Miss Corrections - Correct.

FORM TP 2020013

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.

TEST CODE 01253010

JANUARY 2020

CARIBBEAN EXAMINATIONS COUNCIL

CARIBBEAN SECONDARY EDUCATION CERTIFICATE® EXAMINATION

HUMAN AND SOCIAL BIOLOGY

Paper 01 – General Proficiency

1 hour 15 minutes

16 JANUARY 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) irritability
(D) movement

Items 2–3 refer to the following processes.

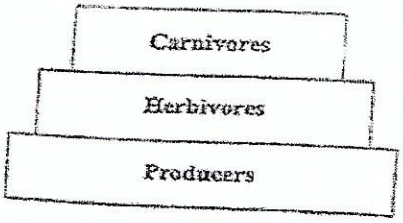
(A) Osmosis
(B) Diffusion
(C) Photosynthesis
(D) Active transport

In answering Items 2–3, each process may be used once, more than once or not at all.

2. Which process describes the spread of gases throughout a room?

3. Which process describes the absorption of water by plant roots?

Item 4 refers to the following trophic pyramid.



4. Based on the trophic pyramid above, which of the following statements is NOT true?

(A) The producers supply the most energy.
(B) The herbivore level provides less food than the producer level.
(C) The amount of available energy decreases with each successive level.
(D) The total mass of living organisms that can be supported at each higher level increases.

5. Which cell organelle is responsible for respiration?

(A) Nucleus
(B) Vacuole
(C) Cytoplasm
(D) Mitochondrion

6. Benedict's solution and iodide solution are used to test for which of the following food nutrients?

	Benedict's Solution	Iodide Solution
(A)	Reducing sugar	Starch
(B)	Starch	Reducing sugar
(C)	Nonreducing sugar	Starch
(D)	Starch	Nonreducing sugar

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7. Diarrhoea is often caused by bacteria and viruses present in the food that we eat.

Which of the following actions would MOST likely increase the chances of our food being contaminated by bacteria?

(A) Storing food in the refrigerator
(B) Keeping raw meat and cooked meat apart
(C) Leaving food on the stove top until everyone has eaten
(D) Washing hands before and after using the toilet

8. Which of the following conditions is a direct result of malnutrition?

(A) Obesity
(B) Asthma
(C) Diarrhoea
(D) Depression

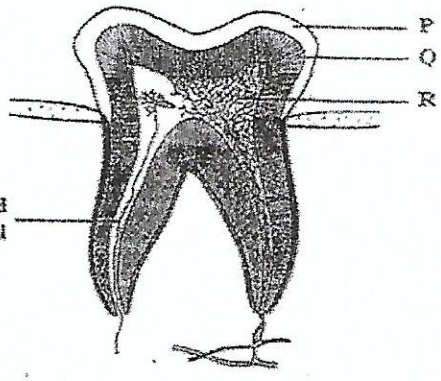
9. Which of the following micronutrients is essential for the development of red blood cells in infants?

(A) Iron
(B) Calcium
(C) Vitamin B
(D) Phosphorous

10. Which of the following substances has NO nutritive value in a balanced diet?

(A) Fat
(B) Fibre
(C) Protein
(D) Carbohydrate

Item 11 refers to the following vertical section through a molar tooth.



11. Which of the following rows shows the correct function of EACH of the parts labelled P, Q and R?

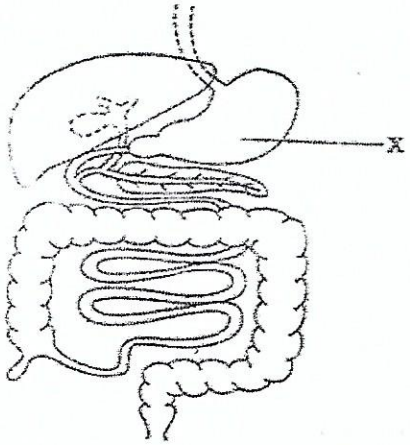
	Protection	Nourishment	Shape
(A)	P	Q	R
(B)	P	R	Q
(C)	R	Q	P
(D)	R	P	Q

12. Amino acids derived from protein are an essential component of our diet because they

(A) provide much of our energy needs
(B) are a good storage form for energy
(C) are used in the building up of new cells
(D) speed up the metabolic reactions in the body

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Item 13 refers to the following diagram of part of the human digestive system.



