) hyperglycaemia

   Sample Answer

   The best answer to this item is "hypertension", so (C) has been shaded.

5. If you want to change your answer, erase it completely before you fill in your new choice.

6. When you are told to begin, turn the page and work as quickly and as carefully as you can. If you cannot answer an item, go on to the next one. You may return to that item later.

7. Figures are not necessarily drawn to scale.

DO NOT TURN THIS PAGE UNTIL YOU ARE TOLD TO DO SO.

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1. The ability of a living organism to detect and respond to changes in its environment is referred to as

(A) nutrition
(B) excretion
(C) movement
(D) irritability

2. Which of the following organelles in the cell allows substances to pass in and out of the cell?

(A) Nucleus
(B) Vacuole
(C) Cytoplasm
(D) Cell membrane

3. Which of the following factors is NOT necessary for photosynthesis to take place?

(A) Water
(B) Oxygen
(C) Sunlight
(D) Carbon dioxide

4. An example of diffusion is the movement of

(A) sodium across cell membranes
(B) glucose from the digestive tract to the villi
(C) oxygen from the alveoli to capilliaries
(D) sucrose from phloem tubes to companion cells

5. Which of the following foods is a good source of vitamin A?

(A) Milk
(B) Orange
(C) Kidney
(D) Fish liver oil

6. Which of the following cell structures traps energy from sunlight to help in the production of simple sugars?

(A) Nucleus
(B) Cell wall
(C) Chloroplast
(D) Mitochondrion

7. Which of the following reagents gives a positive test for the **main** food present in a slice of baked potato?

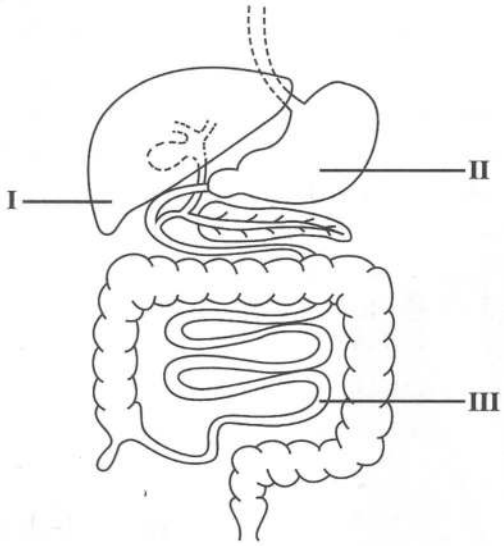
(A) Biuret
(B) Ethanol
(C) Iodide solution
(D) Benedict's solution

8. Which of the following are properties of enzymes?

I. They mostly work on only one substrate.
II. They work best at a particular pH.
III. They are not affected by temperature.

(A) I and II only
(B) I and III only
(C) II and III only
(D) I, II and III

Item **9** refers to the following diagram of part of the human digestive system.



9. Which sequence correctly matches each numbered structure to its function?

	Secretes Gastric Juice	**Produces Bile**	**Absorbs Soluble End products**
(A)	I	II	III
(B)	I	III	II
(C)	II	I	III
(D)	II	III	I

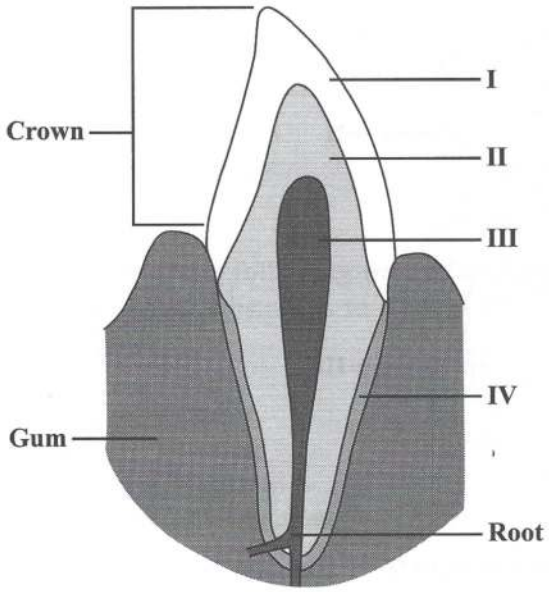
10. Which of the following types of teeth is BEST adapted for tearing tough pieces of food?

