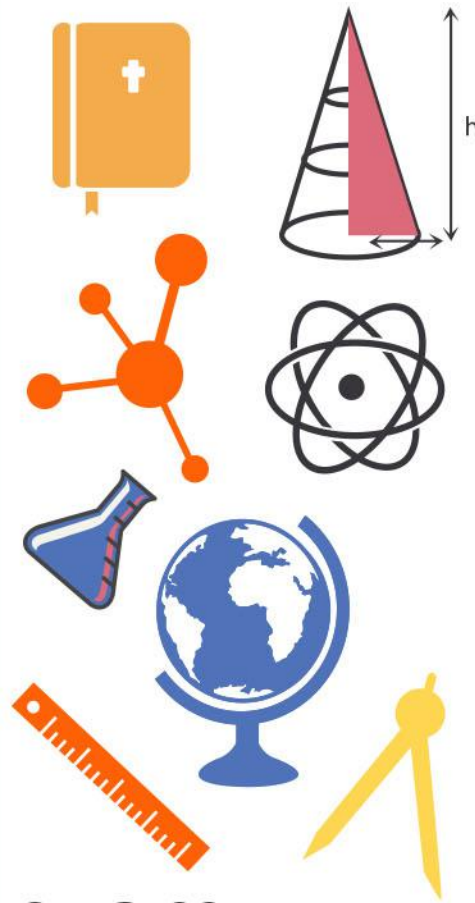
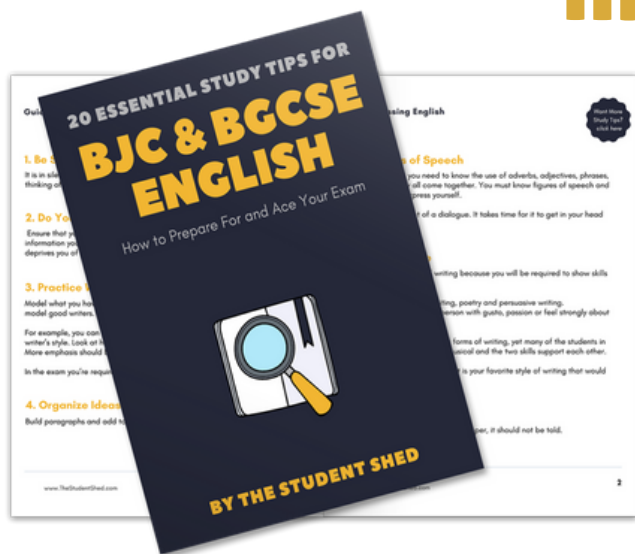


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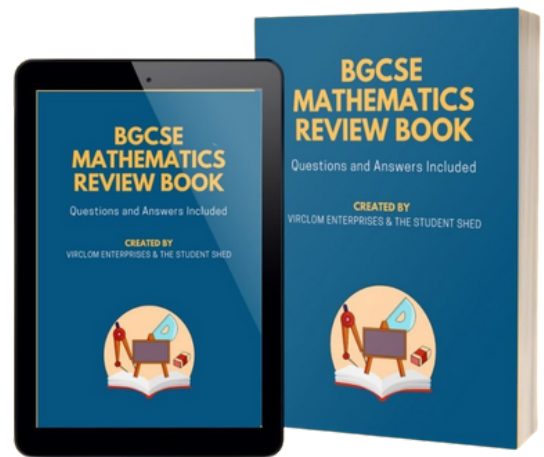


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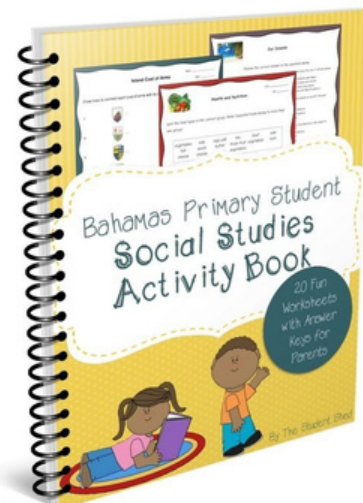
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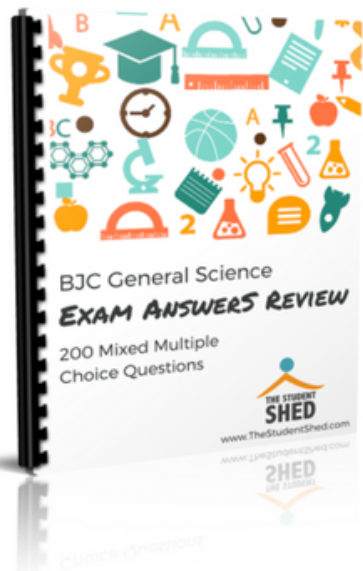
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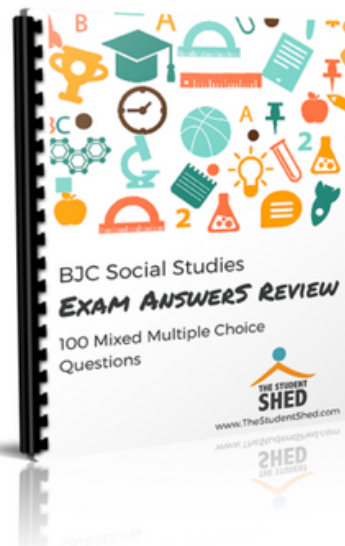
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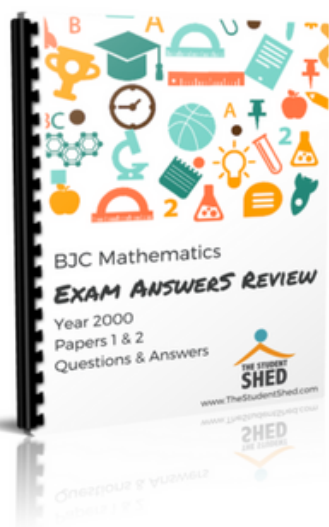
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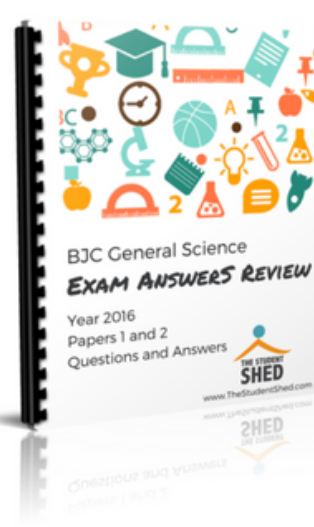
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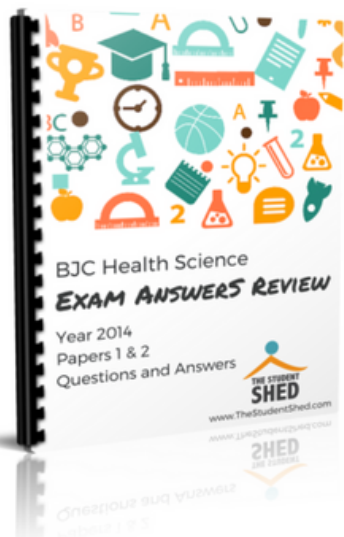
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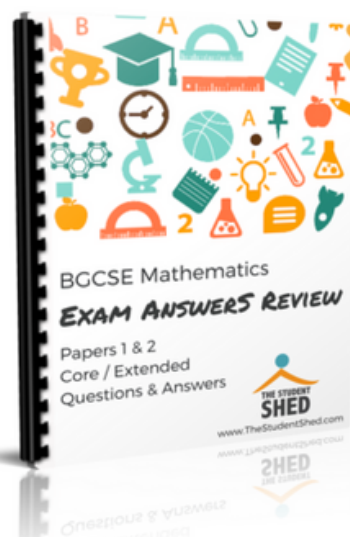
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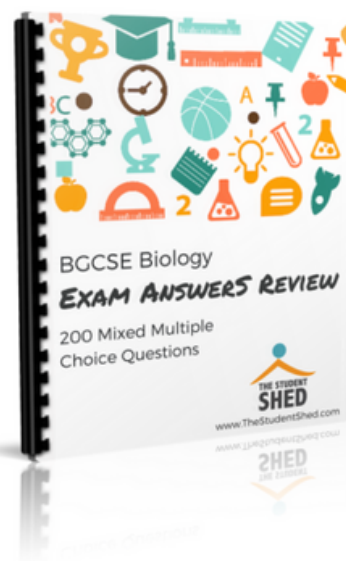
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BGCSE Biology
Year 2016
Papers 1, 2 & 3

3009/1

BGCSE

School Number	Candidate Number
<div></div>	<div></div>
Surname and Initials	

BIOLOGY

PAPER 1 3009/1

Friday **13 MAY 2016** 9:00 A.M.–10:15 A.M.

