Level 3 Animal Management - Answers

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1. Two from temperature, pulse rate, respiration rate, capillary refill time.
2. The time it takes for blood to fill a section of the capillary system after its supply has been blocked.
3. Up to two seconds.
4. A digital thermometer has a digital display and will beep once the reading is ready. A mercury thermometer needs to be read against a scale once the mercury has stopped moving.

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1. Two from: check eyes, ears, mouth, nose.
2. The movement of the limbs when walking.
3. A layer of cells that covers certain organs and openings in the body.
4.
    a) Normal
    b) Low oxygen in the blood
    c) Liver or kidney problem.

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1. To make it illegal for anyone to operate on animals, or call themselves a vet, unless they are on the register of veterinary surgeons.
2. Two from: pregnant animals may not be sold; animals may not be tied up or suspended from the ground; animals must have sufficient bedding, food, water, lighting.
3. Two from: have a normal diet; have a suitable place to live as is considered normal for that particular species; are free of pain, injury, suffering and disease; exhibit behaviour that is normal for that species.
4. Slaughterhouses / abattoirs.

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1. Single-celled organism.
2. They take over the replication processes of cells in order to duplicate their DNA.
3. A single-celled organism that that displays some animal-like characteristics, such as movement of feeding.
4. Any common bacteria, but likely to be from: E. coli, salmonella, staphylococcus.
5. Rabies – virus; Avian flu – virus; Swine Flu – virus; Bovine Spongiform Encephalopathy (BSE) – none of the options, is caused by a misfolded protein; Tuberculosis – bacteria; Bluetongue – virus; Foot and Mouth disease – virus; Newcastle Disease – virus; Equine Infectious Anaemia – virus; Ringworm -fungus; Salmonella – bacteria; Camplyobacter – bacteria; Cat Scratch Fever – bacteria; Leptospirosis – bacteria; Lyme Disease – bacteria but transmitted by a tick; Psittacosis – bacteria; Cheyletiella – parasite; Sarcoptic mange – parasite; Toxoplasmosis.- a single-celled parasite.

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1. Any organism that lives in or on another organism.
2. A parasite that lives in its host.
3. See page 19 of the book.
4. Itching, irritated skin, dull coat, loss of fur.
5. Sprays, powders, tablets or shampoos can all be used, but the environment should also be thoroughly cleaned and vacuumed to remove eggs and larvae too.

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1. Any three from: direct, indirect, airborne, from vectors, from fomites, by inhalation, through ingestion.
2. Any non-living object that can contain and transmit a disease.
3. A pathogen that spreads a disease.
4. A protein produced in the blood in response to a pathogen, that can kill the pathogen.
5. A small amount of pathogen injected into an animal can stimulate the production of the correct antibodies, which the body can use in the future to fight off the disease.
6. Any organism that carries that pathogen but does not contract the disease.

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1. A notifiable disease means there is a legal requirement to report them to the Animal and Plant Health Agency. This includes any suspicion that an animal has the disease, even if you are not sure.
2. A zoonotic disease is an infectious disease that can be passed on to humans.
3. Antibiotics.
4. Two from: avoid wild areas where the ticks are found – woods, marshes, tall grasses. Clear overgrown vegetation near animal enclosures. Use tick prevention measures. Vaccinations.
5. Two from: behavioural change, aggression, sensitivity to light, fever, paralysis of the jaw, foaming at the mouth.
6. Through eating infected meat or bone meal.
7. Birds
8. A disease of the skin caused by a mite that burrows through the skin, spread through direct contact or via fomites.

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1. From CDV (6-12 weeks old, doses every 4 weeks unit week 16), CPV (6-12 weeks old), CAV (6-12 weeks old).
2. From: Feline Infectious Enteritis/Feline Panleucopaenia/Feline Parvovirus; feline herpes; feline calicivirus. There is a combined vaccination for all three at 9 and 12 weeks.
3. From: Myxomatosis / Rabbit Haemorrhagic Disease (after 5 weeks); RHD 2 (7 weeks or 2 weeks later than myxomatosis/RHD.
4. From: tetanus, equine influenza, equine herpes virus, strangles, equine viral arteritis.

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1. The formation of strong bones and teeth.
2. a) Lack of sun and/or dietary sources, such as fish, grains and hay. b) Rickets (weak and curved bones), growth problems, weak legs, soft eggs laid by birds.
3. a) Taurine is an amino acid that cats cannot make and needs to be in their diet. b) Impaired vision and tooth decay.
4. a) Arachidonic acid b) Poor skin, vision problems, reproductive issues, problems with blood clotting.

5. A build-up of solids in the urinary tract. It can be treated through surgery, diet changes, medicine
6. a) An inadequate amount of insulin being produced, or the body not responding to the production of insulin. b) Frequently urinating, thirsty, hungry, weight loss, inactive, dull coat.

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1. As well as a lead and collar you could consider a muzzle and a restraint pole.
2. a) Ensure bleeding has stopped. b) Use a saline solution to disinfect. c) Make sure any debris is removed at the same time as disinfecting. d) Dry and dress the wound.
3. You must make sure that the situation is safe for you and other road users. This means making sure other cars have sufficient warning of an incident to ensure they are not putting you in danger.
4. Two from: pale gums, rapid pulse and/or breath, slow capillary refill time, coughing up blood, blood present in the faeces.
5. You would keep the animal warm, prevent any blood loss, keep airways clear, stop the animal from moving around, keep head lower than body.
6. Three from: bandages, adhesive tape, cotton wool, dressing material, rectal thermometer, tweezers, gloves, scissors, hand sanitiser, eye wash, antiseptic solution, poultice, carrier bag, blanket.
7. To preserve life, protect from further harm, reduce pain and suffering, promote recovery.
8. Two from: poisoning, severe burns, severe wounds, uncontrolled bleeding, severe allergic reaction, obstructions to the airway, severe breathing problems, weak pulse, animal is unconscious.

