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JURONGVILLE SECONDARY SCHOOL
MID-YEAR EXAMINATION 2019
Secondary 2 Normal (Technical)



STUDENT
NAME

CLASS

INDEX
NUMBER

SCIENCE SYLLABUS T

14 MAY 2019
1 hour 30 min

Additional Materials: Multiple Choice Answer Sheet

READ THESE INSTRUCTIONS FIRST

Write your name, index number and class in the spaces at the top of this page.
Write in dark blue or black pen on both sides of the paper.
You may use a soft pencil for any diagrams, graphs, tables or rough working.
Do not use staples, paper clips, highlighters, glue, correction tape or correction fluid.
The use of an approved scientific calculator is expected, where appropriate.

There are two sections in this paper.

Section A:

There are **twenty** questions in this section. Answer **ALL** questions. For each question, there are four possible answers, **A, B, C or D**.
Choose the **one** you consider correct and record your choice in **soft pencil** on the multiple choice answer sheet.
Each correct answer will score one mark. Marks will not be deducted for a wrong answer.
Any rough working should be done in this booklet.

Section B:

Answer **ALL** the questions. Write your answers in the spaces provided on the question paper.
The number of marks is given in brackets [] at the end of each question or part question

DO NOT OPEN THE BOOKLET UNTIL YOU ARE TOLD TO DO SO

Parent's Signature

For Examiner's Use

Section A	20
Section B	40
Total	60

Setter: Mr Lam Seng Tat

This document consists of 12 printed pages.

[Turn over

Section A: Multiple Choice Questions (20 marks)

Answer **all** questions. For each question, there are four possible answers **A**, **B**, **C** and **D**. Choose the **one** you consider the best and shade your choice on the multiple-choice answer sheet.

- 1 Which of the following shows all three states of water?

- A ice cube, steam and water vapour
- B boiled water, cold water and steam
- C boiled water, steam and water vapour
- D cold water, ice cube and water vapour

- 2 Which of the following is correct about a gas?

	can be compressed	fixed shape
A	No	No
B	No	Yes
C	Yes	No
D	Yes	Yes

- 3 In which of the following processes would heat be absorbed by the substance?

- A boiling and melting
- B boiling and freezing
- C condensing and melting
- D condensing and freezing

- 4 What is density?

- A Density is the ability to withstand scratches.
- B Density is the mass per unit volume of a substance.
- C Density is the ability to allow electricity to pass through.
- D Density is the temperature at which liquid changes to gas.

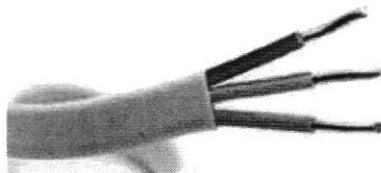
- 5 Which of the following correctly arranges the materials from not elastic to very elastic?

	not elastic —————> very elastic		
A	cloth	wood	rubber
B	wood	cloth	rubber
C	rubber	cloth	wood
D	wood	rubber	cloth

- 6 Substance **X** has high melting point and is a bad thermal conductor. What is substance **X** made of?

- A** ceramics
- B** fibre
- C** metal
- D** plastic

- 7 The diagram below shows exposed copper wires.

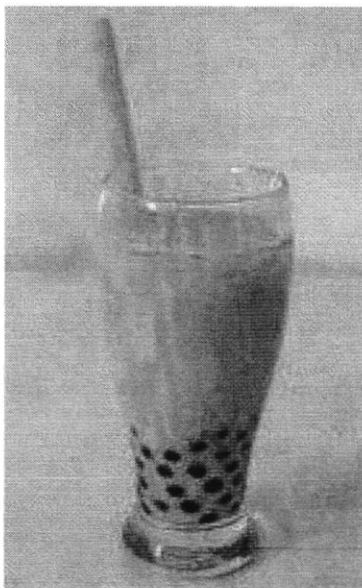


Why is copper used to make wires?