MINISTRY OF EDUCATION NATIONAL EXAMINATIONS

BAHAMAS GENERAL CERTIFICATE OF SECONDARY EDUCATION

INSTRUCTIONS AND INFORMATION FOR CANDIDATES

Do not open this booklet until you are told to do so.

Write your school number, candidate number, surname and initials in the spaces provided above.

There are fifty questions on this paper.

Attempt **ALL** questions.

For each question there are four possible answers labelled **A, B, C** and **D**.

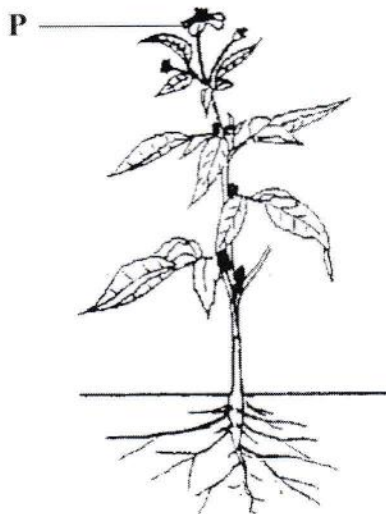
Choose the one you consider correct and circle the **LETTER** of your choice in the booklet.

Calculators are permitted, however **NO** graphing calculators are allowed.

1. What is the correct way to write the scientific name for the blue marlin fish?
 - A *makaira nigricans*
 - B *makaira Nigricans*
 - C *Makaira Nigricans*
 - D *Makaira nigricans*

2. What name is given to a group of organisms which can produce fertile offspring with each other?
 - A class
 - B family
 - C genus
 - D species

3. The diagram shows a flowering plant.



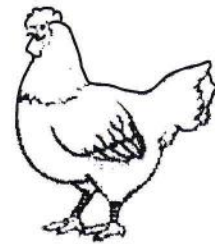
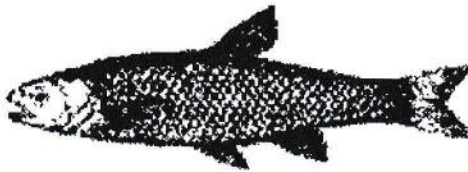
For which characteristic of organisms is organ **P** mainly responsible?

- A excretion
- B irritability
- C nutrition
- D reproduction

4. Which pair correctly matches the animal with the class it belongs to?

	animal	class
A	Dolphin	fish
B	Eel	reptile
C	white crown pigeon	bird
D	Shark	mammal

5. Which external feature is common to all animals below?



- A** They are all warm-blooded animals.
- B** They all have scales on their body.
- C** They all have beaks.
- D** They all have fins.
6. Which statement correctly matches the part of a flowering plant with its function?
- A** The leaf is used for making offspring.
- B** The stem is used for absorbing water and mineral salts.
- C** The root is used for making food.
- D** The axillary bud is used for lateral growth.

7. The table shows the numbers of four types of animal in four zones of a rocky shore. Which zone has the most molluscs?

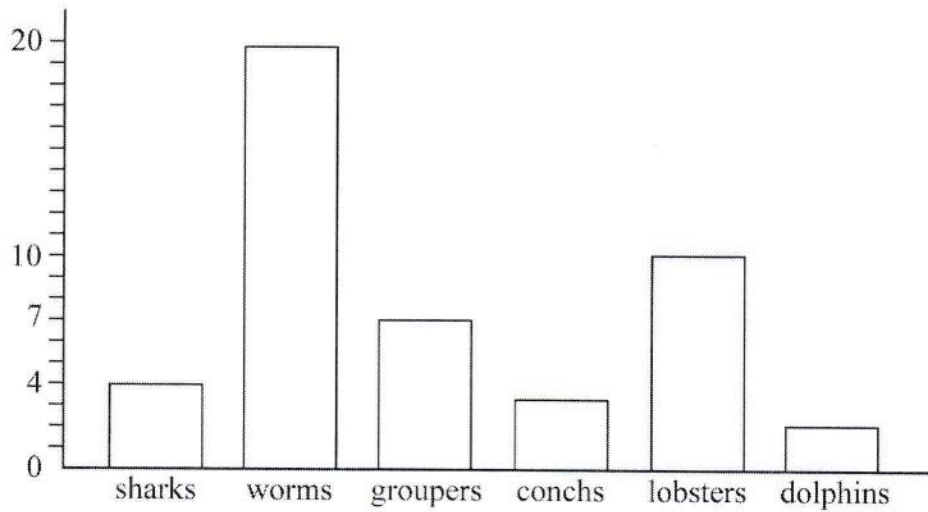
		number of organisms			
zone		barnacles	periwinkles	shrimps	whelks
A	permanently wet	20	15	25	2
B	intermittently wet	15	10	5	10
C	tidal pool	10	5	2	5
D	splash	5	1	0	1

8. The diagram below represents an ecosystem. What is the importance of this ecosystem to The Bahamas?



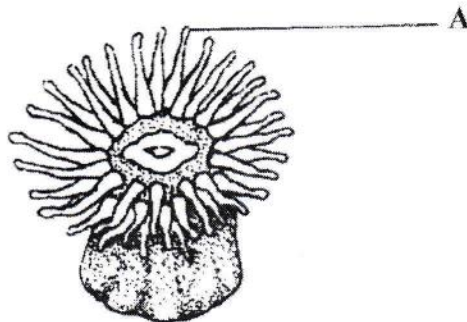
- A** It is a primary source of hardwood.
- B** It provides a habitat for organisms.
- C** It provides a tourist attraction which depletes the economy.
- D** It provides a good site for dumping solid wastes.

9. The bar graph shows the number of different types of organisms on a small coral reef.



How many arthropods are on the reef?

- A 4
 - B 7
 - C 10
 - D 20
10. The diagram shows an organism that is found in the coral reef ecosystem.

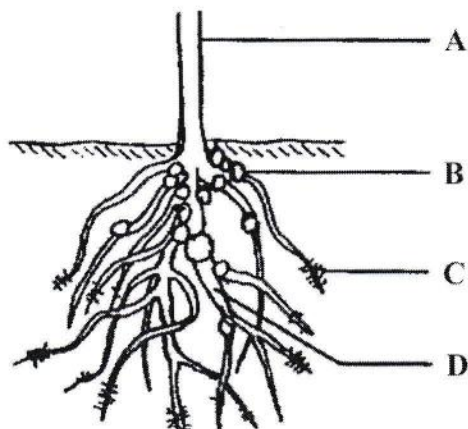


What is the function of the structure labelled A?

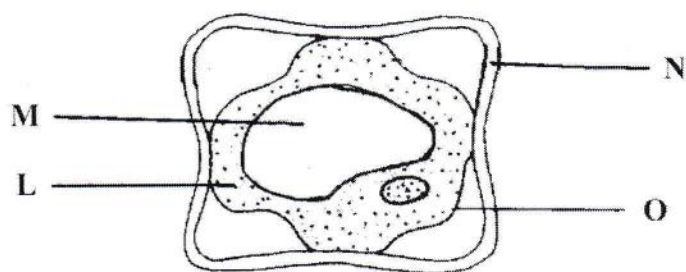
- A catching prey
- B detecting sound waves
- C detecting temperature change
- D swimming

11. The diagram shows the root system of the pigeon pea plant.

What structure contains microorganisms responsible for making nitrogen available to the plant?



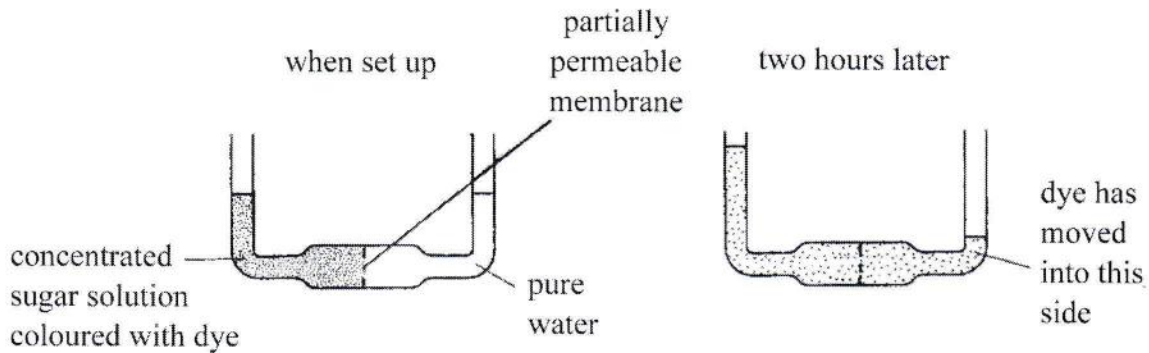
12. The diagram represents a plant cell placed in a concentrated solution.