13. The part labelled X is responsible for the digestion of

(A) fats
(B) sugar
(C) starch
(D) protein

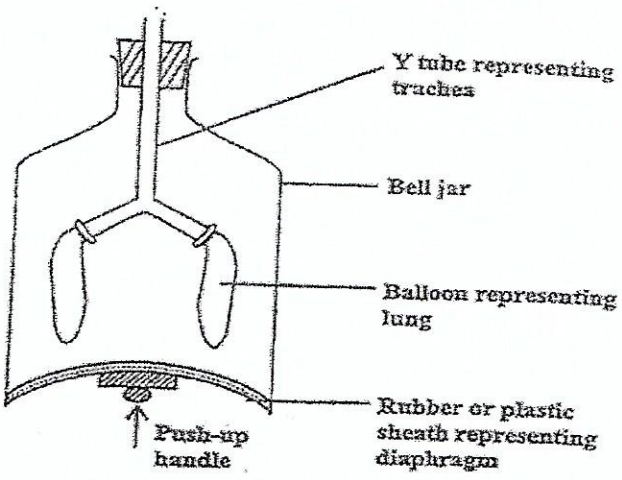
14. The region of the alimentary canal that is acidic is the

(A) oesophagus
(B) duodenum
(C) stomach
(D) colon

15. What is the function of the incisor in the digestion of food?

(A) Cutting
(B) Tearing
(C) Grinding
(D) Chewing

Item 16 refers to the following model which illustrates the process of breathing.



16. Which stage in the breathing process is represented in the model?

(A) Inhalation
(B) Exhalation
(C) Gaseous exchange
(D) A contracted diaphragm

17. Which of the following products BEST completes the equation for aerobic respiration?

Glucose + oxygen →

(A) carbon dioxide + water
(B) carbon dioxide + water + energy
(C) carbon monoxide + water + energy
(D) carbon monoxide + lactic acid + energy

18. Which of the following sequences shows the path taken by air moving into the lungs?

(A) Trachea → bronchioles → bronchi → alveoli
(B) Trachea → alveoli → bronchioles → bronchi
(C) Trachea → bronchi → bronchioles → alveoli
(D) Trachea → bronchi → alveoli → bronchioles

19. Pulmonary circulation involves the passage of blood from the

(A) lungs to the heart
(B) heart to the lungs and back
(C) lower parts of the body to the heart
(D) heart to the rest of the body (excluding the lungs)

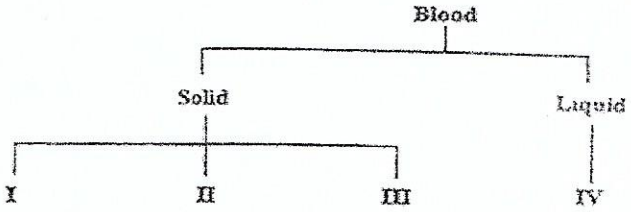
20. The vital capacity of a healthy person is approximately 3.5 dm^3. Which of the following persons will MOST likely have a vital capacity LESS than 3.5 dm^3?

(A) A 30-year-old female marathon runner
(B) A 30-year-old female, smoking for ten years
(C) A 60-year-old male saxophone player of ten years
(D) A 60-year-old male who walks two kilometres daily

21. High blood pressure MOST likely leads to

(A) lung damage
(B) liver damage
(C) stomach ulcers
(D) cardiac problems

Item 22 refers to the following chart.



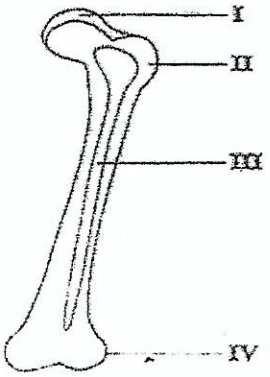
22. Which of the following labels correctly identifies plasma?

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

23. When there is bleeding from a cut through a person's skin, blood clots are formed when platelets become entangled in

(A) the dermis of the skin
(B) fibrin in the blood vessels
(C) hair erector muscles of the skin
(D) white blood cells in the blood vessels

Item 24 refers to the following diagram which shows a typical long bone.



24. Which of the labelled structures contains marrow?

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

25. Which of the following structures allows substances to pass through its wall?

(A) Vein
(B) Artery
(C) Arteriole
(D) Capillary

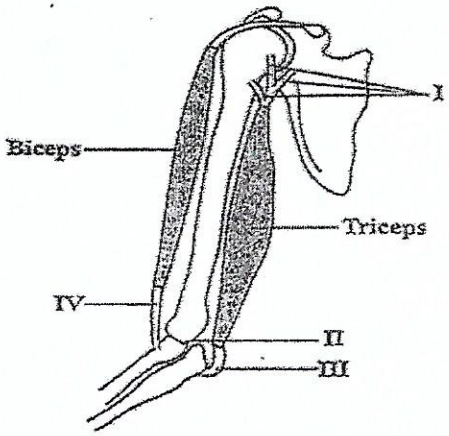
26. Which pair of bones is found in the lower arm?