- A** Copper has low density.
 - B** Copper has good solubility.
 - C** Copper has low thermal conductivity.
 - D** Copper has high electrical conductivity.
- 8 Alfian put a spoonful of sugar and a spoonful of sand into a cup of water. He stirs the water and the sugar dissolves in water. Which is the solvent and the solute?

	solvent	solute
A	sand	water
B	sugar	water
C	water	sand
D	water	sugar

- 9 The diagram below shows a bubble tea drink.



- Why is this drink called a suspension?
- A It is non-homogeneous.
 - B It allows light to pass through.
 - C Solid particles settle at the top.
 - D There is no residue after filtration.
- 10 Why is water known as a universal solvent?
- A It is colourless.
 - B It has a neutral pH.
 - C It is an easily available liquid on Earth.
 - D It can dissolve most types of substances.
- 11 Which of the following is **not** a use of a solvent?
- A water is used in cooking
 - B water is used in fighting fire
 - C alcohol used to remove stains
 - D antiseptic solutions used to disinfect wounds

- 12 The table below shows the solubility of three substances **P**, **Q** and **R** in two different temperatures of water.

substance	solubility (g / 100g of water)	
	at 20 °C	at 40 °C
P	20	20
Q	46	55
R	50	63

Which of the following statements is **incorrect**?

- A** Temperature of water does not affect the solubility of substance **P**.
 - B** Substances **Q** and **R** are more soluble in water at higher temperatures.
 - C** Substance **R** is the least soluble substance in both temperatures of water.
 - D** Substance **Q** is more soluble than substance **P** at both temperatures of water.
- 13 The table below shows the colour of litmus paper in three liquids, **X**, **Y** and **Z**.

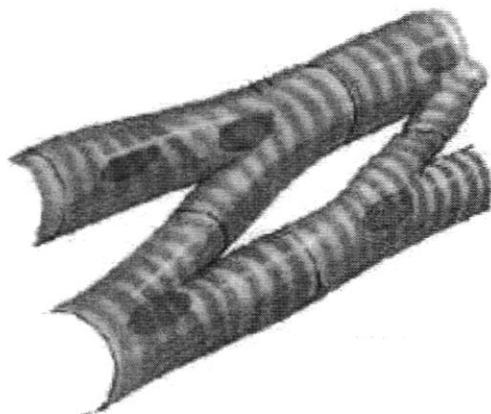
liquid	blue litmus paper	red litmus paper
X	remains blue	remains red
Y	turns red	remains red
Z	remains blue	turns blue

Which of the following statements is correct?

- A** Liquid **X** is an acid.
 - B** Liquid **Y** is neutral.
 - C** Liquid **Z** is alkaline.
 - D** Liquid **X** has pH more than 7.
- 14 Which of the following is acidic?
- A** lemon
 - B** soap
 - C** toothpaste
 - D** water

- 15 What is the basic unit of life?
- A cell
 - B egg
 - C heart
 - D nucleus
- 16 Which part of the cell contains genes?
- A cell membrane
 - B cytoplasm
 - C nucleus
 - D tissue
- 17 What is heredity?
- A It is a process of producing children from parents.
 - B It is the passing down of traits from parents to their child.
 - C It is the similarity between the parents with their children.
 - D It is the combination of habits from both parents of the child.
- 18 What helps our body function effectively?
- A The body is made of one type of cell with different functions.
 - B The body is made of one type of cell with the same function.
 - C The body is made of many different types of cells with the same function.
 - D The body is made of many different types of cells with different functions.
- 19 Which of the following cells do **not** have a nucleus?
- A bone cell
 - B muscle cell
 - C red blood cell
 - D white blood cell

20 What is the cell shown below?



- A bone cell
- B muscle cell
- C nerve cell
- D red blood cell

Section B: Short Structured Questions (40 marks)

Answer all questions in the spaces provided.