(A) Molar
(B) Incisor
(C) Canine
(D) Premolar

11. During the process of digestion, bile salts aid in

(A) egestion
(B) peristalsis
(C) mastication
(D) emulsification

Item **12** refers to the following labelled diagram of a tooth.



12. Which of the labelled parts contains blood vessels and nerves?

(A) I
(B) II
(C) III
(D) IV

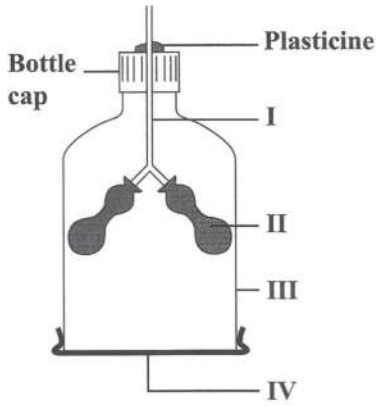
13. Kwashiorkor is a deficiency disease caused by a lack of

(A) fats
(B) protein
(C) glycogen
(D) carbohydrates

14. The process by which undigested food is eliminated from the body is called

(A) egestion
(B) excretion
(C) ingestion
(D) deamination

Item **15** refers to the following drawing of a model used to demonstrate breathing in humans.



15. Which of the labelled parts represents the diaphragm?

(A) I
(B) II
(C) III
(D) IV

16. During a sprint, muscles in the human body produce lactic acid by the process of

(A) excretion
(B) digestion
(C) aerobic respiration
(D) anaerobic respiration

17. Which of the following is the correct sequence of events in mouth-to-mouth resuscitation?

I. Pinch the nostrils.
II. Place your mouth over the other person's and blow gently.
III. Remove your mouth.
IV. Tilt the head backward.

(A) I, II, III, IV
(B) I, IV, II, III
(C) IV, I, II, III
(D) IV, II, III, I

18. Which of the following are true about phagocytes?

I. Have a rounded nucleus
II. Engulf and ingest bacteria
III. Are a type of white blood cell

(A) I and II only
(B) I and III only
(C) II and III only
(D) I, II and III

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19. During respiration, the release of energy in a cell occurs when

(A) ATP is converted to ADP
(B) ADP is converted to ATP
(C) ADP is converted to lactic acid
(D) ATP and oxygen form oxyhaemoglobin

20. Which of the following substances found in cigarette smoke is addictive?

(A) Tar
(B) Nicotine
(C) Carbon dioxide
(D) Carbon monoxide

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21. The double pumping of the heart allows blood rich in

(A) oxygen to be taken to the body during the second pump
(B) oxygen to be taken to the lungs during the first pump
(C) carbon dioxide to be taken to the body during the first pump
(D) carbon dioxide to be taken to the lungs during the second pump

22. Which of the following vitamins assists in the process of blood clotting?

(A) Vitamin A
(B) Vitamin B
(C) Vitamin D
(D) Vitamin K

23. The left side of the heart has a thicker muscular wall in order to

(A) pump blood to the lungs
(B) receive blood from the lungs
(C) pump blood to the rest of the body
(D) receive blood from the rest of the body

24. Bones act as levers, while cartilage assists with

(A) movement at a joint
(B) holding joints together
(C) connecting muscles to bone
(D) reducing friction at the joints