(A) Tibia and fibula
(B) Radius and ulna
(C) Clavicle and scapula
(D) Humerus and scapula

27. A ball-and-socket joint is located

(A) at the elbow
(B) between wrist bones
(C) between the skull and the neck
(D) where the arm meets the shoulder

Item 28 refers to the following diagram which shows the forelimb during extension.



28. The point of origin of the triceps is indicated at

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

29. The form of energy (measured in calories) that warms up the body is referred to as

(A) heat
(B) temperature
(C) heat capacity
(D) chemical energy

30. Which of the following metabolic products of the human body is toxic?

(A) Bile
(B) Urea
(C) Water
(D) Glucose

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31. The area of the brain which acts as a thermostat in the regulation of body temperature is the

(A) cortex
(B) cerebellum
(C) hypothalamus
(D) medulla oblongata

32. Which of the following responses occurs in the body when the blood glucose level is too high?

(A) Fat is broken down to glucose.
(B) The pancreas secretes glycogen.
(C) Glucose is absorbed by nerve cells.
(D) The liver converts glucose to glycogen.

33. One function of the spinal cord is to

(A) activate the eye muscles
(B) transfer information to the brain
(C) transfer information to the endocrine glands
(D) coordinate the movement of the arms and legs

34. Which of the following treatments is BEST for a cataract of the eye?

(A) The use of convex lenses
(B) The use of concave lenses
(C) The intake of daily supplements of vitamin A
(D) The replacement of the eye lens by means of surgery

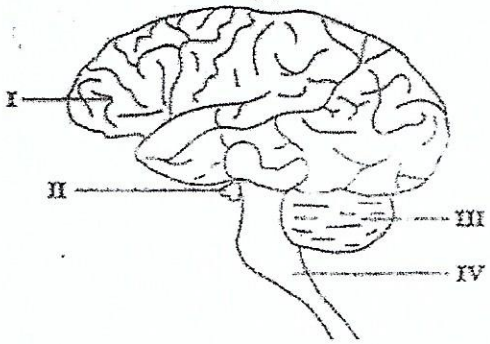
35. The human eye forms a clear image of an object on its

(A) iris
(B) sclera
(C) retina
(D) cornea

36. Which of the following functions is true for a receptor in the nervous system?

(A) Carries information as an electrical impulse
(B) Allows muscle to move when a stimulus is received
(C) Receives stimuli and converts them to electrical impulses
(D) Helps to maintain the internal environment in the body

Item 37 refers to the following diagram which shows a vertical section through the human brain.



37. Which region is responsible for conscious action or thought?

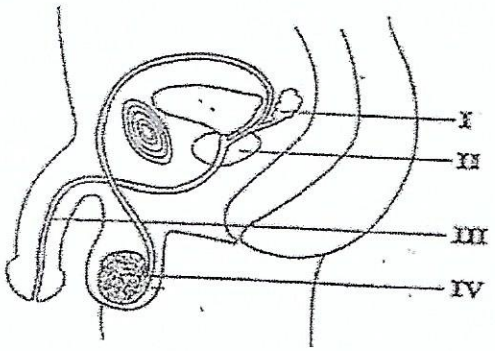
(A) I
(B) II
(C) III
(D) IV

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38. Which of the following comparisons is true for sexual and asexual reproduction?

	Sexual Reproduction	Asexual Reproduction
(A)	Involves gametes	No gametes
(B)	Diploid	Haploid
(C)	Identical offspring	Variation occurs
(D)	Produces many offspring quickly	Produces fewer offspring because the process is slow

Item 39 refers to the following diagram which shows the human male reproductive system.



39. Which labelled structure represents the prostate?

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

40. Which of the following phrases may be tru about prenatal care?

I. Keeps the mother on a strict die and exercise programme
II. Monitors the development of th foetus
III. Helps the mother to properly car for the baby after birth

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

41. Which of the following birth control methods is an injectable contraceptive which prevents the release of the ovum for 8 to 12 weeks?

(A) Barrier
(B) Natural
(C) Surgical
(D) Hormonal

42. An example of discontinuous variation in humans is

(A) height
(B) foot length
(C) skin colour
(D) tongue rolling

43. Mitosis produces

(A) two identical daughter cells
(B) four identical daughter cells
(C) two non-identical daughter cells
(D) four non-identical daughter cells

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44. A cell is described as being diploid when

(A) the chromatids align at the equator of the cell
(B) it divides to give four different daughter cells
(C) it has the full chromosome number
(D) it undergoes meiosis

45. Which of the following is a DISADVANTAGE of genetic engineering in food production?

(A) Longer shelf life for fruits
(B) Production of super weeds
(C) Wheat that can fix atmospheric nitrogen
(D) Production of sugar cane in cold climates

46. Which of the following practices is MOST effective in limiting the spread of HIV?

(A) Abstaining from sexual activity
(B) Using a condom during intercourse
(C) Providing educational information about the disease in communities
(D) Encouraging persons to restrain from having multiple sexual partners