21 Fill in the blanks with the correct helping word given in the box. Each helping word can be used once only or not at all. [4]

boiling

condensing

filtering

freezing

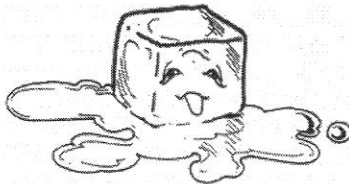
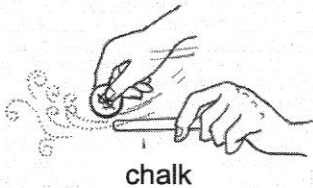
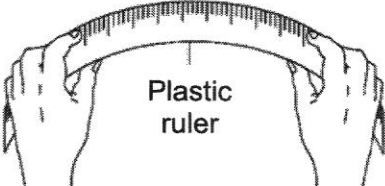
melting

(a)	Ice disappears when placed in a cup of hot water.	
(b)	Water droplets formed on surface of a cold metal can of soft drink.	
(c)	Bubbles of gas are observed in a heated liquid.	
(d)	Ice forms in a glass of water placed in a refrigerator.	

[Total:4]

- 22 Fill in the blanks with the correct helping word given in the box. Each helping word can be used once only or not at all. [3]

elasticity	hardness	melting point	solubility
------------	----------	---------------	------------

	description of property	diagram	physical property
(a)	The temperature at which a substance changes from solid to liquid.		
(b)	The ability to withstand scratches.	 chalk	
(c)	The ability of material to return to its original length or shape after stretching or bending.	 Plastic ruler	

[Total:3]

- 23 A list of objects are shown below. Match the object to the correct type of material in the box below. Each material can only be used once or not at all. [3]

ceramics	fibre	plastic	metal
----------	-------	---------	-------

(a)	a pillowcase	
(b)	a frying pan	
(c)	a water bottle	

[Total:3]

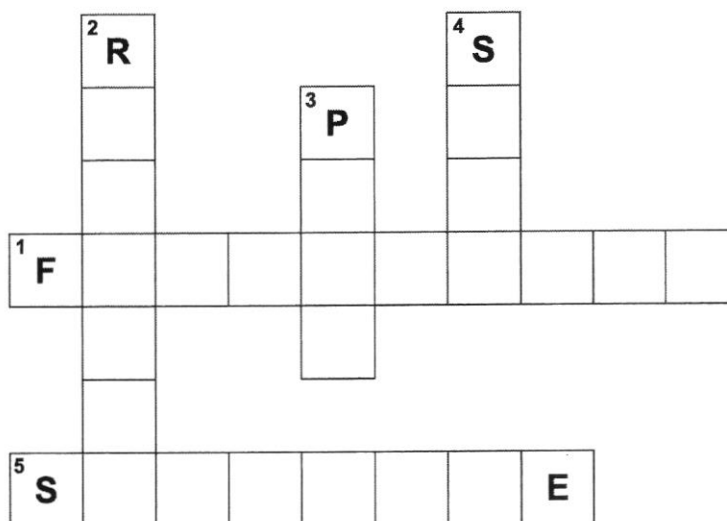
- 24 Complete the crossword puzzle using the clues given below. Some letters in the crossword puzzle are provided. [5]

Across

- 1 removes insoluble solids from a mixture.
- 5 Evaporation is a process to a dissolved solid from its solution.

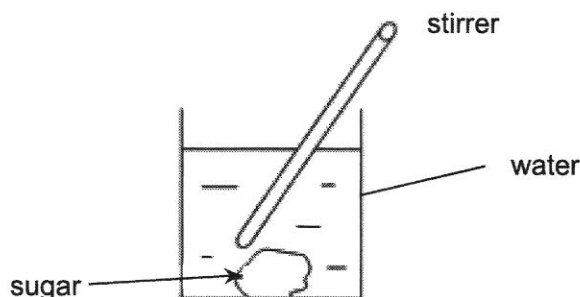
Down

- 2 Insoluble solids that remains on a filter paper is called the
- 3 water will be obtained when condensing water vapour.
- 4 crystals remain when seawater is evaporated in the sun.



[Total:5]

- 25** The diagram below shows a large piece of sugar placed in a beaker of water. The sugar appears to take a long time before it dissolves completely.



- (a)** State whether the mixture of sugar and water forms a solution or a suspension. Give a reason for your answer.

.....

[2]

- (b)** State if there would be any change in the rate of dissolving if the sugar is broken up into smaller pieces.