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1. a) Monosaccharides, disaccharides and polysaccharides. b) They are an important source of energy for animals.
2. a) Amino acids. b) They are play some role in all bodily processes and functions.
3. A source of energy, absorption of vitamins A, D, E, K.
4. Two from: provides a medium in which chemical reactions can take place, delivers nutrients to the body's cells, is used to flush toxins away from the body, regulates body temperature.

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1. Protein.
2. In the liver and muscles.
3. Fat-soluble vitamins - A, D, E and K.
4. Fat.
5. Within the structure of the body, for instance in the bones.

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1. a) mechanical breakdown of food through chewing, chemical breakdown through saliva, b) to move food from the mouth to the stomach, c) where most digestion takes place: releases gastric acid to expose chemical bonds of protein, and enzymes to break proteins into amino acids and fats into their simplest form; also mechanical action to churn up the food d) some further enzymes are released for final breakdown of food, and nutrients are absorbed into the bloodstream e) any remaining nutrients and water are absorbed.
2. a) mechanical breakdown of food through chewing – but there is no chemical breakdown, b) the rumen is a container where plant material sits until it has been broken down by enzymes produced by symbiotic microbes, c) water from food is absorbed and any remaining particles of food are filtered out, d) much the same a monogastric stomach - hydrochloric acid and a range of enzymes are secreted that allows fat, protein and carbohydrates to be extracted.
3. Some protein can be digested by the microbes in the rumen, and the rest can be digested in the abomasum.
4. Monogastric animals that can break down cellulose by relying on bacteria that live in the large intestine to produce the necessary enzyme. One from rabbit, horses, rodents.
5. Two from: sheep, goats, cows.
6. a) Generate mucous and absorb nutrients, b) it secretes a substance called serous that helps reduce friction from the muscle movement.

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1. Two from: fruit, vegetables, grasses, meat.
2. a) High. b) Low. c) High for red meat and pork, low for poultry.
3. Dry food: convenient to store, better for animals' teeth, less water content, more carbohydrates. Wet food: easy to store but will spoil once can is opened, more expensive,

fewer carbohydrates, more protein and fat so more palatable for animals, greater water content.

4. Cat.
5. Two from: age, activity levels, pregnant/new mother, weight.

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1. Carbohydrate has not been listed. Adding up the listed constituents give us 56.6%, which means that carbohydrate accounts for 100 - 56.6 = 43.4%.

   Now we calculate the energy for each component for a 100g serving:

   25% protein = 25g of protein in a 100g serving. There are 3.5kcal per gram of energy in protein, so: 25 x 3.5 = 87.5kcal.

   11% fat = 11g of fat. 8.5kcal per gram of energy in fat, so: 11 x 8.5 = 93.5 kcal.

   43.4% carbohydrate = 43.4g of carbohydrate. 3.5kcal per gram of energy in carbohydrate, so: 43.4 x 3.5 = 151.9 kcal.

   All other components do not provide any energy. Total energy = 87.5+93.5+151.9 = **332.9 calories**

2. Dry food: there is 9% moisture which means the remaining 91% accounts for all nutritional content. We need to calculate the percentage of dry food protein and fat in relation to this 91%.

   Protein: 25% / 91% = **27%**

   Fat: 17% / 91% = **19%**

   Wet food: there is 73% moisture, which means the remaining 27% accounts for all nutritional content. We need to calculate the percentage of wet food protein and fat in relation to this 27%.

   Protein: 10% / 27% = **37%**

   Fat: 7% / 27% = **26%**

   The wet food has more protein and fat than the dry food.

3. GE - the total energy present in food. DE - the energy in food that can be extracted through digestion. ME - the percentage of DE that can be used for an animal's daily energy needs.
4. BMR - the amount of energy needed to run the body's basic functions, such as breathing. RER - the amount of energy needed an animal needs when it is resting.
5. RER = (12 x 30)+70 = 360 + 70 = **430 Calories**.
6. Ration = 430 / 333 = **1.3kg**

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1. a) Less, b) More, c) More, d) More, e) Less

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1. Three from: delivery of fresh water, foodstuff, quantities, frequencies, methods of food delivery, alternatives to the plan dependent on food availability.
2. Consumption of food and water, health status, behaviour, frequency and turbidity of urination, frequency and consistency of defecation.
3. Have their been any positive or negative impacts of the plan? Were the aims of the plan, with regard to health, were they met? Were there any unintended consequences of the plan with regard to the animal's health?

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1. Two from: pacing, rocking, tossing the head, moving a limb back and forth, repeated biting or tongue movements.
2. One from: scratching, self-grooming, touching themselves.
3. Two from: chasing own tail, spinning around and around, constant movement, short attention span, impulsive, easily distracted, destructive behaviour.
4. Any from: prolonged periods of sitting, standing or lying down, lack of response to stimuli, withdrawn body language, less vocal than normal.
5. Through leaving urine, leaving other scents by rubbing against objects, bite or scratch marks, vocalisation such as barking or howling.
6. Two from: way to keep clean, helps build social bonds, reduction of stress levels.
7. Dawn and dusk.
8. In oestrus.

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1. Because their ancestors in the wild would establish a larger territory with a natural urge to roam.
2. Any from: clean, dry, correct temperature for species, access to food and water, access to a toilet area, opportunity for exercise, play and intellectual stimulation.