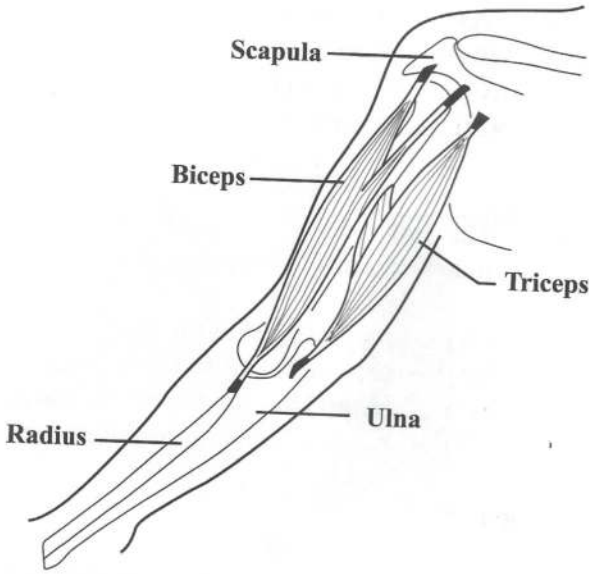
Item **25** refers to the following diagram of a type of cell.



25. The diagram MOST likely represents a

(A) liver cell
(B) phagocyte
(C) lymphocyte
(D) red blood cell

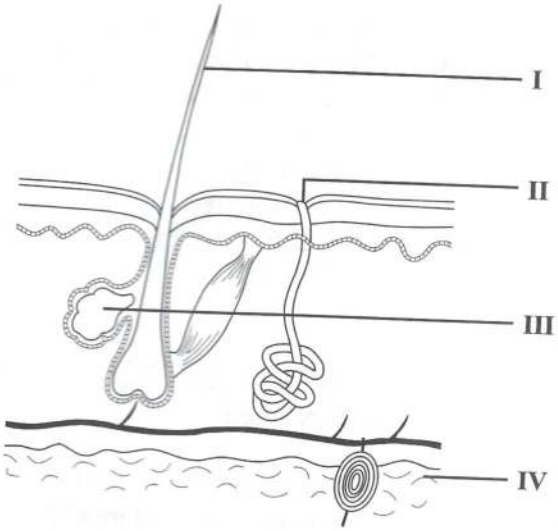
Item **26** refers to the following diagram of a human arm.



26. When the arm is bent or flexed, the

(A) triceps shortens
(B) scapula is pulled down
(C) triceps pulls on the ulna
(D) biceps pulls on the radius

Item **27** refers to the following diagram of a section through the human skin.



27. Which labelled part represents the sweat pore?

(A) I
(B) II
(C) III
(D) IV

28. Which of the following is the MOST severe damage caused by the prolonged wearing of high-heeled shoes?

(A) The bones in the feet become misaligned.
(B) Corns and calluses develop on the toes.
(C) The spaces between the toes tend to widen.
(D) There is less support placed on the heels of the feet.

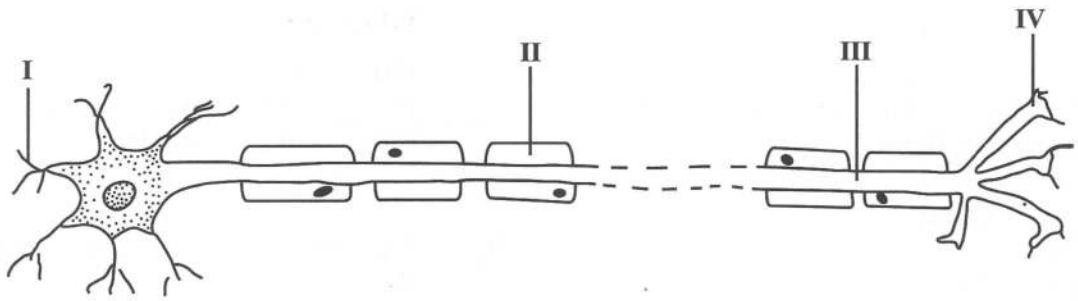
29. Which of the following responses occurs in the body when a marathon runner consumes too little water?

(A) Less ADH secreted, decreases urine concentration
(B) More ADH secreted, increases reabsorption of water
(C) More ADH secreted, decreases reabsorption of water
(D) Less ADH secreted, increases urine concentration

30. The longest continuous bone in the human skeleton is the

(A) rib
(B) femur
(C) pelvis
(D) humerus

Item **31** refers to the following diagram of a motor neurone.



