NAME

TEACHER

CLASS

PARENT’S COMMENT

MARK

PERCENTAGE

PARENT’S SIGNATURE

HERZLIA MIDDLE SCHOOL

GRADE 8

NATURAL SCIENCE CYCLE TEST

2 March 2016

TIME: 50 Minutes

MARKS: 90
INSTRUCTIONS

1. There are 14 pages including cover page and one Answer Sheet. Make sure you have all of them.

2. Answer all questions on the paper in blue or black ink.

3. Read each question carefully before answering it.

4. Pay attention to the mark allocation.

5. Plan your time carefully.

6. All the diagrams should be done in pencil and labelled in blue or black ink. Diagram rules must be followed.

7. Write neatly and legibly.

8. Use the Multiple Choice answer sheets for question 1.

9. Write in full sentences. No one word answer will be accepted.
MULTIPLE CHOICE ANSWER SHEET

NAME: __________________________________________________________________ CLASS:_____

Multiple Choice (use pencil only)

Choose the answer, which you consider most appropriate and cross the corresponding letter on this Answer Sheet.
E.g. If your answer to 1.3 is D, indicate your choice like this:

<table>
<thead>
<tr>
<th>1.3</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
</table>

If more than one cross appears in any line, the answer will be marked wrong.

<table>
<thead>
<tr>
<th>1.1</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
</tr>
<tr>
<td>1.3</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
</tr>
<tr>
<td>1.4</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
</tr>
<tr>
<td>1.5</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
</tr>
<tr>
<td>1.6</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
</tr>
<tr>
<td>1.7</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
</tr>
<tr>
<td>1.8</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
</tr>
<tr>
<td>1.9</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
</tr>
<tr>
<td>1.10</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
</tr>
</tbody>
</table>
SECTION A (LIFE & LIVING AND MATTER & MATERIALS)

QUESTION 1    MULTIPLE CHOICE

Four options are provided as possible answers to the following questions. Each question has only ONE correct answer. Mark this in the appropriate place on the answer sheet provided.

1.1 A particle that makes up all matter.
   A  element
   B  atom
   C  gas
   D  heat

1.2 A person can divide a piece of chalk until you get to a single particle. This particle is called …
   A  Element of chalk
   B  Atom of chalk
   C  Molecule of chalk
   D  Compound of chalk

1.3 Energy that makes particles move comes as:
   A  Chemical energy
   B  Electrical energy
   C  Potential energy
   D  Heat energy
1.4 The movement of particles caused by colliding with invisible air particles. (2)
   A. Diffusion
   B. Brownian motion
   C. Evaporation
   D. Melting

1.5 The solid materials that remain on a filter paper after filtration is called (2)
   A. filtration
   B. filtrate
   C. filter
   D. residue

1.6 Plants that are not naturally found in an area are called (2)
   A. indigenous
   B. alien
   C. unique
   D. organic

1.7 A pure substance is (2)
   A. Made up only one atom
   B. Made up of two or atoms of different kinds
   C. Made up of one type of particles throughout
   D. Made up of a metal and non-metal combined together
1.8 What do you call a solid that is dissolved in liquid

A solvent
B solute
C filtrate
D residue

1.9 Which of the following statements is not a fynbos plant adaptation?

A Plants develop broad leaves to reduce water loss
B Plants have long roots to reach the water table
C They have narrow leaves to reduce water loss
D They have thick leaves to retain water

1.10 The group of fynbos plants that grow bulbs underground is called

A Restioids
B geophytes
C ericoid
D reeds

(10X2=20) 20
Give ONE word/term for each of the following descriptions. Write only the word/term next to the question number (2.1–2.5). Do not give examples.

<table>
<thead>
<tr>
<th>Question</th>
<th>Description</th>
<th>Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1</td>
<td>Movement of particles at a fixed position</td>
<td></td>
</tr>
<tr>
<td>2.2</td>
<td>Particles evenly distributed in an area</td>
<td></td>
</tr>
<tr>
<td>2.3</td>
<td>Anything that occupies space or volume</td>
<td></td>
</tr>
<tr>
<td>2.4</td>
<td>Another name for state of matter</td>
<td></td>
</tr>
<tr>
<td>2.5</td>
<td>When a solute can no longer dissolve in a solvent</td>
<td></td>
</tr>
<tr>
<td>2.6</td>
<td>The arrangement of particles in fixed pattern</td>
<td></td>
</tr>
<tr>
<td>2.7</td>
<td>Flat surfaces of crystals</td>
<td></td>
</tr>
<tr>
<td>2.8</td>
<td>The splitting of crystals along their surfaces</td>
<td></td>
</tr>
<tr>
<td>2.9</td>
<td>The fourth state of matter</td>
<td></td>
</tr>
<tr>
<td>2.10</td>
<td>Strong forces of attraction between particles</td>
<td></td>
</tr>
</tbody>
</table>
Choose an item from COLUMN B that matches a description in COLUMN A. Write only the letter (A – I) next to the question number (3.1 – 3.5).

