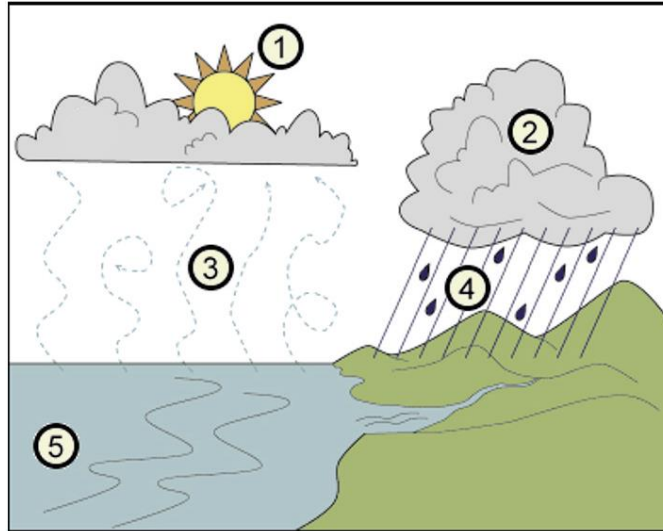


**Qualification: 0173-511/011 Level 3 Technical in Land and Wildlife – Theory
Exam**

June 2018

1a	Describe the origin of sedimentary rock.		
	Acceptable answer(s)	Guidance	Max mks
	<p>1 mark for each of the following, up to 2 marks:</p> <p>The particles that are deposited by wind/water and solidified to form sedimentary rocks are called sediments (1). Sediments are formed by weathering/erosion of rock from the source area (1)</p>		2
1b	Name one sedimentary rock.		
	Acceptable answer(s)	Guidance	Max mks
	Chalk/Limestone (1)		1

2 The diagram shown in Figure 1 depicts the hydrological cycle.



Name the processes involved at points 2, 3, and 4 in Figure 1 above.

Acceptable answer(s)

Guidance

Max mks

1 mark for each of the following:

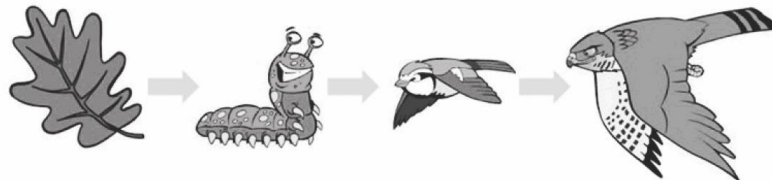
2 = condensation (1)

3 = evaporation (1)

4 = precipitation (1)

3

3a



With reference to the food chain in Figure 2 above, and the different forms that energy can take, explain how:

a) energy enters the food chain

Acceptable answer(s)

Guidance

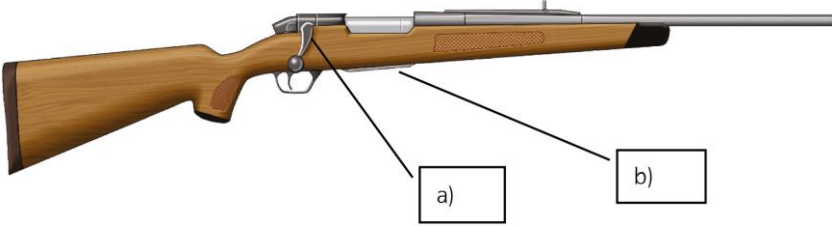
Max mks

1 mark for each of the following, up to 2 marks:

Light energy from sun is transformed into chemical energy (1)
in leaf tissue via photosynthesis (1)