3. Two from: sociable animals being kept alone, solitary animals being kept in groups, incorrect social structures within social groups, introduction of new animals that upset the established hierarchies, incompatible breeds living together, incompatible species (e.g. predator-prey) living together or in close proximity, removal of family members, competing animals during mating

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1. Two from: wolves do not make strong social bonds with humans (not socialised), wolves live in a family unit with a breeding pair (formation of pack in wild), wolf pups will begin to explore earlier than dog pups (wolves need to learn to look after themselves more quickly), wolves are wary of novel situations and people/animals (because they are not used to social situations like dogs), wolves do not look at humans for visual cues (having not spent thousands of years with humans), wolves regurgitate food for pups, wolves rarely bark but do howl (howling helpful for territorial communication).
2. Any from: wild wolves more aggressive with humans, captive wolves less likely to explore due to confinement, no alpha wolf in the wild as they live in family packs whereas an alpha wolf may occur in captivity due to unnatural (not family) social grouping.
3. Two from: both have a core area to their territory, both use scents and markings to communicate but not facial expressions, prefer to run to safety rather than fight if in danger, private and hygienic in their toileting habits, prefers to drink running water, likes an elevated sleeping place.

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1. a) Over a very long period of time, evolution ensures that an animal species becomes adapted to the environment in which they live, because the traits that are best adapted to that environment eventually become widespread amongst the species. b) When resources are scarce, inevitably inter- and intraspecies competition affects the way that animals behave towards each other. This may be increased aggression, changes in territory, or being forced to move.
2. The passing on of traits from parents to children.
3. Evolution is a process whereby heritable characteristics change over many generations. Development consists of the changes that an animal undergoes during its lifetime. Evolution affects how an animal can develop. But whilst evolution ensures traits are very similar across a species, development can be quite different for each individual, depending on their environment and experiences.
4. Darwin's theory states: animals within a species display a range of different heritable characteristics; there is competition for resources which means that some animals in a

species will not survive long enough to reproduce; animals with characteristics that are better suited to their environment are more likely to survive and pass them on to offspring; those successful characteristics are therefore passed on to the next generation, whilst less successful characteristics, that led to animals dying, are less likely to be passed on.

5. A commonly accepted theory is that less aggressive wolves approached humans because the humans provided a source of food. With limited food resources, these friendlier wolves would have gained an advantage over other wolves and this less aggressive trait passed on. Similarly, the wolves who were better able to predict human behaviour would likely benefit more and that trait passed on, so that the ability to read human's facial expressions was developed. In this way, dogs began to be a distinct genetic species from wolves.

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1. Newborn animals suckling for milk, moths flying towards a light source, all reflexes.
2. When an animal attempts different solutions to a problem or scenario. They will learn to avoid repeating behaviour that is causes discomfort and repeat behaviour that rewards them in some way, for instance with food.
3. Songbirds will learn elements of their song by listening to others first.
4. For example: learning to kill prey is a skill that needs to be acquired and whilst animals such as big cats have evolved the tools for killing (teeth, claws, speed and strength) they are often taught how to use these tools by parents. They might copy their parents during the hunt, or be given semi-dead prey to practice with.
5. When a group of animals learn the same skill from each other, but that is distinct from other groups from the same species. E.g. wild rats in Israel learning to strip pine cones, birds in the UK learning to peck open milk bottle lids.

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1. Hormones are chemical messages that are sent around the body to control and regulate bodily functions.
2. Whilst hormones control bodily processes, evolution has ensured that they also influence behaviour related to that process. E.g. testosterone and oestrogen are sex hormones but influence mating behaviour.
3. Fixed action patterns are behaviours that are hard-wired into animals. They require an external stimulus, but once begun the behaviour tends to continue on through a sequence of 'action patterns' regardless of further stimulus. E.g. mating rituals.

4. Another animal might induce behaviours related to: sexual attraction, competition (for food, shelter or mates), fear (e.g. prey), or aggression (e.g. predator).
5. Availability of food, hours of daylight, temperature, weather.

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1. Relates to animals of the same species.
2. Facial expressions, e.g. dogs baring teeth demonstrate aggression. Body language, e.g. cat showing you its belly means it feels comfortable and trusts you.
3. Pheromones are chemicals an animal emits that other animals can sense through their olfactory system. The can communicate the limits of an animal's territory, their availability to mate.
4. Growling, hissing, roaring.
5. It's when animals groom each other. It helps to build and reinforce social structures.

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1. a) the top animal in the group is dominant over all other animals in the group, the second animal in the group dominant over all others except the top animal, and so on.
   b) Anything that is not a linear hierarchy, E.g. an animal 'C' may be submissive to animal 'B' and dominant over 'D'; but 'D' is dominant over 'B'.
2. Wide range of examples, including: growling or other 'warning' vocalisations, staring at the submissive animal until it looks away, assertive body language etc.
3. Any behaviour associated with conflict between two or more animals. Threat, avoidance and aggression.
4. It allows animal to explore their role in the social group with violence as a very last resort. This benefits all parties because if animals resorted to violence straight away then there would be a great deal of unnecessary injuries and deaths.
5. Any behaviour that is associated with conflict between two or more. Examples include allogrooming, play and any other non-aggressive touching.
6. Altruism is when an animal's action reduces its own likelihood of reproductive success whilst increasing the likelihood of another.

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1. This is when an animal (male or female) has more than one mate of the opposite sex, but those mates are exclusive within some social group.
2. This is when one animal mates exclusively with one other animal.
3. When an animal mates indiscriminately with any other animal.
4. Dances, displays, collecting objects, calling and vocalisations, demonstrations of strength.
5. Biparental – more advantageous for both parents to be present i.e. because if one were absent there would be a greater risk of mortality for the young, which would disadvantage the parent because their genetic material would not be passed on. Intensive – more advantageous for one parent to leave to find other mates. From a genetic point of view this is more efficient if one parent can successfully care for the young.
6. Because the chances of survival of a good number of the young are high even with out the parent present. The parents can therefore spend more time pursuing further reproductive success. This tends to be the case for reptiles and fish.
7. A parental bond is an evolutionary development that ensures that young animals that need looking after have their parents present to so.
8. Filial imprinting is when a newborn animal has a hard-wired instinct to make a connection to its parent (usually its mother). This might mean the newborn is hard-wired to assume the first moving object it sees is its parent. Sexual imprinting is when a young animal learns what an appropriate sexual mate should be, i.e. of the correct species.