<table>
<thead>
<tr>
<th>COLUMN A</th>
<th>COLUMN B</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1 Western Cape</td>
<td>A midges</td>
</tr>
<tr>
<td>3.2 Factors kept constant</td>
<td>B transact</td>
</tr>
<tr>
<td>3.3 invasive</td>
<td>C habitat</td>
</tr>
<tr>
<td>3.4 Sampling technique</td>
<td>D Cape floristic kingdom</td>
</tr>
<tr>
<td>3.5 An area where animals leave</td>
<td>E dependent</td>
</tr>
<tr>
<td>3.6 Fynbos</td>
<td>F Black wattle</td>
</tr>
<tr>
<td>3.7 Factors that is measured</td>
<td>G Controlled variable</td>
</tr>
<tr>
<td>3.9 invertebrates</td>
<td>H Small plant or animal used for study</td>
</tr>
<tr>
<td>3.10 Specimen</td>
<td>I Wet and dry summers</td>
</tr>
<tr>
<td></td>
<td>J Factor changed by the investigator</td>
</tr>
</tbody>
</table>
SECTION B (LIFE & LIVING)

QUESTION 4

4.1 Study the photograph showing the Grade 8 pupils from last year doing alien popping and answer the questions.

4.1.1 Explain the meaning of alien vegetation. (2)

4.1.2 Give one advantage of alien vegetation? (1)

4.1.3 What will be the long term effect of removing alien plants from the Bundi campsite? (2)
QUESTION 5 Study the diagram and answer the questions.

5.1 Give a suitable heading. (2)

5.2 What is the aim of the above experiment? (1)

5.3 Give a safety precaution for this experiment. (1)

5.4 Write down the conclusion to the experiment. (2)

5.5 Mr Joseph smeared some petroleum jelly after removing the cover. Give a reason why? (2)
QUESTION 6.

In an experiment potassium permanganate was added in a beaker and the diagrams below shows how it dissolved over time. At first, the particles are all near one corner of the beaker. If the particles all randomly move around in the water, then the particles will eventually become distributed randomly and uniformly, and organized.

6.1 Using the theory particle model of matter explain clearly why the potassium permanganate ended up filling the whole container. Give two factors.

____________________________________________________________________

____________________________________________________________________

____________________________________________________________________

____________________________________________________________________

____________________________________________________________________
6.2.1 Identify a liquid, gas and a solid. Write the state below each letter.

6.2.3 What causes a substance to change from state A to B

6.2.3 Is it possible to turn a substance from substance C to A without becoming state B first? If so, name the process.

6.2.4 Define evaporation
QUESTION 7

In experiment to investigate phase change. Each group was given the following materials: thermometer, stop watch, beaker, ice cubes, Bunsen burner, and matches. The grade 8 designed an experiment and obtained the following results. They measured and recorded temperature of the water as it was heated for 20 minutes every 2 minutes. The initial temperature was measured.

<table>
<thead>
<tr>
<th>Time (mins)</th>
<th>2</th>
<th>4</th>
<th>6</th>
<th>8</th>
<th>10</th>
<th>12</th>
<th>14</th>
<th>16</th>
<th>18</th>
<th>20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature (°C)</td>
<td>5</td>
<td>2</td>
<td>8</td>
<td>12</td>
<td>20</td>
<td>36</td>
<td>50</td>
<td>80</td>
<td>98</td>
<td>98</td>
</tr>
</tbody>
</table>

7.1 Using the information in the above table, draw a line graph on graph paper provided on page 14. Remember to follow all rules for drawing a graph.

7.2 What is the aim of the investigation

7.3 Identify the independent variable

7.4 Identify the dependent variable

7.5 Identify three controlled variables

7.6 Give a possible explanation why the temperature remains constant from 18 to 20 mins

7.7 Why does the temperature of the water drop from 2 minutes to 4 minutes instead of rising up?
7.8 Give a conclusion to your investigation. (2)