2

3b	b) energy is lost at each stage of the food chain.		
	Acceptable answer(s)	Guidance	Max mks
	1 mark for each of the following, up to 2 marks: Chemical energy is transformed via respiration (1) and some is lost as heat energy (1)		2
4	Explain what would probably happen to a grassland habitat if it was not cut/grazed for a number of years.		
	Acceptable answer(s)	Guidance	Max mks
	1 mark for each of the following, up to 2 marks: Grassland is maintained by cutting/grazing removal of these two management techniques would result in natural succession (1) which would see the grassland convert to scrub and eventually woodland (1 mark for either scrub/woodland as climax community) .		2
5a	If only checking fox snares once a day, state the best time to do this.		
	Acceptable answer(s)	Guidance	Max mks
	First thing in the morning (1)		1
5b	Explain why most second generation anti-coagulant rodenticides (SGAR) are chronic poisons.		
	Acceptable answer(s)	Guidance	Max mks
	1 mark for each of the following, up to 3 marks: SGARs are chronic poisons as rats will only take a small amount of a new food stuff (1) , so they are designed to not cause any immediate ill effect (1) until a lethal dose has accumulated in the rats body (1) Neophobic/fear of new things (1)		3

6	Diversionary feeding is one non-lethal method that has been suggested for protecting gamebirds from raptors. Describe one example of how this could be used.		
	Acceptable answer(s)	Guidance	Max mks
	1 mark for species and 1 mark for correct food and 1 mark for identifying target species and 1 mark for age, up to 4 marks: Eg Feeding buzzards/red kites mammalian carrion to divert them from released pheasant/partridge poults Eg feeding hen harriers day old chicks to divert them from grouse chicks	<i>Accept and award marks for any other appropriate response.</i>	4
7a	State what is meant by asynchronous hatching.		
	Acceptable answer(s)	Guidance	Max mks
	They don't all hatch at same time but are staggered (1)		1
7b	State the level of legal protection given to the Polecat in the UK.		
	Acceptable answer(s)	Guidance	Max mks
	1 mark for each of the following, up to 2 marks: <ul style="list-style-type: none"> • Listed on Schedule 6 WACA 1981 (1) • May not intentionally set a spring trap to catch (1) • Can still shoot in the day only (1) 		2
8a	Name the parts of the rifle labelled a) and b) in Figure 3 below. <div style="text-align: center;">  </div>		
	Acceptable answer(s)	Guidance	Max mks
	1 mark for each of the following, up to 2 marks: A. Bolt (1) B. Magazine (1)		2

8b	State the two dimensions that must be checked on a shotgun cartridge before loading it into a shotgun.														
	Acceptable answer(s)	Guidance	Max mks												
	1 mark for each of the following, up to 2 marks: <ul style="list-style-type: none"> Gauge/bore e.g. 12, 16, 20 etc (1) Cartridge/Chamber length e.g 2 ¾", 3" etc (1) 		2												
8c	State the minimum age a person can be granted a Shotgun Certificate in the UK.														
	Acceptable answer(s)	Guidance	Max mks												
	There isn't one (1)		1												
9a	Explain how the shot size in a shotgun cartridge, affects the pattern of shot and therefore effective killing range of a shotgun.														
	Acceptable answer(s)	Guidance	Max mks												
	1 mark for each of the following, up to 4 marks: Larger shot size results in fewer pellets (1) therefore bigger gaps in pattern at longer ranges (1) however larger shot sizes retain more energy (1) therefore have bigger impact on target animal (1)		4												
9b	The table below shows some ballistic data for two centre fire bullet types. Explain how the trajectory of the two bullets will differ.														
	<table border="1"> <thead> <tr> <th>Calibre</th> <th>Bullet weight</th> <th>Muzzle velocity</th> <th>Ballistic Coefficient</th> </tr> </thead> <tbody> <tr> <td>6.5 x 55</td> <td>140 grains</td> <td>2550 fps</td> <td>0.45</td> </tr> <tr> <td>0.243</td> <td>55 grains</td> <td>3910 fps</td> <td>0.276</td> </tr> </tbody> </table>			Calibre	Bullet weight	Muzzle velocity	Ballistic Coefficient	6.5 x 55	140 grains	2550 fps	0.45	0.243	55 grains	3910 fps	0.276
	Calibre	Bullet weight	Muzzle velocity	Ballistic Coefficient											
6.5 x 55	140 grains	2550 fps	0.45												
0.243	55 grains	3910 fps	0.276												
Acceptable answer(s)	Guidance	Max mks													
1 mark for each of the following, up to 4 marks: 0.243 calibre bullet type will have a flatter trajectory (1) , because this bullet type is much faster (1) and the 6.5x55 bullet type will have more pronounced trajectory (1) because this bullet type has a greater drop (1)		4													