Unit 303 Animal Health and Husbandry

End of Unit Questions

1) *State two health checks that you could carry out every day (1 mark)*

Acceptable answer(s)	**Guidance**
Visual health check AND one of the following: • Food/water intake (1) Colour/ consistency (faeces)/ frequency (1) • Behaviour (1) aggression/ signs of pain/ quieter/more fearful (1) • Movement/ restrictive/change in posture (1) • Normal gait (1) coordinated/staggering/missing stride (1)	**Do NOT accept just visual health check, must have a type** **ACCEPT type of check with a sign to look for**

2) *List three different pathogenic organisms (3 marks)*

Acceptable answer(s) **ACCEPT up to three different correct pathogenic organisms for each of the following:**	**Guidance** **ACCEPT correct pathogenic example for each of the following from three different pathogen types**
Bacteria/ Bacterium (1)	Campylobacter/ Salmonella/ Pneumonia/ Tuberculosis/ Cat Scratch Fever/ Leptospirosis/ Lyme Disease/ Psittacosis (1)
Virus (1)	Bird flu/ Swine flu/foot and mouth disease/ Rabies/ Bluetongue /Newcastle disease (1)
Fungi/Fungus (1)	Ring worm (1)
Protozoa (1)	Toxoplasmosis/ Avian Malaria (1)
Parasite (1) Endoparasite (1) Ectoparasite	Cheyletiella/ Sarcoptic mange/

(1)	Toxoplasmosis (1)

3a) Name one piece of legislation (1 mark)

Acceptable answer(s)	**Guidance**
One mark for any of the following: 1. The Animal Welfare Act, 2006 (1) 2. The Animal Health and Welfare Act (Scotland), 2006 (1) 3. The Welfare of Animals (Transport) Order, 2006 (1) 4. The Welfare of Animals at Market Order, 1993 (1) 5. The Veterinary Surgeons Act, 1966 (1) 6. The Welfare of Farmed Animals Regulations, 2007 (1) 7. The Welfare of Animals Regulations (Slaughter and Killing), 1999 (1)	**Note Full Name AND correct year must be provided** **Accept any other correct legislation on the gov.uk website** **ACCEPT any other species-specific legislation**

3b) Describe the aim and purpose of this piece of legislation (2 marks)

Acceptable answer(s) **1 mark for aim and 1 mark for purpose**	**Guidance** **ACCEPT any other correct answers for species specific legislation on the gov.uk website**
The Animal Welfare Act, 2006 / The Animal Health and Welfare Act (Scotland), 2006 Aim: Meeting all of the animal's welfare needs (1), Preventing animal suffering (1) Purpose: Owners meeting the 5 animal needs (1), to tackle animal cruelty (1)	**ACCEPT listing out of the five animal needs or any other correct answer**

The Welfare of Animals (Transport) Order, 2006 Aim: Regulating animal transport (1), preventing unnecessary suffering in transport (1) Purpose: Providing the minimum requirements of vertebrate transport (1) Mentions provision/requirements of one of the following: Space (1), food/water (1), length of journey (1), breaks (1), first aid provision (1)	**ACCEPT any other correct answer**
The Welfare of Animals at Market Order, 1993 Aim: regulating animals at markets and shows (1) meeting the welfare of animals at market (1) Purpose: Market operators must work within the regulations to prevent a fine (1), preventing transporting animals which causes injury/ unnecessary suffering (1), ensuring animals at marking have correct provisions of one of the following: food (1), water (1), bedding (1), correct environmental conditions for species (1)	**ACCEPT any other correct answer**
The Veterinary Surgeons Act, 1966 Aim: Regulation of Veterinary surgeons (1), To regulate who can be a registered vet surgeon (1), Purpose: Define procedures that only vets can carry out (1), to ensure only qualified persons carry out medical procedures/ operations/ prescribing (1).	**ACCEPT any other correct answer including updates from 1988 and 2002**
The Welfare of Farmed Animals	**ACCEPT any other correct answer**

Regulations, 2007 Aim: farm animal welfare (1), bringing regulations in line with the EU (1) Purpose: Prevent unnecessary suffering of farmed animals (1), welfare of animals kept for production of wool/food/skin/ or any farming purpose (1), minimum requirements for farm animals (1)	
The Welfare of Animals Regulations (Slaughter and Killing), 1999 Aim: Regulation of slaughterhouses (1), minimum requirements of slaughter (1) Purpose: Prevent unnecessary suffering at slaughter (1), licenced persons carry out slaughter (1)	**ACCEPT any other correct answer**

4a) Explain the difference between notifiable and zoonotic (1 mark)

Acceptable answer(s) **One mark given for this difference**	**Guidance** **Do NOT accept that notifiable diseases cannot be passed to humans**
The main difference is a notifiable disease is legally required to be reported to DEFRA/ Animal Health Agency if suspected (1) All notifiable diseases must be reported if suspected to DEFRA (1) DEFRA must be informed by law if any suspected or confirmed cases of notifiable disease occur (1)	**Reference to DEFRA must be made for mark to given**

4b) State two notifiable diseases (2 marks)

Acceptable answer(s) **One mark for up to two of the following:**	**Guidance**
Rabies (1) Avian flu (1) Swine Flu (1) Bovine Spongiform Encephalopathy (1) Tuberculosis (1) Bluetongue (1) Foot and Mouth (1) Newcastle Disease (1) Equine Infectious Anaemia (1)	**ACCEPT any other correct answer**

4c) Describe the actions that should be taken if an animal is suspected of having a zoonotic disease (4 marks)