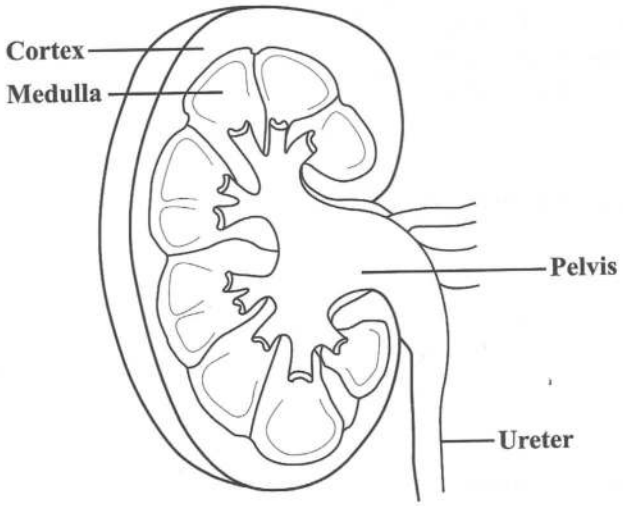
31. Which labelled part is the axon?

(A) I
(B) II
(C) III
(D) IV

32. Liam notices that his face is flushed (red) after playing football. Which of the following processes causes his face to be flushed?

(A) Insulation
(B) Evaporation
(C) Vasodilation
(D) Vasoconstriction

Item **33** refers to the following diagram showing a longitudinal section through a human kidney.



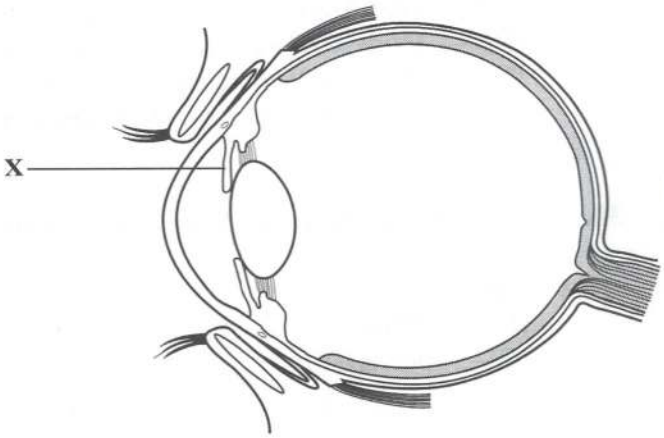
33. Which of the labelled structures contains the loop of Henlé?

(A) Pelvis
(B) Ureter
(C) Cortex
(D) Medulla

34. An example of a cranial reflex (involuntary) action is

(A) a knee jerk
(B) a pupil reflex
(C) dropping a hot object
(D) eating food when hungry

Item **35** refers to the following diagram of a longitudinal section through a human eye.



35. The part labelled **X** is the

(A) iris
(B) cornea
(C) ciliary muscle
(D) circular muscle

36. The central nervous system is made up of the

(A) brain and spinal cord
(B) brain and spinal nerves
(C) brain and cranial nerves
(D) spinal cord and cranial nerves

37. Which of the following birth control methods is considered to be the LEAST reliable?

(A) Condom
(B) Rhythm
(C) Oral contraceptive
(D) Intrauterine device

38. Which of the following comparisons is NOT true for nervous and hormonal control?

	Nervous Control	Hormonal Control
(A)	Messages travel slowly and take longer to have an effect.	Messages travel fast and have a rapid effect.
(B)	Chemical messages travel across synapses.	Only chemical messages are involved.
(C)	Electrical messages travel along neurones.	Messages are transported in blood.
(D)	The response is usually short-lived.	The effects are often long-lasting.