10a	Place the following species in order of clutch size, largest first. Woodcock, Grey Partridge, Pheasant		
	Acceptable answer(s)	Guidance	Max mks
	Grey Partridge – Pheasant – Woodcock (1)		1
10b	State which month pheasants normally start to lay eggs in the wild.		
	Acceptable answer(s)	Guidance	Max mks
	April (1)		1
10c	State the date when the pheasant shooting season ends.		
	Acceptable answer(s)	Guidance	Max mks
	1 st February (1)		1
11a	Describe how the habitat requirements of the pheasant differ from those of the grey partridge.		
	Acceptable answer(s)	Guidance	Max mks
	1 mark for each of the following, up to 2 marks: Pheasants are birds of woodland edge (1) whereas Partridge prefer open farmland (1)		2
11b	State one piece of equipment that could be used in a wild game survey.		
	Acceptable answer(s)	Guidance	Max mks
	1 mark for each of the following for 1 mark: <ul style="list-style-type: none"> • Binoculars • Vehicle • Recording equipment • Map of area • Suitable dog breeds 		1

12	Explain how young grouse can be distinguished from old ones, when sorting birds in the game larder at the end of a shootday.		
	Acceptable answer(s)	Guidance	Max mks
	1 mark for each of the following up to 2 marks: <ul style="list-style-type: none"> Pointed/cream tips on primary feathers of young birds (1) Young birds have weaker bones – skull easier to crush, legs / beak break easily (1) 	<i>Accept and award marks for any other appropriate response.</i>	2
13	Disease in wild gamebirds tends to be a density dependent mortality factor. Explain what this means and how disease outbreaks can be managed without the use of medication.		
	Acceptable answer(s)	Guidance	Max mks
	1 mark for each of the following up to 4 marks: As population of game increases in a specific area (1) the proportion dying from disease increases (1) . Only way to manage without medication would be population control ie reduce density (1) Main way is to ensure sufficient numbers are shot so as not to leave too large a stock on the ground (1)		4
14	Compare and contrast the methods and reasons for predator control between a wild bird shoot and one which releases pheasants.		
	Acceptable answer(s)	Guidance	Max mks
	Band 1: 1-4 Marks A basic discussion comparing and contrasting a limited range of reasons and methods of predator control between the two types of shoot. Consideration of timings and methods involved have been included but with little understanding of the differences. Band 2 : 5-8 Marks A good discussion comparing and contrasting a range of reasons and methods of predator control between the two types of shoot. Clear consideration of relevant timings and methods, which include both lethal and non-lethal techniques. A range of relevant predators have been considered for each type.	Indicative content <ul style="list-style-type: none"> Wild birds vulnerable to predation particularly whilst nesting and rearing young in Spring Pheasants are most vulnerable to predation when released as poults in summer Pheasants are young, naïve and also at high density when released Non-lethal techniques can help eg a good pen, 	12

	<p>Band 3: 9-12 Marks</p> <p>An excellent discussion comparing and contrasting a wide range of reasons and methods of predator control between the two types of shoot. Detailed consideration of relevant timings and methods, which include both lethal and non-lethal techniques. A wide range of relevant predators have been considered for each type, with a full understanding of the differences.</p>	<p>electric fence and use of deterrents</p> <ul style="list-style-type: none"> • Some non-lethal techniques not very easy to deploy over a large area as wild birds not concentrated like reared birds • Some predators eg fox will surplus kill when faced with a high density of prey resulting in the potential loss of 100's of birds • So to protect valuable stock - it is necessary to reduce the populations of certain predators that will kill gamebirds eg foxes • A greater range of predators will need to be controlled on wild bird shoots to protect all year round • Compensate for losses by releasing more birds • Released birds don't know how to avoid predators 	
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