Acceptable answer(s) **One mark for statement** **Award up to two marks for statements** **ACCEPT any other correct answer**	**Guidance** **One mark for description** **ACCEPT any other correct description of statement**
Isolate animal (1)	Prevent further spread of the disease (1)/ prevent unnecessary suffering of rest of the group (1)
Contact vet (1)	To carry out testing of the animal (1)/ Confirm symptoms (1)/ Monitor vital signs (1)
Contact DEFRA (1)	Notify them of a possible case (1)/ inform them of a possible outbreak (1)/ Legal duty

	to report (1)
Test animal and herd/ animals who have been in contact (1)	prevent outbreak (1)/ to know how many infected individuals are present (1)
Clean/ disinfect the animals enclosure (1)	prevent other animals from becoming infected (1)/ Limit the spread of the disease (vectors) (1)

5a) State a disease that a rabbit should be vaccinated against (1 mark)

Acceptable answer(s) **One mark for disease**	**Guidance** Do NOT accept just RHD
Myxomatosis Rabbit (Viral) Haemorrhagic Disease 1 (RHD1) Rabbit (Viral) Haemorrhagic Disease 2 (RHD2)	**ACCEPT just Rabbit Haemorrhagic Disease OR Viral Haemorrhagic Disease** **Numbers do NOT have to be present**

5b) When and how often should this vaccination be given (2 marks)

Acceptable answer(s) **One mark for when/ age** **One mark for frequency**	**Guidance**
From 5 weeks old (1), 5- 7 weeks old (1)	ACCEPT Rabbit (Viral) Haemorrhagic Disease 2 (RHD2) separate vaccination from 10 weeks
Yearly booster (1), once a year (1), annually (1), every 12 months (1)	ACCEPT every 6- 12 months

6a) State a disease that is spread through direct transmission (1)

Acceptable answer(s) **One mark for when/ age** **One mark for frequency**	**Guidance**
Cat Scratch Fever (1) Rabies (1) Bird Flu (1) Swine Flu (1) Chlamydia (1) Foot and Mouth (1) Newcastle Disease (1) Canine distemper (1) Feline leukaemia virus (1) Ringworm (1) Salmonella (1)	**ACCEPT any other correct answer**

6b) Describe the implications of a directly transmitted disease (4 marks)

Acceptable answer(s) **One mark for statement** **Award up to two marks for statements** **ACCEPT any other correct answer**	**Guidance** **One mark for description** **ACCEPT any other correct description of statement**
Isolate animal (1)	Prevent further spread of the disease (1)/ prevent unnecessary suffering of rest of the group (1)
Contact vet (1)	To carry out testing of the animal (1)/ Monitor vital signs (1)/ Treatment of the

	animal (1)
Vaccination (1)	Some diseases prevention is the only treatment (1)/ Keep vaccinations up to date (1)
From mother to foetus (1)	A mother may pass the infection to her foetus (1), offspring may need treatment after birth (1)
Clean/ disinfect the animals enclosure (1)	prevent other animals from becoming infected (1)/ Limit the spread of the disease (1)
Sexually transmitted diseases (1)	Do not use this animal for breeding until clear from infection (1)/ Some diseases are passed through bodily fluids during reproduction (1)
Barrier nursing (1)	To prevent spread of the disease (1)/ infection control (1)
PPE (1)	Humans will need to wear gloves/aprons/overshoes/facemasks to prevent spread of the disease (1)
Sourcing of food (1)	Unknown sources of food may be contaminated with disease (1)/ An animal eating a diseased animal may also get infected (1)

7a) State one common vitamin deficiency and one common mineral deficiency (2 marks)

Acceptable answer(s)	**Guidance**
Vitamins: • A (1) • B1 (1)/ Thiamine (1) • B2 (1)/ Riboflavin (1) • B3 (1)/ Niacin (1) • B6 (1)	**ACCEPT any other correct answer** **ACCEPT just the letter for the vitamin**

• B7 (1)/ Biotin • B9 (1)/ Folic Acid (1) • B12 (1)/ Cobalamin (1) • C (1) • D (1) • E (1) • K (1)	
Minerals • Calcium (1) • Copper (1) • Iodine (1) • Iron (1) • Magnesium (1) • Phosphorous (1) • Potassium (1) • Selenium (1) • Sodium (1)	**ACCEPT any other correct answer**

7b) for each one, describe the causes and symptoms of the deficiency (4 marks)

Acceptable answer(s) **One mark for causes per deficiency** **ACCEPT any other correct answer**	**Guidance** **One mark for symptoms per deficiency** **ACCEPT any other correct symptom**
A- Lacking green vegetables in the animal's diet (1)/ Lacking liver from diet (1)/ Lacking dairy from diet (1)	Poor skin/hair/nail condition (1)/reproductive problems (1)/ night blindness (1)
B1 / Thiamine - grains lacking from diet (1)/ Lacking liver from diet (1)	Anorexia (1)/ convulsions (1)/ weakness (1)/ lack of coordinated movement (1)
B2 / Riboflavin- Lacking green vegetables in	Anorexia (1)/ weight loss (1)/ skin/eye