What do the labels **L**, **M**, **N** and **O** represent?

	L	M	N	O
A	vacuole	cytoplasm	cell membrane	cell wall
B	cell wall	cell membrane	cytoplasm	vacuole
C	cell membrane	cell wall	vacuole	cytoplasm
D	cytoplasm	vacuole	cell wall	cell membrane

13. The diagrams show an experiment when set up and the same experiment two hours later.

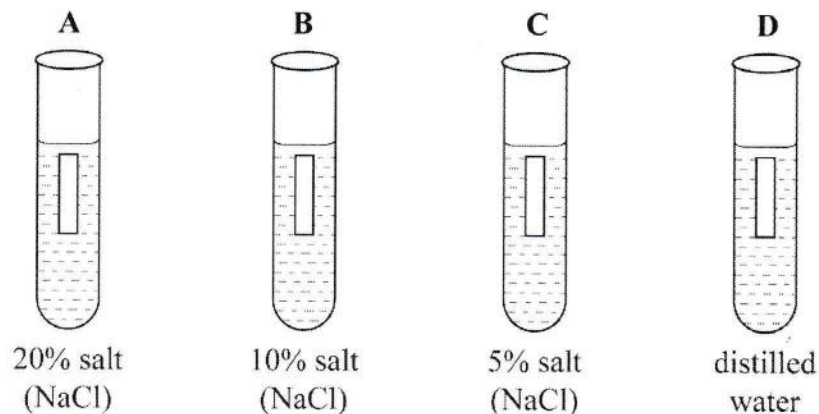


What explains the movement of water and dye?

	movement of water	movement of dye
A	diffusion	osmosis
B	osmosis	diffusion
C	osmosis	translocation
D	translocation	diffusion

14. The apparatus shows four potato cylinders of equal length in solutions of different salt concentrations.

Which potato cylinder will increase in length?

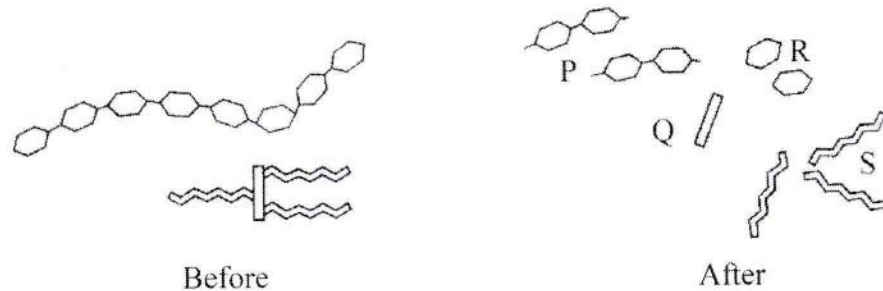


15. The table shows **THREE** food testing chemicals and the results of tests performed on coconut jelly.

food testing chemicals	biuret solution	ethanol	Benedict's solution
appearance	blue	cloudy	orange

Which nutrients are present in the jelly?

- A fats and protein
 - B fats and sugar
 - C proteins and sugar
 - D protein, sugar and fat
16. The diagram shows two food molecules before and after they have been digested by enzymes.



What identifies the products of the digestion of lipids?

- A P and R
- B P and S
- C Q and R
- D Q and S

17. 1 g of carbohydrate provides 16kJ of energy in the body.

1 g of protein provides 17kJ of energy in the body.

100 g of macaroni and cheese contains 50 g of carbohydrate and 10 g of protein.

How much energy is provided by 100 g of macaroni and cheese?

- A 33 kJ
- B 60 kJ
- C 800 kJ
- D 970 kJ

18. Which list correctly describes the functions of the kidneys, large intestine and stomach respectively?

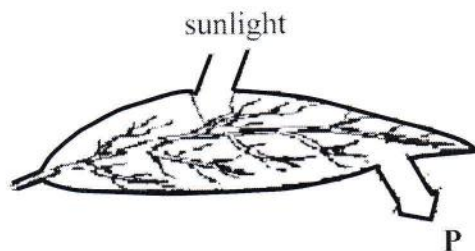
	kidneys	large intestine	stomach
A	filters the blood to remove wastes	reabsorbs water from undigested food into the bloodstream	breaks down food into smaller molecules
B	pumps blood to the heart	controls other organs	breaks down carbohydrates
C	stores faeces	filters the blood to help to remove wastes	controls other organs
D	stores waste fluid called urine	breaks down food into smaller molecules	contains the developing foetus

19. In photosynthesis, light energy is transferred to a different form.

What is this form of energy?

- A chemical
- B heat
- C mechanical
- D sound

20. The diagram shows a leaf in sunlight.

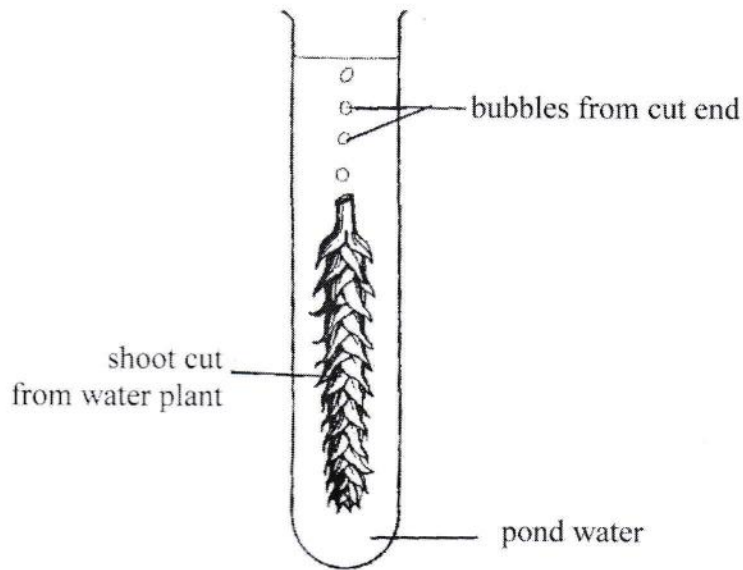


What gas is represented by arrow P?

- A carbon dioxide
 - B nitrogen
 - C oxygen
 - D carbon monoxide
21. Which structure in the leaf prevents excessive water loss due to evaporation?
- A epidermis
 - B palisade layer
 - C stomata
 - D waxy cuticle
22. Which correctly matches the structure with its function?

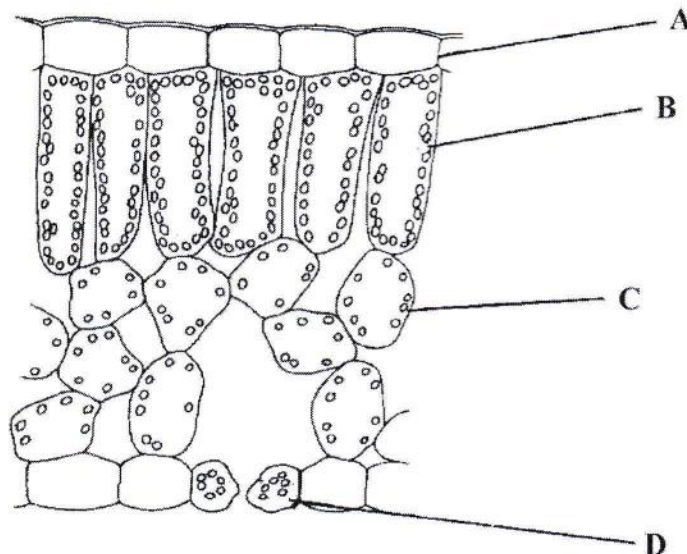
	structure	function
A	epidermis	transports water vapour
B	chlorophyll	reflects water
C	guard cell	reflects light
D	phloem	transports sugars

23. In the experiment shown, a stream of bubbles is given off from a water plant when it is placed in the light.



Which gas is forming in the test tube shown above?

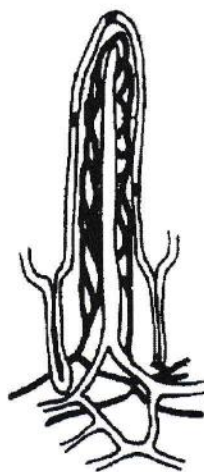
- A carbon dioxide
 - B hydrogen
 - C oxygen
 - D nitrogen
24. The diagram shows the internal structure of the leaf. In which type of cell does most photosynthesis take place?