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39. Fertilization occurs in the oviduct when

(A) sperms are released
(B) the ovum is released
(C) sexual intercourse takes place
(D) the sperm fuses with the ovum

40. The MAIN reason for practising family planning is to

(A) make families richer
(B) improve the economy of a country
(C) give individuals more leisure time
(D) ensure sufficient resources for each family member

41. Chromosomes are made up of protein and

(A) DNA
(B) RNA
(C) starch
(D) fat

42. Which of the following are true about the fallopian tube?

I. Facilitates the passage of the ovum to the uterus
II. Site where fertilization of the ovum occurs
III. Produces the ovum

(A) I and II only
(B) I and III only
(C) II and III only
(D) I, II and III

43. Which of the following rows shows correct examples of genetic and environmental variation?

	Genetic Variation	Environmental Variation
(A)	Height	Eye colour
(B)	Tongue rolling	Height
(C)	Height	Tongue rolling
(D)	Eye colour	Tongue rolling

44. Good health may be BEST defined as

(A) the absence of disease, as well as complete physical well-being
(B) the absence of disease, as well as complete social well-being
(C) a state of complete physical, social and mental well-being
(D) a state of complete physical and economic well-being

45. In which of the following structures is an allele for eye colour located?

(A) Chromosome
(B) Mitochondrion
(C) Golgi apparatus
(D) Endoplasmic reticulum

Item **46** refers to the following diagram of a mother breastfeeding her baby.



46. What kind of immunity is illustrated by the activity above?

(A) Naturally acquired active
(B) Naturally acquired passive
(C) Artificially acquired active
(D) Artificially acquired passive

47. Antibiotics are chemicals which can safely be taken into the body. They do not harm human cells but they destroy

(A) fungi
(B) moulds
(C) viruses
(D) bacteria

48. During asexual reproduction, an organism produces new organisms that are identical to the parent by the process of

(A) mitosis
(B) meiosis
(C) pathogenesis
(D) reduction division

49. Which of the following diseases is caused by a fungus?

(A) Typhoid
(B) Ringworm
(C) Gonorrhoea
(D) Tuberculosis

50. Seema has the following signs/symptoms: constriction of bronchial tubes, coughing and wheezing. She is MOST likely suffering from

(A) asthma
(B) malaria
(C) typhoid
(D) tuberculosis

51. Which of the following cells does the AIDS virus attack?

(A) Phagocytes
(B) Muscle cells
(C) Erythrocytes
(D) Lymphocytes

GO ON TO THE NEXT PAGE

52. Infected persons display signs and symptoms of diseases. Which of the following signs and symptoms are correctly classified?

	Sign	Symptom
(A)	Headache	Shivering
(B)	Sore throat	Headache
(C)	Shivering	Sore throat
(D)	Headache	Sore throat

53. Which of the following gases contributes MOST to the greenhouse effect?

(A) Carbon dioxide
(B) Sulphur dioxide
(C) Nitrogen dioxide
(D) Carbon monoxide

54. The *Anopheles* mosquito is known for the spread of

(A) dengue
(B) malaria
(C) cholera
(D) gastroenteritis

55. Which of the following is the correct sequence when testing water for bacteria?

I. Examine the agar in the petri dish for the presence of coliform colonies.
II. Incubate the petri dish at 35 °C for 24 hours.
III. Place collected water in a sterile bottle.
IV. Pour the water onto sterile agar in a sterile petri dish.

(A) I, II, III, IV
(B) II, III, I, IV
(C) III, IV, II, I
(D) IV, I, II, III

56. The process of adding a calculated amount of chemical that is effective for killing bacteria in a water treatment plant, before water is distributed to customers, is called

(A) filtration
(B) screening
(C) chlorination
(D) sedimentation

57. The process by which water vapour changes to water is known as

(A) sublimation
(B) evaporation
(C) solidification
(D) condensation

58. Compaction is done at landfills in order to

(A) control the dust
(B) control the smells
(C) get rid of spaces that may harbour pests
(D) recover materials that are sent to be recycled

59. Which of the following gases is produced in a landfill site?

(A) Ozone
(B) Steam
(C) Oxygen
(D) Methane

60. Which of the following substances is biodegradable?

(A) Wood
(B) Plastic
(C) Concrete
(D) Styrofoam

END OF TEST

IF YOU FINISH BEFORE TIME IS CALLED, CHECK YOUR WORK ON THIS TEST.