the animal's diet (1)/ Lacking mushrooms from diet (1)/ Lacking dairy from diet (1)	lesions (1)
B3 / Niacin - Lacking meat/offal from diet (1)/ Lacking pulses from diet (1)	Dermatitis (1)/ diarrhoea (1)/ Mouth ulcers (1)
B6 - Lacking liver from diet (1)/ Lacking vegetables from diet (1)/ Lacking grains from diet (1)/ Lacking nuts from diet (1)	Slowed growth (1)/ Poor skin condition (1)/ Fur loss (1)/ convulsions (1)/ Anaemia (1)
B7 / Biotin- from diets high in grains (1)/ Diets high in meat/fish (1)	Fur Loss (1)/ Dermatitis (1)/ diarrhoea (1)
B9 / Folic Acid- Lacking meat from diet (1)/ Lacking green vegetables from diet (1)/ Lacking nuts from diet (1)	Anaemia (1)/ Slowed growth (1)
B12/ Cobalamin- Ruminants not provided cobalt (1)/ Lacking liver/kidney from diet (1)/ Lacking meat/fish from diet (1)/ Lacking dairy from diet (1)	Slowed growth (1)/ Anaemia (1)/ Loss of appetite (1)
C- Primates/Guinea pigs lacking citrus from diets (1)	Joint pain (1)/ Dental problems (1)/ Weakness (1)/ fatigue (1)
D- Lack of sunlight/ artificial sunlight (1)/ Diet lacking grains (1)/ Lacking in fish in diet (1)	Bone weakness (1)/ Growth problems (1)/ laying softer eggs (1)
E- Lacking fish from diet (1)/ Lacking green vegetables from diet (1)/ Lacking grains from diet (1)/ Lacking oils from diet (1)	Fertility problems (1)/ Low reproductive success (1)/ muscle weakness/dystrophy, (1)/ vision problems (1)
K- Lacking green vegetables from diet (1)/ Lacking in fish in diet (1)/ Lacking liver from diet (1)	Slow blood clot time (1)/ Excessive blood loss (1)/ Blood in urine/ faeces (1)/ Bruises easily (1)

Acceptable answer(s) **One mark for causes per deficiency**	**Guidance** **One mark for symptoms per deficiency**

ACCEPT any other correct answer	**ACCEPT any other correct symptom**
Calcium – Diet Lacking in dairy (1)/ Diet lacking in bones (1)	Poor growth (1)/ Skeletal problems (1) claw weakness (1)/ fatigue (1)/ weakness (1)/ muscle spasms (1)
Copper- diet from lower copper plants (1)/ high levels of molybdenum/sulphur in plants in the diet (1)	Hind leg weakness/swayback (1)/ loss of pigment on fur (1)
Iodine- diet from lower iodine plants (1)	Slow growth (1)/ weakness (1)/ enlarged thyroid (1)
Iron- Lacking meat from diet (1)/ Lacking green vegetables from diet (1)/ blood loss (1)/ high sucking blood parasite infection (1)	Anaemia (1)/ Slow growth (1) fatigue (1)/ blood loss (1)
Magnesium – Diarrhoea (1)/ prolonged illness (1)	Joint problems (1)/ Muscle problems (1)/ Problems standing (1)/ anxiousness (1)
Phosphorous - Diarrhoea (1)/ prolonged vomiting (1)	Skeletal problems (1)/ Teeth problems (1)/ Anaemia (1)
Potassium- Diarrhoea (1)/ prolonged vomiting (1)	Loss of muscle mass/muscle dystrophy (1)/ Paralysis (1)/ increased thirst (1)/ frequent urination (1)
Selenium - diet from lower selenium plants (1)	Loss of muscle mass/muscle dystrophy (1)/ Anaemia (1)
Sodium- Diarrhoea (1)/ prolonged vomiting (1)	Increased thirst (1)/ increased heart rate (1)/ Nausea/ vomiting (1) muscle spasms (1)

8) Describe the difference between a pharmacist and a suitably qualified person (2 marks)

Acceptable answer(s) One mark for each difference	Guidance
Pharmacists are unable to prescribe medication (1) whereas a suitably qualified person can under certain conditions (1) Both pharmacists and a suitably qualified persons can supply medications (1) A Pharmacist must be registered by the General Pharmacy Council (1), a suitably qualified person must be registered by Animal Medicines Training Regulatory Authority (1)	**ACCEPT any other correct answer** **ACCEPT correct specific species examples**

9) Describe the actions that should and should not be taken if a cat if suspected of have being poisoned (6 marks)

Acceptable answer(s) One mark for each for statement ACCEPT any other correct answer	Guidance One mark for description ACCEPT any other correct answer
Contact vet/ emergency vet (1)	Treatment should begin as soon as possible (1)/ home treatment should not be attempted (1)
Remove cat from further harm (1)/ Move cat to a safe location (1)	Prevent the cat from ingesting more poison (1)/ Prevent cat from getting more toxin in to the body (1)
Identify poison if possible (1)	Bring a sample/wrapper to vets to aid treatment (1)

Remove poison (1)	Prevent other cats from ingesting the poison (1)
Check airway (1)	Ensure that the airway is clear/ nothing blocking the airway (1)
Put in the recovery position (1)	Check pulse (1)

10) list three considerations that should be taken when working with an unpredictable animal (3 marks)

Acceptable answer(s) **One mark for each consideration**	**Guidance**
Approach: slowly and calmly (1)/ do not approach from blind spot (1) do not corner the animal (1) Be focused on the animal at all times (1)/ be alert (1)/ do not make eye contact (1) Watch for signs of stress (1)/ watch for signs of aggression (1)/ Watch for signs of pain (1) Posture: crouch to the animal's level (1)/ Do not sit down (1)/ make your behaviour not threatening (1) Use a calm/ gentle tone (1) Wear correct protective equipment (1)/ Work within a team if required (1)/ Use correctly handling/restraining (1)	**ACCEPT any other correct answer** **ACCEPT correct specific species examples** **ACCEPT the negative version of consideration**

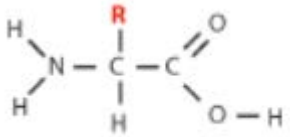
Unit 304 Animal Feeding and Nutrition

End of Unit Questions

1) *List all of the major nutrients, required for a balanced diet (6 marks)*

Accepted answers	**Guidance**
Carbohydrates (1) Fats/lipids (1) Proteins (1) Water (1) Minerals (1) Vitamins (1)	

2) Describe the chemical structure of the amino acid glycine (3 marks)