25. Which row correctly shows the events occurring during photosynthesis?

	oxygen	carbon dioxide	water vapour
A	enters through stomata	exits through stomata	enters through stomata
B	exits through stomata	enters through stomata	exits through stomata
C	exits through stomata	exits through stomata	enters through stomata
D	enters through stomata	exits through stomata	exits through stomata

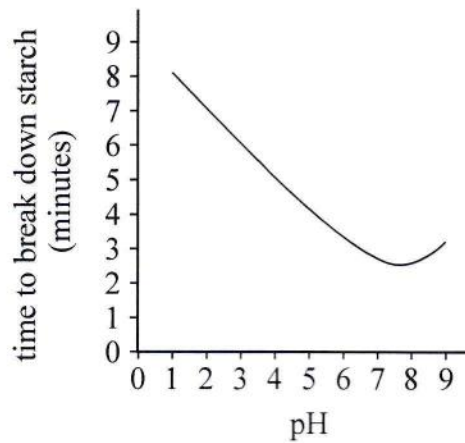
26. The diagram represents a structure found in the alimentary canal of a human.



What important process occurs in this structure?

- A** absorption
- B** assimilation
- C** egestion
- D** ingestion

27. The graph below shows the effect of pH on the time taken for carbohydrase to break down starch.

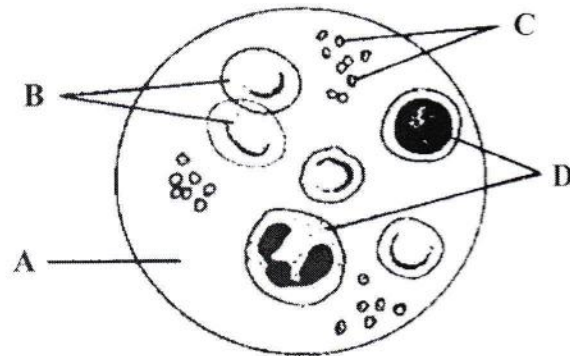


What conclusion can be made about the enzyme in the graph?

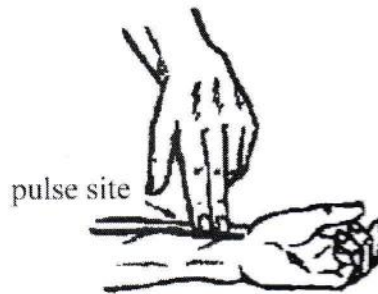
- A The enzyme works best at pH 1.
- B The enzyme works best in acidic conditions.
- C The enzyme works best at pH 9.
- D The enzyme works best between pH 7 and pH 8.
28. Why does chewing food speed up digestion?
- A Bacteria in the food are killed.
- B Food is mixed with protease.
- C The surface area of the food is increased.
- D The taste of the food is improved.
29. What would be the expected effect on the heartbeat rate and breathing rate of a person running a mile?

	rate of heartbeat	rate of breathing
A	decreases	decreases
B	decreases	increases
C	increases	decreases
D	increases	increases

30. The diagram below shows the components of blood. Which component is responsible for carrying oxygen?



31. The picture shows the measurement of the radial pulse in the lower arm.



If the measurement taken is 22 beats in 15 seconds, what is the number of beats in one minute?

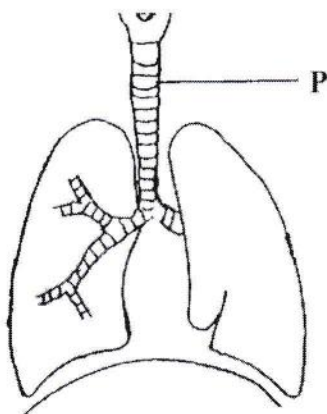
- A 44
- B 66
- C 76
- D 88
32. Which is the predominant driving force that moves blood back to the heart?
- A active transport
- B beating of the heart
- C closing of the valves
- D skeletal muscle contractions

33. What structures do hormones pass through from the endocrine glands to regions where they have their effect?

- A blood vessels
- B nerve fibres
- C tubular ducts
- D vascular bundles

34. The diagram illustrates structures in the human respiratory system.

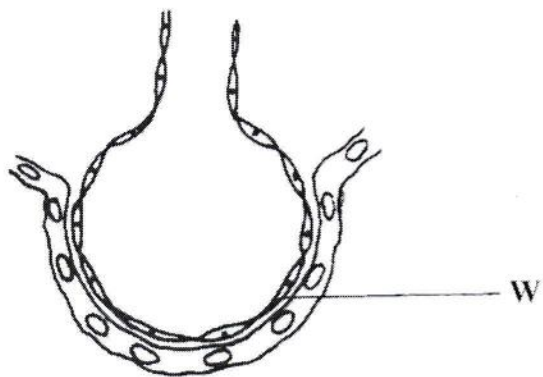
What is the function of the incomplete rings of cartilage in tube P?



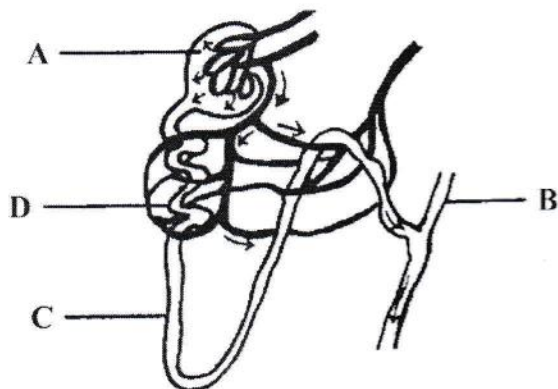
- A to filter dust and bacteria out of inhaled air
 - B to prevent the tube from collapsing
 - C to protect the blood vessels supplying the lungs
 - D to force air out of the tube
35. When the human body is engaged in very strenuous physical exercise, under anaerobic conditions, which substance is produced?
- A ethanol
 - B glucose
 - C glycogen
 - D lactic acid

- 36 The diagram represents an alveolus and its blood supply in the lungs of a mammal.

What is part **W**?



- A a capillary
 - B epithelium of alveolus
 - C pleural membrane
 - D a ring of cartilage
37. The diagram shows a nephron of a kidney. Where does filtration occur in this structure?



38. Which hormone increases the rate at which glucose is converted to glycogen in the liver?

- A adrenaline
- B insulin
- C oestrogen
- D testosterone

39. The diagram shows a neurone.



Which structures could be found at X and Y?

	X	Y
A	brain	intestine
B	brain	leg
C	eye	hand
D	skin	spinal cord

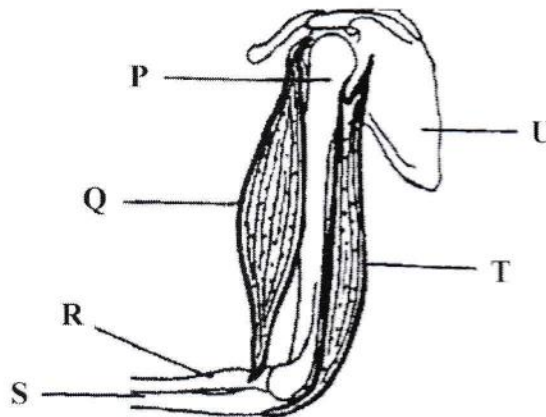
40. Which type of cells do **all** sense organs contain?

- A ciliated
- B effector
- C mesophyll
- D receptor

41. A driver damages part of his brain in a crash. He found out that he was unable to stand upright and balance himself properly afterwards. Which part of his brain was damaged?

A brain stem
B cerebellum
C cerebrum
D medulla oblongata

42. The diagram shows some structures in the arm and shoulder.



What correctly describes how the elbow is flexed?

A contraction of Q attached to P and R and relaxation of T
B contraction of Q attached to R and S and relaxation of T
C contraction of T attached to P and S and relaxation of Q
D contraction of T attached to U and S and relaxation of Q

43. Which drug can produce the following symptoms?

Symptoms: anxiety, high energy levels, elevated mood, dilated pupils

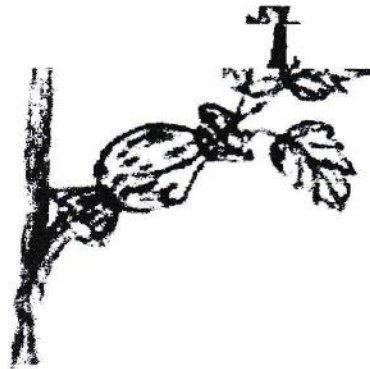
- A alcohol
- B cocaine
- C marijuana
- D nicotine

44. A tree with genes for tall growth was planted in a pot and not watered. The tree grew only to a medium height.

What affected the height of the tree?