47. Which of the following is NOT a stage in the life cycle of a mosquito?

(A) Egg
(B) Pupa
(C) Adult
(D) Embryo

48. Persistent coughs, spitting blood, fever, night sweats and fatigue are signs and symptoms indicative of

(A) cholera
(B) influenza
(C) bronchitis
(D) tuberculosis

49. Which of the following is NOT a primary symptom of asthma?

(A) Wheezing
(B) Coughing
(C) Pneumonia
(D) Shortness of breath

50. Which of the following statements about personal hygiene are true?

I. It eliminates body odours.
II. It prevents infections
III. It promotes social acceptance.

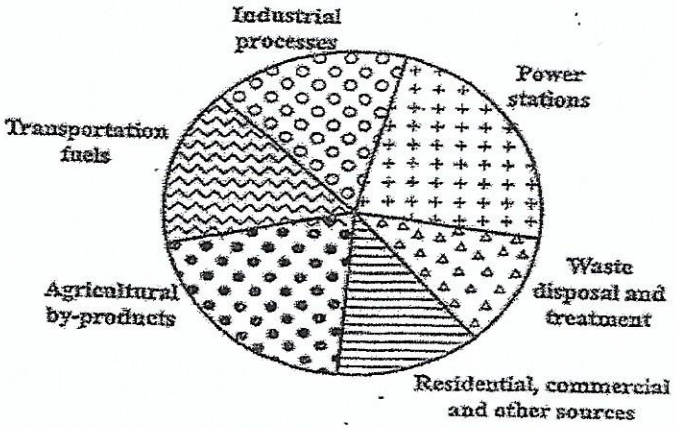
(A) I and II only
(B) I and III only
(C) II and III only
(D) I, II and III

51. A pit latrine can affect water quality by

(A) encouraging the breeding of mosquitoes
(B) encouraging rodents to frequent water sources
(C) allowing the seepage of raw sewage into the water table
(D) causing the discolouration of water in wells, streams and rivers

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Item 52 refers to the following pie chart which shows contributors to greenhouse gases.



52. Which sector contributes the MOST to greenhouse gases?

(A) Power stations
(B) Industrial processes
(C) Transportation fuels
(D) Agricultural by-products

53. Biodegradable substances are BEST described as those which can

(A) be broken down naturally
(B) be reused to produce new products
(C) exist in the environment for several years
(D) be considered a health hazard to living organisms

Item 54 refers to the following effects of drug abuse.

I. Headache
II. Depression
III. Upset stomach
IV. Frustration

54. Two psychological effects from the list above are

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

55. Which of the following substances will cause rainwater to become acidic?

(A) Hydrocarbons
(B) Solid particles
(C) Sulphur dioxide
(D) Carbon dioxide

56. Pollution is BEST described as the

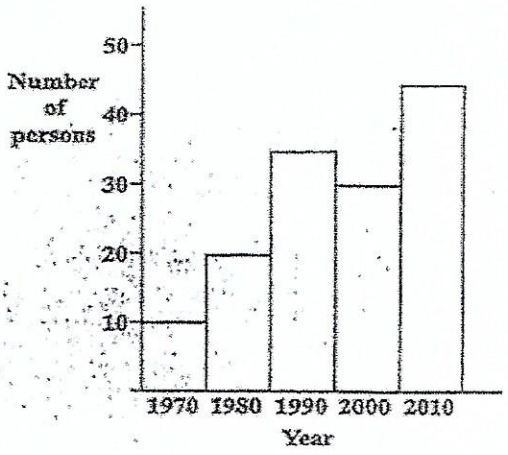
(A) disposal of domestic waste
(B) disposal of harmful substances in water
(C) contamination of land, water and air by harmful microorganisms
(D) contamination of land, water and air by harmful substances

57. Which of the following phrases would describe a disinfectant as opposed to an antiseptic?

I. Applied to inanimate objects to kill microbes
II. Applied to living tissue to kill microbes
III. Kills microbes without poisoning or destroying human tissue

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

Item 58 refers to the following graph which shows the incidence of respiratory diseases in a community close to a landfill.



58. The number of persons suffering from respiratory diseases between 1990 and 2010 is

(A) 35
(B) 45
(C) 100
(D) 110

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59. Vectors may be defined as

(A) organisms that cause the spoilage of foods
(B) organisms that cause living things to become ill
(C) the carriers of disease-causing organisms from source to hosts
(D) living organisms that transfer disease-causing organisms from one host to another

60. Contamination of water sources is detrimental to humans because of the spread of water-borne diseases such as

(A) rabies
(B) cholera
(C) influenza
(D) tuberculosis

END OF TEST

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