Accepted answers	**Guidance**
Answer A R group/variable group: hydrogen (1) Carboxyl group (1) Amino group (1) **Or** **Answer B** Hydrogen, Carbon, Oxygen, Nitrogen (2) R group/variable group: hydrogen (1)	**Do NOT Accept a combination of A and B** **A diagram is also acceptable, where R is replaced with H:** 

3) State one function for each of the following parts of the digestive system of a dog (4 marks)

Accepted answers	**Guidance**
Tongue: Taste sensation to brain (1) Moves food around the mouth to help chewing (1)	ACCEPT any other correct answer
Stomach: secretion of pepsin/lipase (1) Muscular contractions to churn the food (1)	**ACCEPT any other correct answer**

Small intestine: Absorption of food molecules via the villi (1) Secretion of maltose/lactose/fructose/erepsin (1)	**ACCEPT any other correct answer**
Large intestine: Absorption of water into the bloodstream (1) Bacteria production of vitamin K (1)	**ACCEPT any other correct answer**

4) Give two examples of animals that are hindgut fermenters (2 marks)

Accepted answers	**Guidance**
Horse (1) Rhino (1) Rabbit (1) Rodents (1) Koalas (1) Tapir (1) Elephant (1) Sloths (1) Zebra (1) Donkey (1)	**ACCEPT any other correct answer**

5) Describe the digestive process that takes place in a ruminant's stomach

Accepted answers **ACCEPT any other correct answer**	**Accepted Description** **ACCEPT any other correct answer**
Bacterial fermentation/ bacteria break down (1)	Breaking down cellulose into smaller parts (1)
Chemical digestion/Enzyme production (1)	Aid breakdown of food into smaller particles (1)
Acid Production (1)	Providing correct environment/acid aid digestion (1)
Absorption (1)	Water entering the bloodstream
Movement of Food to other parts of the	Sends ingested food up oesophagus for

digestive system (1)	further chewing for mechanical digestion (1), sending large particles back to the rumen (1)

6) State four things you need to consider when developing a feeding plan for a household cat (4 marks)

Accepted answers	**Guidance**
Life stage/kitten/juvenile/ geriatric (1) Pregnancy/not pregnant (1) Lactation/supplying milk to kittens (1) Activity level/very active/inactive (1) Health status/recovery from surgery/hypothyroid/diabetes (1) Size/ weight (1)	**ACCEPT any other correct answer**

7) Explain why a farmer may choose prepared animal feed for dairy cow (4 marks)

Accepted answers **ACCEPT any other correct answer** **One mark for statement up to two marks**	**Description** **ACCEPT any other correct answer** **One mark for the linked description up to two marks**
Keeps well/easily stored (1)	can be bought in bulk/ supply for a large number of cows can be housed (1)
Water must be provided (1)	Prepared food is low in water content (1)
Regulated to provide minimum requirements (1)	Ensuring all nutrition needs are met/ Vitamins and minerals provided (1)
Matched to life stage/dairy cow (1)	Nutritional requirements for pregnancy or lactation are higher (1)

8a) Define the gross energy (G.E) of foodstuff (1 mark)

Accepted answers	**Guidance**
The capacity to do the work (1) The amount of Chemical energy that be converted to other forms of energy (1)	**ACCEPT any other correct answer**

8b) Define digestible energy (1 mark)

Accepted answers	**Guidance**
Energy converted to urine and faeces (1)	**ACCEPT any other correct answer**

8c) Define metabolizable energy (ME) (1 mark)

Accepted answers	**Guidance**
Energy to meet the animal's daily energy needs (1) Remaining energy after urine and faecal loss (1) Energy for growth and repair (1)	**ACCEPT any other correct answer**

9) A cow has a dry matter average voluntary intake of 3% of body weight. Calculate the average voluntary intake of a cow weighing:
a) 600 kg (1 mark)

Accepted answers	**Guidance**
3 ÷ 100= 0.03 0.03 x 600 = 18 18kg (1)	**ACCEPT any other correct answer** **Working out does NOT have to be shown**

b) 450 kg (1 mark)

Accepted answers	**Guidance**
3 ÷ 100 = 0.03 0.03 x 450 = 13.5 13.5kg (1)	**ACCEPT any other correct answer** **Working out does NOT have to be shown**

10) Evaluate three factors that should be considered in the feeding plan for a pregnant pig (3 marks)

Accepted answers	**Guidance**
Early pregnancy 1.8x RER (1) Late pregnancy 3x RER (1) Increased nutritional requirements (1) High fibre (1) Increased protein (1) Increased calcium (1)	**ACCEPT any other correct answer**

Unit 305 Animal Behaviour and Communication

End of Unit Questions

1a) List three typical behaviours that a dog might demonstrate (3 marks)

Acceptable answer(s) **One mark for up to three of the following** • Sniffing (1) • Barking (1) • Wagging tail (1) • Licking (1) • Grooming (1) • Play bow (1) • Chasing (1) • Play fighting (1) • Growling (1)	**Guidance** **Award up to three marks** **ACCEPT any other correct answer**

1b) List three atypical behaviours that a dog might demonstrate (3 marks)

Acceptable answer(s) **One mark for up to three of the following** • Pacing (1) • Repeated vocalisation (1) • Repeated biting/licking (1) • Excessive grooming (1) • Excessive scratching (without reason)(1)	**Guidance** **Award up to three marks** **ACCEPT any other correct answer**

2) State three ways in which animals benefit from grooming (3 marks)

Acceptable answer(s)	**Guidance**
One mark for up to three of the following • Removes dirt/ parasites/urine (1) • Socially groom to reinforce social structures (1) • Socially to groom hard to reach places (1) • Touch is relaxing/relieves stress (1)	**Award up to three marks** **ACCEPT any other correct answer** **ACCEPT any species-specific answer**