- A interaction between the genotype and phenotype
- B interaction between the genotype and environment
- C interaction between the phenotype and the environment
- D interaction between the phenotype and process of meiosis

45. The picture below is an example of asexual reproduction.



What type of reproduction is shown in the picture?

- A budding
 - B germination
 - C marcotting
 - D pollination
46. What is the correct path taken by a male gamete in a pollen grain that results in fertilization?
- A ovary → ovule → stigma → style
 - B ovule → stigma → style → ovary
 - C stigma → style → ovary → ovule
 - D style → ovary → ovule → stigma
47. Which of the following describes the passage of sperms from the testes out of the penis?
- 1 epididymis 2 seminiferous tubules 3 urethra 4 vas deferens
- A 1, 2, 3, 4
 - B 2, 1, 4, 3
 - C 3, 2, 1, 4
 - D 4, 3, 2, 1

48. Which symptom is true of syphilis?
- A burning sensation when urinating
 - B inflammation of urethra
 - C small painless round sore
 - D discharge from the penis
49. Which of the following is likely to promote the germination of seeds?
- A absence of water
 - B cold temperature
 - C sterile environment
 - D warm temperature
50. In a monohybrid cross between two heterozygous tall individuals, what percentage of the offspring is likely to possess at least one recessive allele?
- A 25%
 - B 50%
 - C 75%
 - D 100%

3009/2

BGCSE

School Number	Candidate Number								
<table><tr><td></td><td></td><td></td><td></td></tr></table>					<table><tr><td></td><td></td><td></td><td></td></tr></table>				
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BIOLOGY

PAPER 2 3009/2

Friday **13 MAY 2016** 10:30 A.M.–12 NOON

MINISTRY OF EDUCATION NATIONAL EXAMINATIONS

BAHAMAS GENERAL CERTIFICATE OF SECONDARY EDUCATION

INSTRUCTIONS AND INFORMATION FOR CANDIDATES

Do not open this booklet until you are told to do so.

Write your school number, candidate number, surname and initials in the spaces provided above.

Answer **ALL** questions on this paper.

Read each question carefully and make sure you know what you have been asked to do before starting your answer. Confine your answer to the lines following each question.

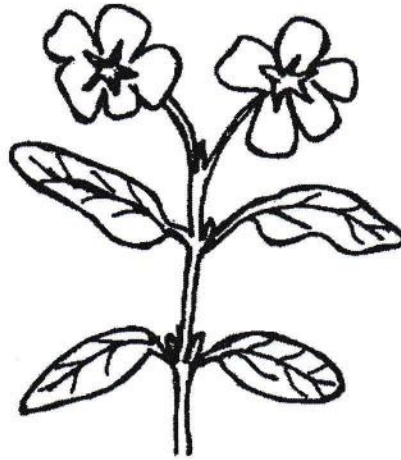
The mark for each part-question is given in brackets [].

Calculators are permitted however, **NO** graphing calculators are allowed.

For Examiner's Use	
1	
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TOTAL	

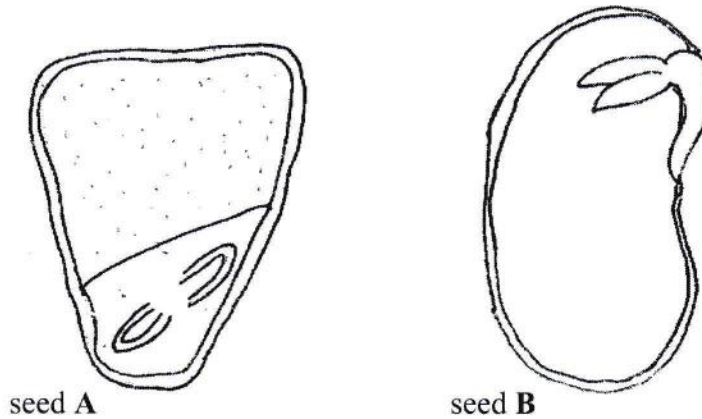
This question paper consists of 17 printed pages and 3 blank pages.

1. The diagram below represents the shoot of a flowering plant, sailor's cap.



- (a) (i) Name the class of flowering plants to which this plant belongs.
- _____ [1]
- (ii) Give **TWO** reasons for your answer in (a)(i).
- 1 _____
- 2 _____ [2]
- (iii) Complete the diagram above by drawing and naming the type of root system found in this plant. [2]

- (b) The diagrams show longitudinal sections of two different seeds.



- (i) Draw a label line **X** to the cotyledon in one of the seeds. [1]

- (ii) How many cotyledons are typically found in seed **A** and seed **B**?

Seed **A** _____ Seed **B** _____ [2]

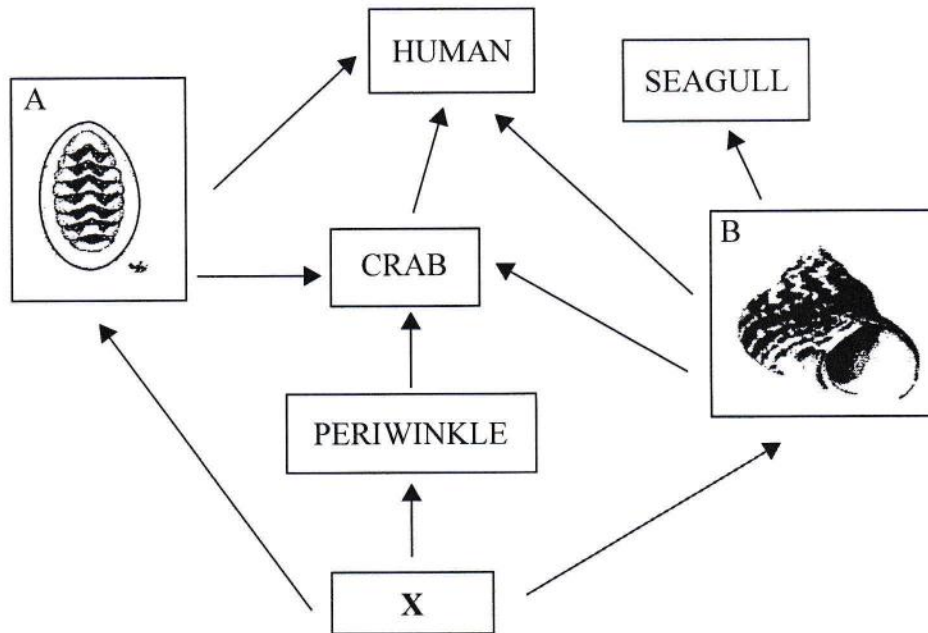
- (iii) State the function of the cotyledon in seed **A** and in seed **B**.

Seed **A** _____

Seed **B** _____ [2]

TOTAL MARKS [10]

2. The diagram represents a food web found in a rocky shore ecosystem.



- (a) Identify organism X.

_____ [1]

- (b) Describe what would happen to the food web if organism X disappeared completely.

 _____ [2]

- (c) State the names of organisms A and B.

Organism A _____ Organism B _____ [2]

- (d) (i) Suggest what would happen to the population of organism A, if this organism was over-harvested by humans.

_____ [1]

- (ii) State **TWO** other factors that could affect population A.

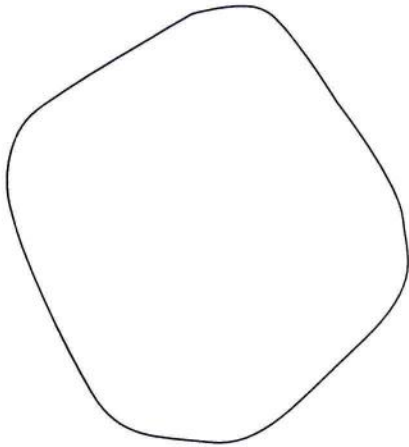
 _____ [2]

- (e) Explain how organism **B** is adapted to life on the rocky shore.

