### Qualification title: 0173 Technical in Land and Wildlife Management
### Test title: 0173-011/511
### Version: March 2018

<table>
<thead>
<tr>
<th>Q</th>
<th>Acceptable answer(s)</th>
<th>Guidance</th>
<th>Max mks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>Answer:</strong>&lt;br&gt;<strong>a)</strong> 1 mark for one of the following:&lt;br&gt;- Diorite&lt;br&gt;- Gabbrogranite&lt;br&gt;- Pegmatite&lt;br&gt;- Peridotite&lt;br&gt;&lt;br&gt;1 mark each for the following&lt;br&gt;<strong>a)</strong> Sand (1), Silt (1) &amp; Clay (1)&lt;br&gt;&lt;br&gt;<strong>b)</strong> 1 mark for each point – up to 2 marks&lt;br&gt;- Loss of organic matter&lt;br&gt;- Decreased permeability&lt;br&gt;- Degradation of soil makes it hard and compact</td>
<td></td>
<td>6</td>
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<td>2</td>
<td><strong>Answer:</strong>&lt;br&gt;Pyramid of biomass represents how much energy is passed on from each trophic level (<strong>1 mark</strong>) biomass at each level is lesser than the level below (<strong>1 mark</strong>).&lt;br&gt;When animals eat, only a small portion is converted to new tissue (<strong>1 mark</strong>) which is the food for the next trophic level. This is because energy is lost at each step (<strong>1 mark</strong>) as heat or due to being used for life processes by the organism at each level (<strong>1 mark</strong>).&lt;br&gt;Therefore a larger biomass of oak tree is required to support a smaller biomass of caterpillar/a larger biomass of blue tit is required to support a smaller biomass of sparrowhawk/ a larger biomass of caterpillar is required to support a smaller biomass of blue tit/ (<strong>1 mark</strong>).&lt;br&gt;Accept and award marks for any other appropriate alternative wording of the answer.</td>
<td></td>
<td>6</td>
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<td>3</td>
<td><strong>Answer:</strong>&lt;br&gt;<strong>Any two</strong> from the following:&lt;br&gt;- Faeces&lt;br&gt;- Footprints&lt;br&gt;- Hones/nests&lt;br&gt;- Fur/feathers&lt;br&gt;- Evidence of kill&lt;br&gt;- Smell</td>
<td>Accept and award marks for any other appropriate signs.</td>
<td>2</td>
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### Question 4

**Answer:**

a) - audible deterrent  
- scent  
- taste  
- electrical  
- diversionary feeding  
- habitat manipulation  

1 mark each up to 2 marks

b) Exclusion is the process of removing an animal from an area to protect entry of unwanted pests (1 mark).  
*Example* – fencing/release pens/tree guards (1 mark)

c) Three advantages and three disadvantages as below:

**Disadvantages (1 mark each)**  
- Habituation (get used to them)  
- effectiveness short lived  
- non selective  
- timing can be inappropriate

**Advantages (1 mark each)**  
- cheap/free  
- easy to deploy  
- no training required  
- can be used on protected species as they non-lethal

Accept and award marks for any other appropriate alternative wording of the answer.

### Question 5

**Answer:**

a) A - Top lever (1 mark)  
B - Safety catch (1 mark)

Up to 2 marks

b) Increasing the choke (1 mark) restricts the spread of the pellets (1 mark) as they leave the barrel.  
This produces a tighter (1 mark) with less chance of wounding/increased chance of killing at longer ranges (1 mark).

Up to 4 marks

### Question 6

**Answer:**

a) 6.5 = diameter of bullet (1 mark)  
55 = length of cartridge case (1 mark)  
Both measured in mm (1 mark)

6
b) 1 click = 1cm at 100m (1 mark)
Therefore 1 click = 0.25cm at 25m (1 mark)
Therefore, 2cm adjustment requires $2 / 0.25 = (1) 8$ clicks (1 mark)

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
<th>Marks</th>
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<tbody>
<tr>
<td>7</td>
<td>Any two of these:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- pink footed</td>
<td></td>
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<tr>
<td></td>
<td>- greylag</td>
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<td></td>
<td>- white fronted</td>
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<tr>
<td></td>
<td>- Canada</td>
<td></td>
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<td></td>
<td>- Barnacle</td>
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<td></td>
<td>1 mark each up to 2 marks</td>
<td>2</td>
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<tr>
<td>8</td>
<td>Answer:</td>
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<tr>
<td></td>
<td>a. December (1 mark)</td>
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<td></td>
<td>b. Young to old ratio/average young per pair/young:old (1 mark)</td>
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<td>9</td>
<td>Answer:</td>
<td>4</td>
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<td>Pheasants are polygamous (1 mark) whereas grouse are monogamous (1 mark) A cock pheasant will defend a territory but will also defend a harem of up to 12 hens – territorial harem defence (1 mark). Red grouse cocks will defend a territory but will pair-up with a single hen (1 mark).</td>
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<td>10</td>
<td>Answer:</td>
<td>4</td>
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<td>Red grouse (1 mark) – heather burning (1 mark) increases patch mosaic of heather stands (1 mark) resulting in smaller territories (1 mark). Pheasants (1 mark) - woodland ride management (1 mark) increases length of woodland edge (1 mark) resulting in more cock territories and hen nesting habitat (1 mark).</td>
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<td>11</td>
<td>Answer:</td>
<td>12</td>
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<td>Indicative content</td>
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<td></td>
<td>- Impact of cooler wetter climate on upland land use is that soils tend to be less productive,</td>
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<td></td>
<td>- growing seasons shorter</td>
<td></td>
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<td>- snow/frost events longer and harsher</td>
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Confidential

- this results in less choice of crops/trees
- more extensive agricultural systems
- large scale commercial plantation forestry
- lower input systems
- Also makes uplands dramatic landscapes leading to greater public recreation
- Predominant habitat is heather moorland
- Organic/peat soils
- Blanket bog
- Species linked to heather are red and black grouse
- Predator control, heather burning, medicated grit, grouse counts
- Unsuitable for rear and release game birds

**Band 1: 1-4 Marks**
A basic explanation, showing some understanding of effect of wetter climate on a limited range of land uses. A brief description of the type of game management which is suited to the uplands. Answer may be disorganised and ambiguous.

**Band 2: 5-8 Marks**
A clear explanation, showing a good understanding of effect of wetter climate on a range of land uses, but lacks details. A good description of the type of game management, with an attempt to link this description to aspects of climate and land use. The information is presented mostly in a structured format.

**Band 3: 9-12 Marks**
An excellent explanation, showing a comprehensive understanding of effect of wetter climate on a range of land uses with details. A clear description of the type of game management, with strong linkage to aspects of climate and land use. Information will be presented in a well-structured format.