

## 2018 USGO Written Examination - Key and Marking Scheme (Middle School)

### Section 1 [10 points]

**Grading notes:** Questions 1 and 2 are point marked, questions 3 and 4 are level marked.

**Expected answers:**

1. [4 points] cars, power plants, and cows should be circled [ONLY these three answers may be circled, and credit should be awarded on an all-or-nothing basis]
2. [1 point] cows
3. [2 points – 1 point per correct response] Reasons may include - increase in the number of livestock animals (particularly cows); increase in areas under cultivation for rice farming; increased number and size of landfills; arctic methane emissions from melting of permafrost [accept other reasonable answers]
4. [3 points] The greenhouse effect is the process by which radiation, from a planet's atmosphere, warms the planet's surface to a temperature above what it would be without its atmosphere. If a planet's atmosphere contains greenhouse gases they will radiate energy in all directions. Part of this radiation is directed towards the surface, warming it. The intensity of the downward radiation – that is, the strength of the greenhouse effect – will depend on the atmosphere's temperature and on the amount of greenhouse gases that the atmosphere contains. [award credit for partial answers or any reasonable equivalent]

### Section 2 [10 points]

**Grading notes:** Questions 1, 2 and 3 are point marked, questions 4 and 5 are level marked.

**Expected answers:**

1. [1 points] Hawaii
2. [1 points] Kilauea (be lenient on spelling, but don't accept the names of any other Hawaiian volcanoes here)
3. [1 points] 45 years
4. [3 points] The volcanoes of the Hawaiian Islands are formed from of a tectonic plate (in this case the Pacific plate) moving over a hotspot on the earth's mantle, which results in the formation of volcanoes as the plate moves over time. [accept any reasonable equivalent answers, accept use of Pacific plate for tectonic plate]
5. [4 points] People in Hawaii choose to live near volcanoes for many cultural, economic, and religious reasons. In Hawaii, islanders have lived near volcanoes for centuries, and volcanic activity plays a large role in traditional Hawaiian mythology. In addition, Hawaii's volcanoes are a major tourist attraction, bringing in thousands of visitors every year. [accept any reasonable answer; award two points per correct answer]

### **Section 3 [10 marks]**

**Grading notes:** Questions 1, 2, and 3 are point marked; question 4 is level marked.

**Expected answers:**

1. [1 points] glaciers
2. [3 points] arete – Y; U-shaped valley – Z; cirque – X
3. [3 points] F; T; T
4. [3 points] Activities include hiking, rock / mountain climbing, camping and other outdoor activities could be done in either season; in addition, skiing and other winter sports might be done in the winter; weather here in the winter would be very cold with snow [one point per answer, accept other reasonable answers]

### **Section 4 [10 points]**

**Grading notes:** All questions are point marked.

**Expected answers:**

1. [1 point] wheat
2. [1 point] rice
3. [1 point] commercial
4. [1 point] subsistence
5. [6 points] T; F; F; F; T; F

### **Section 5 [10 points]**

**Grading notes:** All questions are point marked. For questions 5 and 6, no points are awarded unless BOTH answers are correct.

**Expected answers:**

1. [1 point] November
2. [1 point] 18 degrees [accept anything between 17 and 19]
3. [1 point] London – Cfb
4. [1 point] Kuala Lumpur – Af
5. [1 point] Zagreb; Vienna

6. [1 point] Medellin; West Palm Beach

7. [1 point] convectional

8. [1 point per answer] X - Energy from the sun warms the ground; Y - Air near the ground is warmed and rises; Z - Condensation occurs, resulting in rain and storms [accept reasonable equivalents]