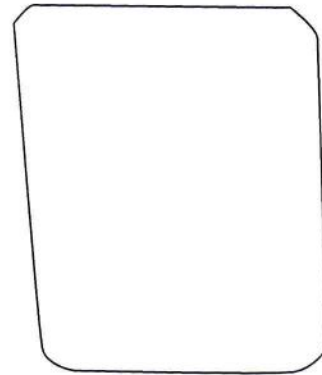
[2]

TOTAL MARKS [10]

3. (a) The diagrams show the outermost structure of a typical animal cell and a typical plant cell.



animal cell



plant cell

On the appropriate diagram/diagrams, draw and label the following cell organelles based on the descriptions given:

- (i) structures which release energy;
- (ii) structures which control all cell activities;
- (iii) thread-like structures that contain genetic material;
- (iv) structures which contain a green pigment. [4]

- (b) Explain the difference between a tissue and an organ.

[2]

(c) Name the tissue which carries out each of the following functions:

(i) transports water in a plant _____

(ii) brings about movement in animals _____

(iii) conducts electrical signals from one part of the body to another in animals.

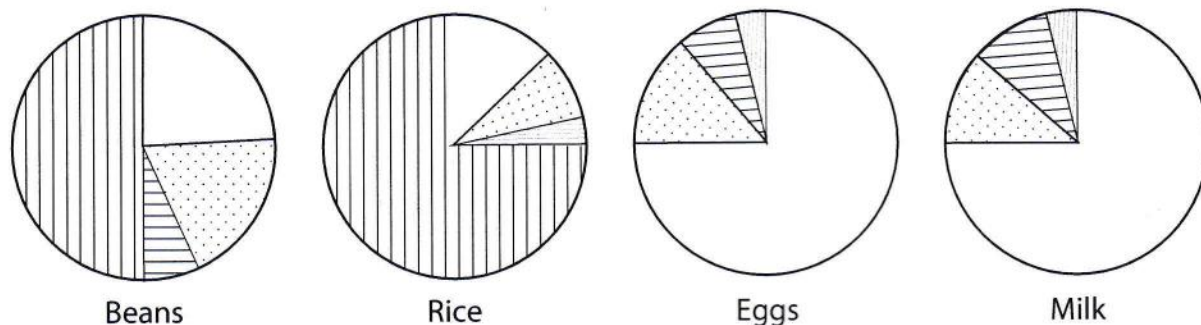
_____ [3]

(d) State **ONE** difference between a plant cell and an animal cell **NOT** mentioned in the diagrams in question (a) drawn on page 6.

_____ [1]

TOTAL MARKS [10]

4. The pie charts show the proportions of four nutrients – water, carbohydrates, protein and fat in some common foods.



Key



- (a) (i) Which food contains the greatest proportion of water?
_____ [1]
- (ii) List **TWO** uses of water in the human body.
1 _____
2 _____ [2]
- (b) (i) Which of these foods would be best for correcting the deficiency disease kwashiorkor?
_____ [1]
- (ii) Which **TWO** of the nutrients, shown in the pie chart, supply the most energy?
_____ [2]
- (iii) Name **ONE** chemical element that is common to carbohydrates, fats and proteins.
_____ [1]

- (c) The table shows the energy content and nutrient content of one serving of three cereals.

nutrient	cereal A	cereal B	cereal C
energy/kJ	110	60	85
protein/g	2	2	2
carbohydrate/g	28	15	22
fat/g	3	0	2
sodium/mg	275	300	150

- (i) If you were trying to reduce the amount of salt intake, which cereal would you choose to eat?

_____ [1]

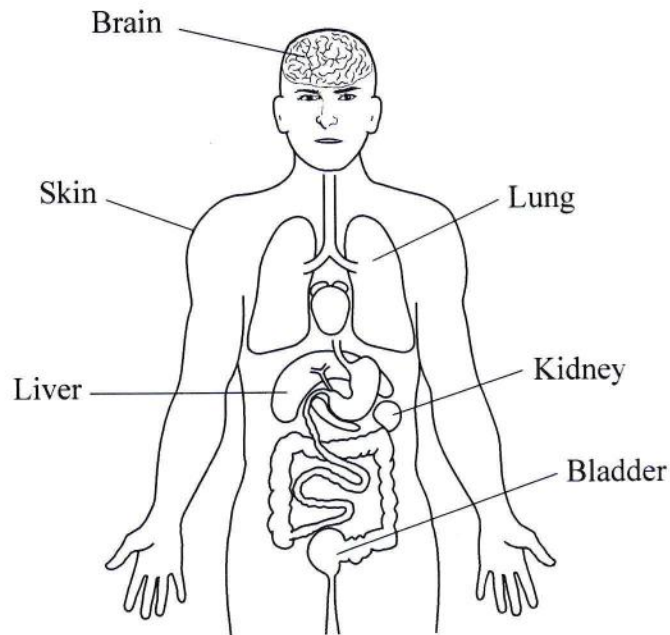
- (ii) John ate $1\frac{1}{2}$ servings of cereal A. Philip ate 2 servings of cereal C.

Calculate the difference in the quantity of energy consumed by John and Philip.

_____ kJ [2]

TOTAL MARKS [10]

5. The diagram shows some of the organs in the body which help to maintain homeostasis.



- (a) Name the organ on the diagram that:

(i) produces sweat _____

(ii) produces urea _____

(iii) produces urine _____

(iv) stores urine _____

[4]

- (b) Explain why we should drink more water on a hot day than on a cold day.

_____ [1]

- (c) Explain why the human body temperature must be kept as close to normal as possible.

_____ [2]

- (d) (i) Urea is a type of metabolic waste.

Explain what is meant by the term metabolic waste.

_____ [1]

- (ii) Name **TWO OTHER** metabolic wastes, produced by humans.

For each one that you name, state the organ shown on the diagram that produces this metabolic waste.

metabolic waste produced _____

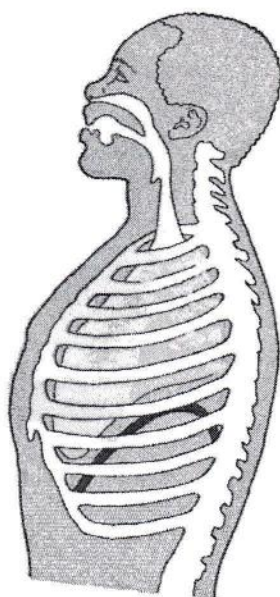
name of organ that produces it _____

metabolic waste produced _____

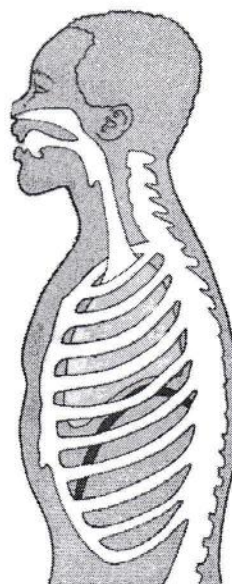
name of organ that produces it _____ [2]

TOTAL MARKS [10]

6. The diagram shows the difference in shape and position of the diaphragm and rib cage during breathing.



Inhalation



Exhalation

- (a) On the diagram showing inhalation, clearly label the following structures:

epiglottis lung diaphragm rib cage [2]

- (b) Describe what happens to these structures during exhalation.

(i) rib cage _____

(ii) diaphragm _____ [2]

- (c) (i) Complete the blank spaces in the table below to show the correct percentage of gases in inspired and expired air. [2]

	oxygen (%)	nitrogen (%)	carbon dioxide (%)	water vapour (%)
Inspired air	21	78	varies
Expired air	78	4	saturated

- (ii) Name the gas that has the same percentage in inspired air and expired air.

_____ [1]

- (iii) Explain why the percentage of this gas is the same in inspired and expired air.

_____ [1]

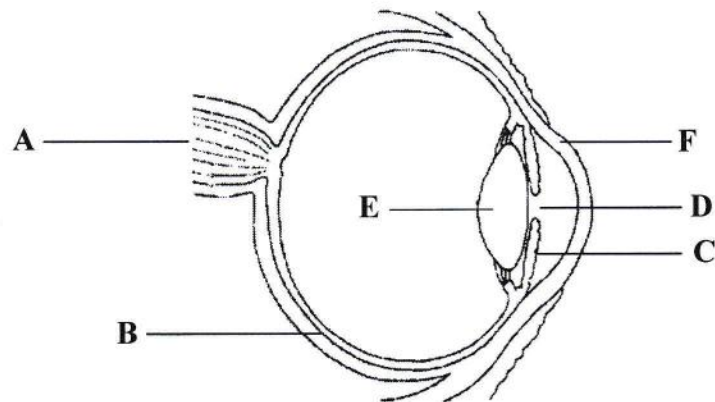
- (d) If a person has stopped breathing, it may be possible to revive them by breathing exhaled air into their lungs.

Explain why exhaled air is able to help keep a person alive.