.....[1]

- (c)** State if there would be any change in the rate of dissolving if the stirrer is used to stir the mixture of sugar and water.

.....[1]

[Total:4]

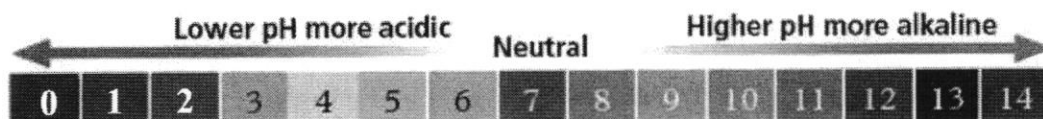
- 26** State if the following statements are true or false by filling in the blanks provided.

True / False

- | | | |
|---|-------|-----|
| (a) A suspension looks cloudy. | | [1] |
| (b) Ethanol is used in the preparation of perfumes. | | [1] |
| (c) Sugar is dissolved in water are used as antiseptic solutions. | | [1] |
| (d) Water dissolves the fertilisers which are absorbed by the roots of plants. | | [1] |

[Total:4]

- 27 The diagram below shows the pH scale.



Fill in the blanks with the correct helping word given in the box. Each helping word can be used once only or not at all. [5]

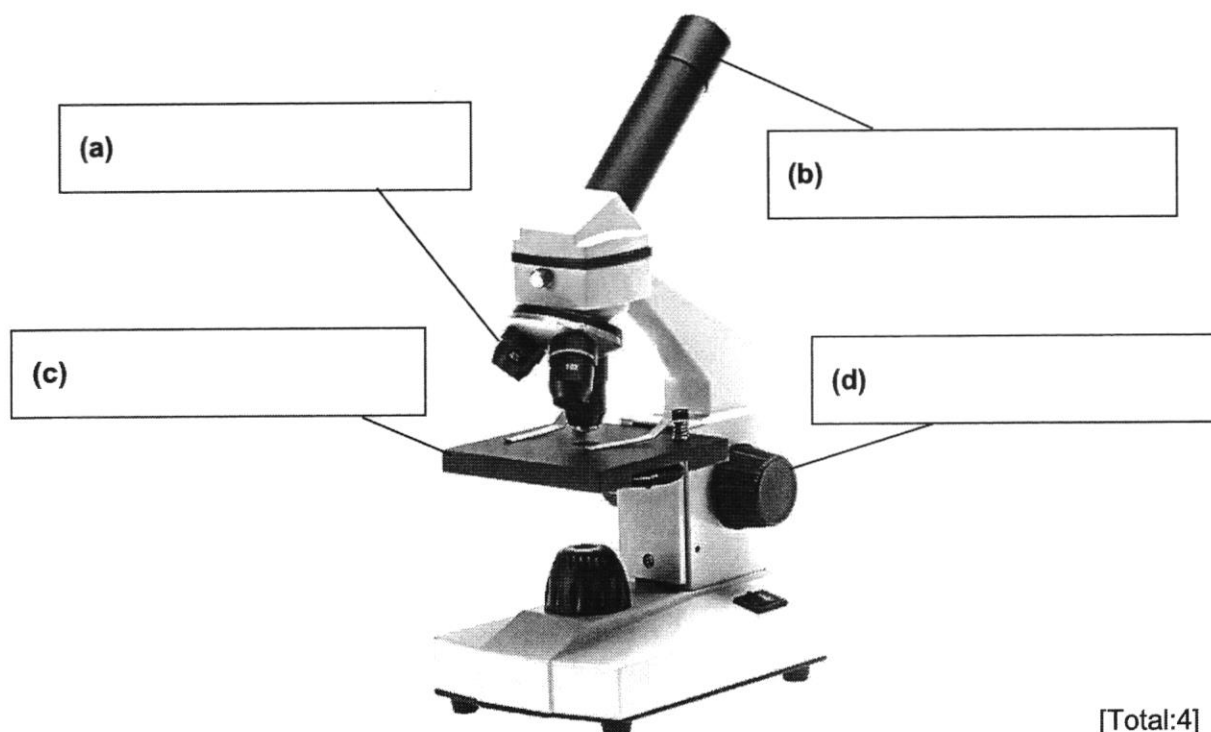
acid	red	bitter	alkaline	blue	sour
------	-----	--------	----------	------	------

The pH scale of is from 0 to 6. Alkalis taste while acid taste Universal indicators might turn if the liquid is acidic while it might turn if the liquid is alkaline.