_____ [2]

TOTAL MARKS [10]

7. The diagram represents a cross-section of the human eye.



- (a) Name the parts labelled **A**, **D**, **E** and **F**.

A _____

D _____

E _____

F _____

[4]

- (b) Explain the functions of parts **B** and **C**.

B _____

_____ [2]

C _____

_____ [2]

- (c) Name the structure in the human ear which performs a function similar to that of the part labelled **A**.

_____ [1]

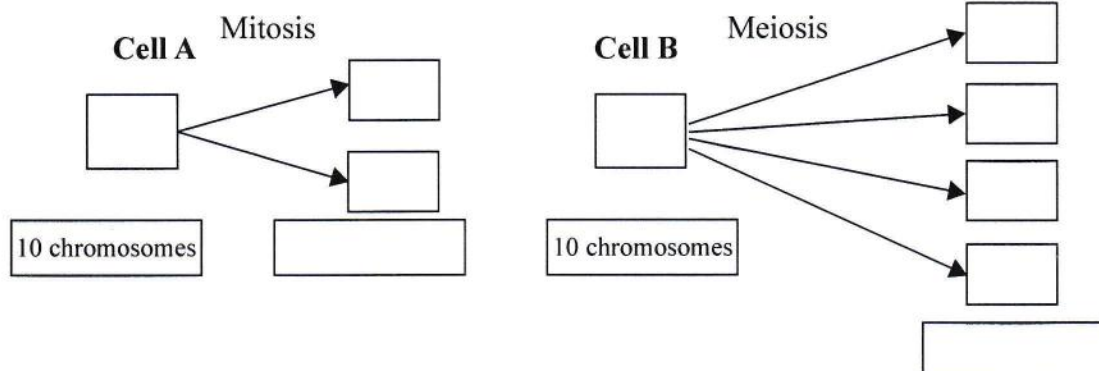
(d) State **TWO** functions that the ear performs.

1 _____

2 _____ [1]

TOTAL MARKS [10]

8. The diagrams below show two different types of cell division.



- (a) State the number of chromosomes in the daughter cells of:
- (i) Cell A _____
- (ii) Cell B _____ [2]
- (b) What term is used to describe the daughter cells produced by cell A and cell B?
- (i) Cell A _____
- (ii) Cell B _____ [2]
- (c) (i) Name a tissue in the body where mitosis takes place.
- _____
- (ii) Name a tissue in the body where meiosis takes place.
- _____ [2]
- (d) Name **TWO** processes in living things which occur by mitosis.
- (i) _____
- (ii) _____ [2]

(e) State **TWO** importance of meiosis in living organisms.

(i) _____

(ii) _____

_____ [2]

TOTAL MARKS [10]

School Number	Candidate Number
Surname and Initials	

BIOLOGY

PAPER 3 3009/3

Thursday **19 MAY 2016** 12:30 P.M.–2:00 P.M.

MINISTRY OF EDUCATION NATIONAL EXAMINATIONS

BAHAMAS GENERAL CERTIFICATE OF SECONDARY EDUCATION

INSTRUCTIONS AND INFORMATION FOR CANDIDATES

Do not open this booklet until you are told to do so.

Write your school number, candidate number, surname and initials in the spaces provided above.

Answer **ALL** questions in **Section A** in the space provided.

Answer **TWO** out of **THREE** questions in **Section B** in the spaces in the question booklet. Candidates are advised to spend no more than 35 minutes on **Section A**.

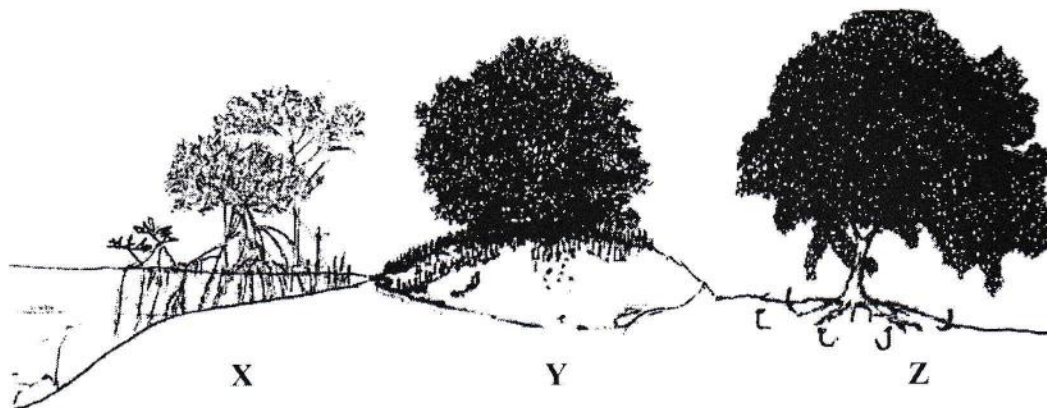
The mark for each part question is given in brackets [].

Calculators are permitted however, **NO** graphing calculators are allowed.

For Examiner's Use	
1	
2	
3	
4	
5	
6	
7	
TOTAL	

SECTION A

1. The diagram represents a profile of a mangrove swamp ecosystem.



- (a) Name the type of mangrove plants in the diagram shown at X, Y and Z.

X _____

Y _____

Z _____ [3]

- (b) (i) Draw a typical leaf found on the mangrove plant labelled Z. [1]

- (ii) Explain **TWO** characteristic features of the leaf drawn in (b)(i).

_____ [2]

- (c) Compare the structure and function of the roots of mangroves **X** and **Y**.

Mangrove **X** Structure _____

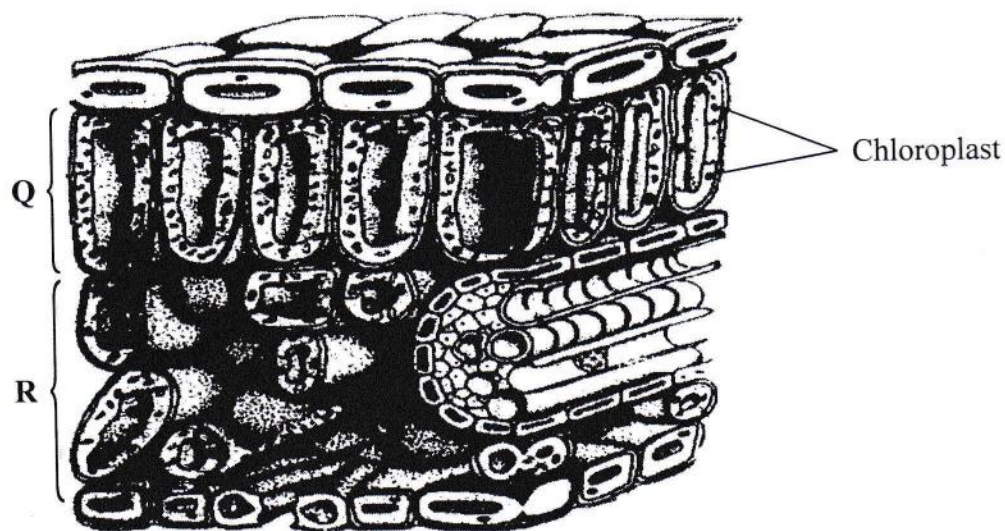
Function _____ [2]

Mangrove **Y** Structure _____

Function _____ [2]

TOTAL MARKS [10]

2. The diagram shows a section through a leaf of a green plant.



- (a) Name the parts labelled Q and R.

Q _____

R _____ [2]

- (b) Draw a line to the structure which allows gases to enter or exit the leaf and label it X. [1]

- (c) Photosynthesis is a process that takes place in the leaf.

Write the balanced chemical equation for this process.

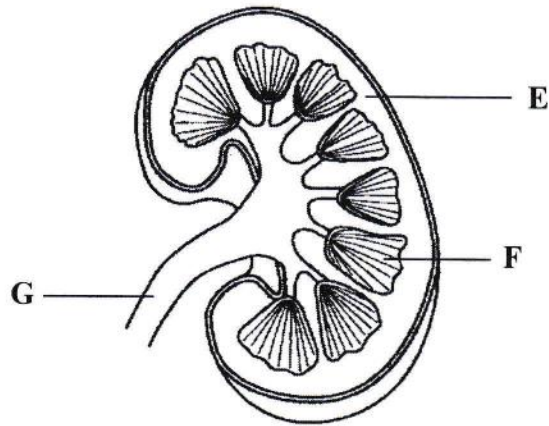
_____ [3]

- (d) Name the type of vessel through which water moves upwards to the leaf, and explain the mechanism that causes the water to move upwards.