[Total:5]

- 28 The diagram below shows a microscope. Fill in the blanks with the parts of the microscope given in the box. Each helping word can be used only once. [4]

objective lens	eye piece	stage	adjustment knob
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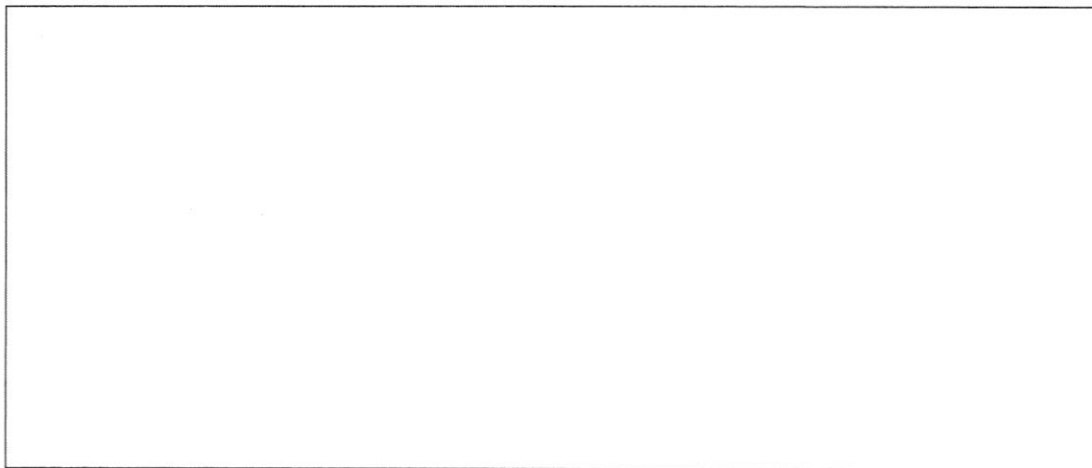


[Total:4]

- 29** Draw a diagram to show the structure of an animal cell. [1]

Label the diagram with the following parts of the cell:

- (a)** cell membrane **(b)** cytoplasm **(c)** nucleus [3]



[Total:4]

- 30** Draw straight lines to match the parts of cell or type of cell to their correct description. [4]

bone cell	•	•	contains jelly-like substance that fills cell
nucleus	•	•	carries oxygen around the body
cell membrane	•	•	contains calcium and phosphates
red blood cells	•	•	controls substances entering or leaving cell
cytoplasm	•	•	controls activities in the cell

[Total:4]



Jurongville Secondary School
Science Department 2019
Marking Scheme & Marker's Report