_____ [4]

TOTAL MARKS [10]

3. The diagram shows a section through a kidney.



- (a) Name the structures labelled E, F and G.

E _____

F _____

G _____ [3]

- (b) Ultrafiltration occurs in the glomerulus. Explain the process of ultrafiltration.

_____ [3]

- (c) Kidney transplants are the most common organ transplants.

Describe **THREE** advantages of a kidney transplant compared with dialysis.

[3]

- (d) Before a kidney is transplanted, it is important to match the tissue type of the donor with the tissue type of the recipient.

State why this is necessary.

[1]

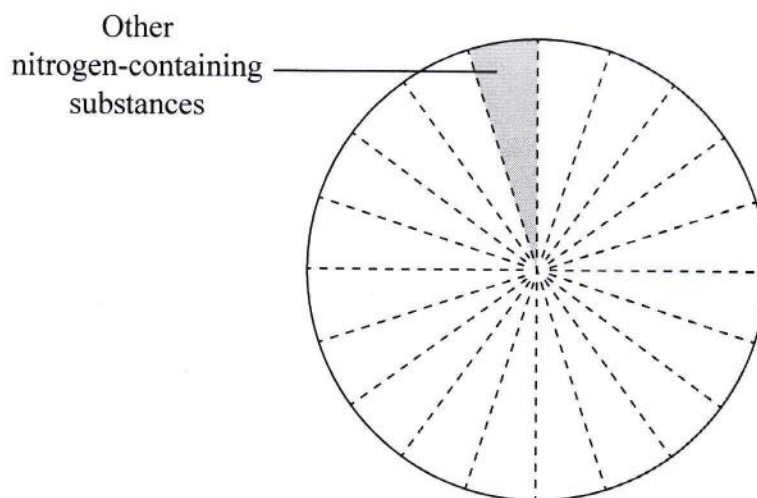
TOTAL MARKS [10]

4. The table shows the compounds and ions dissolved in a student's urine.

Compound or ion	Percentage of total
urea	60
negative ions	25
positive ions	10
other nitrogen-containing substances	5

- (a) Complete the pie chart for the compounds and ions dissolved in urine.
(One section has been done for you. Do not forget to label the chart.)

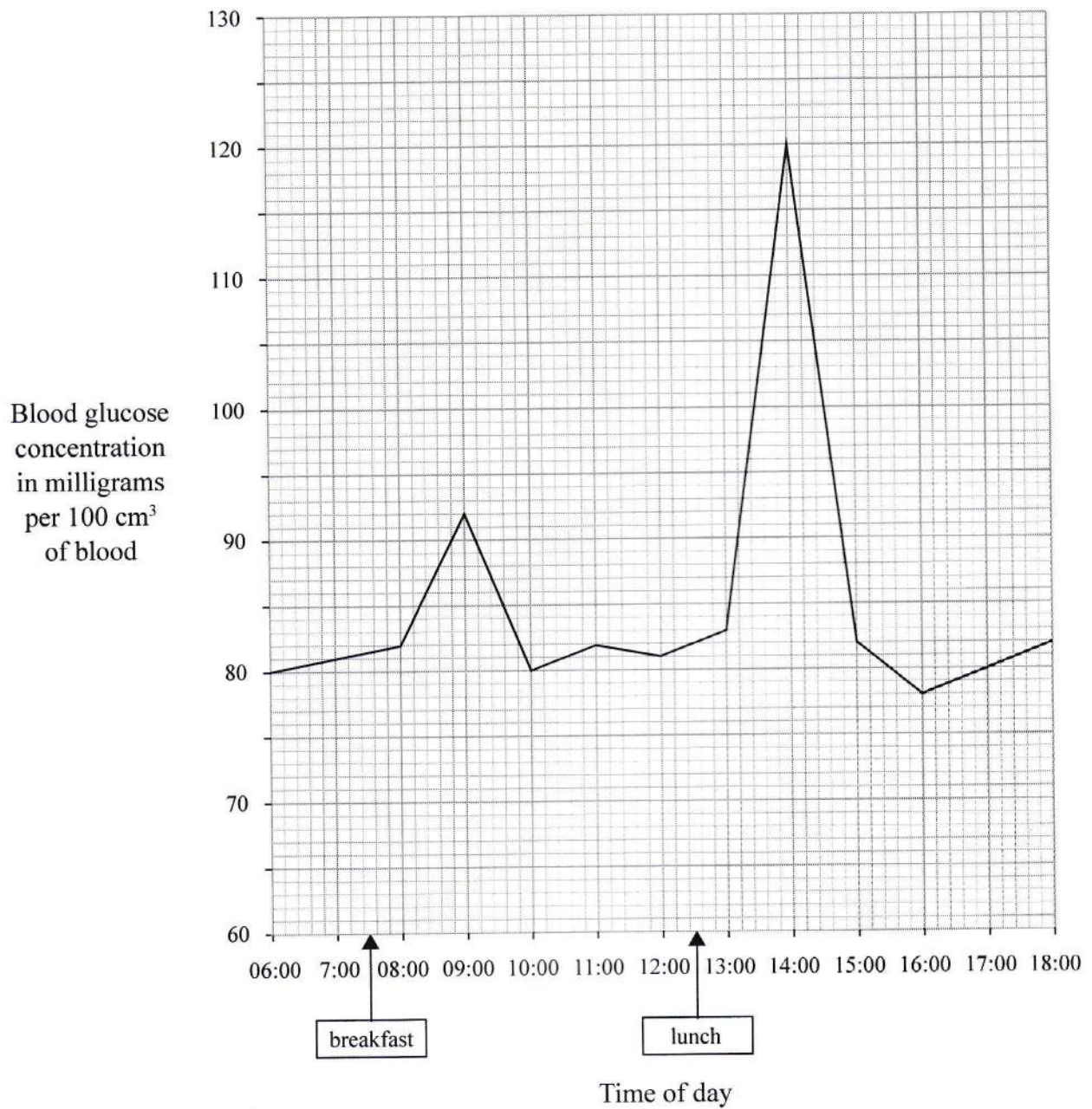
[3]



- (b) Explain why proteins are not normally found in urine.

[1]

- (c) The graph shows the changes in blood glucose concentration in a healthy person over a 12 hour period.



- (i) Calculate the difference between the minimum and maximum glucose concentration over a 12-hour period.

_____ [1]

- (ii) Calculate the length of time for which the blood glucose concentration was at or above 80 mg per 100 cm³.

_____ [1]

- (iii) Name the hormone responsible for the fall in blood glucose concentration between 14:00 and 15:00.

_____ [1]

- (iv) Name the organs which work together to bring about this decrease.

_____ [2]

- (v) Name the disease that prevents a person from regulating his/her blood glucose level.

_____ [1]

TOTAL MARKS [10]

SECTION B

Answer any **TWO** questions

5. (a) Define the term biomass. [2]
- (b) Sketch a pyramid of energy and a pyramid of numbers based on the organisms below. [4]
- 370 termites 1 Bahamian Pine tree 10 woodpeckers
- (c) Explain what happens to the energy in a food chain containing three trophic levels. [6]
- (d) Discuss the efficiency of supplying green plants as food directly to humans, or as food to animals that are then eaten by humans. [4]
- (e) Explain the term bioaccumulation as it relates to DDT being sprayed on weeds in a pond. [4]

TOTAL MARKS [20]

6. (a) Explain the structural adaptations shown to facilitate pollination of the Bauhinia flowers by insects. [7]
- (b) In sexual reproduction, many more gametes are produced than eventually contribute to the formation of an offspring.
- Explain this statement, with reference to sexual reproduction in humans. [10]
- (c) Discuss **THREE** advantages of asexual reproduction. [3]

TOTAL MARKS [20]

7. Experiments on 1% starch were set up under different conditions.

Test tube L: Starch, amylase, 37 °C

Test tube M: Starch, boiled amylase, 37 °C

Test tube N: Starch, hydrochloric acid, amylase, 37 °C

After 15 minutes each sample was tested with iodine solution and Benedict's solution.

- | | | |
|-----|--|-----|
| (a) | Create a table to show the expected results in each test tube for both iodine solution and Benedicts Solution. | [8] |
| (b) | Name the process which occurred in Test tube L but not in Test tubes M and N . | [1] |
| (c) | What role do enzymes play during digestion. | [2] |
| (d) | (i) Describe how you would test a solution for the presence of proteins. | [3] |
| | (ii) Explain why proteins are important in the human diet. | [2] |
| (e) | Describe the function of hydrochloric acid and pepsin in the stomach. | [4] |

TOTAL MARKS [20]