Assessment: _____

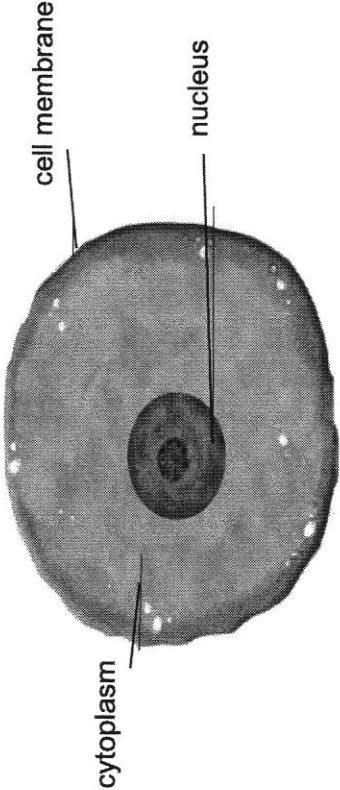
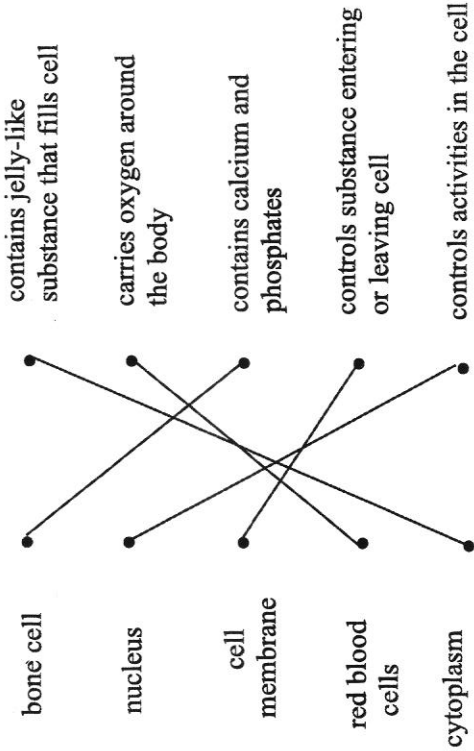
Mid Year Examination Science NT

Level: _____

2 NT

Qn	Marking Scheme	Remarks	Marks
1	D		1
2	C		1
3	A		1
4	B		1
5	B		1
6	A		1
7	D		1
8	D		1
9	A		1
10	D		1
11	B		1
12	C		1
13	C		1
14	A		1
15	A		1
16	C		1
17	B		1
18	D		1
19	C		1
20	B		1
21a	melting	Correct spelling	1
21b	condensing	Correct spelling	1
21c	boiling	Correct spelling	1
21d	freezing	Correct spelling	1
22a	melting point	Correct spelling	1
22b	hardness	Correct spelling	1
22c	elasticity	Correct spelling	1

Qn	Marking Scheme	Remarks	Marks
23a	fibre	Correct spelling	1
23b	metal	Correct spelling	1
23c	plastic	Correct spelling	1
24	¹F I L T R A T I O N ²R E S D U ³P U ⁴S A L	Each correct 1 mark	5
25a	Sugar and water form a solution. The mixture is clear.	Solution must be correct before reason mark is given. Any suitable reason.	1 1
25b	Rate of dissolving would increase if sugar is broken into small pieces.	OWTTE	1
25c	Rate of dissolving would increase with more stirring.	OWTTE	1
26a	True	CAO	1
26b	True	CAO	1
26c	False	CAO	1
26d	True	CAO	1
27	acid, bitter, sour, red, blue	Correct spelling Each correct 1 mark	5
28a	objective lens	Correct spelling	1
28b	eye piece	Correct spelling	1
28c	stage	Correct spelling	1
28d	Adjustment knob	Correct spelling	1

Qn	Marking Scheme	Remarks	Marks
29	 The diagram shows a cross-section of an animal cell. It is roughly spherical with a thick, irregular outer boundary. Inside, there is a large, dark, circular nucleus in the center. The area between the nucleus and the cell membrane is filled with a granular substance. Labels with leader lines point to the 'cytoplasm' (the granular area), the 'cell membrane' (the outer boundary), and the 'nucleus' (the central dark circle).	Correct diagram – 1 mark Each correct labelling of diagram – 1 mark	1 3
30	 This section contains a matching exercise. On the left, there are five terms: 'bone cell', 'nucleus', 'cell membrane', 'red blood cells', and 'cytoplasm'. On the right, there are five descriptions: 'contains jelly-like substance that fills cell', 'carries oxygen around the body', 'contains calcium and phosphates', 'controls substance entering or leaving cell', and 'controls activities in the cell'. Lines connect the terms to the descriptions: 'bone cell' to 'carries oxygen around the body', 'nucleus' to 'contains calcium and phosphates', 'cell membrane' to 'controls substance entering or leaving cell', 'red blood cells' to 'contains jelly-like substance that fills cell', and 'cytoplasm' to 'controls activities in the cell'.	5 correct matches – 4 marks 3 correct matches – 3 marks 2 correct matches – 2 marks 1 correct match – 1 mark	4

-End-