3. Describe how a cat might demonstrate territorial behaviour (4 marks)

Acceptable answer(s)	**Guidance**
Cats scent mark (1) by rubbing their head/ spraying (1) to mark it as their own (1). It provides information about the cat spraying/scent marking (1) such as age/health status/ reproductive status (1)	**Award up to four marks** **ACCEPT any other correct answer**

4. State three reasons why an animal in a zoo animal might display stereotypical behaviour (3 marks)

Acceptable answer(s)	**Guidance**
One mark for up to three of the following • Lack of foraging opportunities (1) • Poor diet (1) • Lack of space (1)	**Award up to three marks** **ACCEPT any other correct answer**

• Stressful environment (1) • Lack of opportunities to display natural behaviour (1)	**ACCEPT any species-specific answer**

5. Explain four ways in which a domestic dog behaviour differs from a wolf (4 marks)

Acceptable answer(s) **One mark for up to three of the following** • Dogs make human bonds, wolves do not (1) • Wolf puppies start exploring at 2 weeks whereas dogs start exploring at 4 weeks (1) • Wolves are wary of novel situations, dogs can cope with new people/situations (1) • Dogs make eye contact/ look for human body language, wolves do not (1) • Wolves regurgitate food for pups, dogs rarely regurgitate food (1) • Wolves rarely bark but do howl, dogs are more likely to bark than howl (1)	**Guidance** **Award up to four marks** **Both dog and wolf differences must be present for the mark.** **ACCEPT any other correct answer**

6. Explain how the environment can impact an animal's behaviour (2 marks)

Acceptable answer(s) This occurs over many generations (1), to animals evolve/adapt to best suit the environment (1). These adaptations are passed on to the next generation (1) OR	**Guidance** **Award up to two marks** **ACCEPT any other correct answer**

Domesticated animal short term learning such as electric fences (1) with a species example (1)	**ACCEPT a species- specific example such as camel's hump, giraffe's neck (1) with link to how it is suited to the environment (1)**

7. Explain what is meant by heredity of behaviour (3 marks)

Acceptable answer(s)	**Guidance**
Passing of behaviour from parents to offspring (1) to be able to complete a task/behaviour (1). It can be genetically passed (1) or innate behaviour (1).	**Award up to three marks** **ACCEPT any other correct answer** **ACCEPT a species- specific example**

8a). Define what is meant by instinctive behaviour (1 mark)

Acceptable answer(s)	**Guidance**
One mark for one of the following: A behaviour preformed without prior experience (1) A behaviour that is not thought about or developed by training (1) Natural tendency to behave in a certain way (1)	**Award up to one mark** **ACCEPT any other correct answer**

8b) Give one example of instinctive behaviour (1 mark)

Acceptable answer(s)	**Guidance**
One mark for one of the following:	**Award up to one mark**

• Mammals suckling at birth (1) • Moths' attraction to light (1) • Kittens kneading at their mothers (1) • Reflexes (1) • Circadian rhythms/ Sleep patterns (1)	**ACCEPT any other correct answer**

9) Describe how testosterone can influence an animal's behaviour (1 mark)

Acceptable answer(s)	**Guidance**
One mark for one of the following: • Increased aggression/territorial behaviour (1) • Increased interest in mating/mating behaviours (1)	**Award up to one mark** **ACCEPT any other correct answer** **ACCEPT a species- specific example**

10) Describe and give an example of each of the following communication methods (2 marks)
A) vision

Guidance	**Guidance**
Award up to one mark **Acceptable answer(s)** Using the body/body language/feathers/ movements to express meaning/feeling (1) **ACCEPT any other correct answer**	**One mark for one of the following with body part example:** **Acceptable answer(s)** • Alert- tail up/ears forward (1) • Aggressive- Tail up/mouth open/ lips curled/ baring teeth/ hackles raised/ back arched/ ears down (cat or rabbit)/ tail bushy (1) • Fearful- tail down/ ears back/ body lowered/ dilated pupils/ whites of the eye (1) • Happy/playful- tail up/wagging/

	mouth open/ play bow (dogs)/ tail curled (cats)/ expose its belly (cat) (1) **ACCEPT any other correct answer species example**

B) smell (2 marks)

Acceptable answer(s)	**Guidance**
Using chemicals/pheromones to convey information (1) Using urine/faeces/scent glands to: • Mark territory (1) • Signal for mating (1) • Warn off rivals (1) • Lure prey (1) • Direction of food source (1) **ACCEPT any other correct answer**	**Award up to one mark for definition** **One mark for one of the examples, does need how it is spread and the message for the mark** **ACCEPT any other correct answer species example**

11) Explain her meaning of the term linear social hierarchy (1 mark)

Acceptable answer(s)	**Guidance**
One mark for one of the following: A social group with each animal having one place in the social standings (1). A social group that has one top dominant animal and each other member of the group has an order in line, until the bottom animal (1)	**Award up to one mark** **ACCEPT any other correct answer** **ACCEPT a species- specific example such as pecking order in chickens**

12) Two dogs meet each other for the first time. Describe and give two examples of the different ways in which they might display agonistic behaviour (6 marks)

Guidance **Award up to one mark for definition and one for just a behaviour (total of two)** **Acceptable answer(s)** Agnostic behaviour is aggression/conflict/threatening behaviour (1) which can be displayed in a range of ways: • Direct/intense eye contact • Baring of teeth • Growling/hissing • Standing hall/ hackles raise/back arched (1) • Ears forward (dog)/ ears flat back (cat) **ACCEPT any other correct answer**	**Guidance** **One mark for the type of behaviour and one mark for an explanation for both examples (total of four)** **Acceptable answer(s)** • Size- making themselves bigger to look threating (1) so the other animal will retreat (1) • Noise/growling/hissing- frightening the opponent (1) to make them back down (1) • Body language- teeth bared shows they are ready to strike/fight (1) without actually fighting just yet/ increasing the aggression levels (1) • Retreating- turning away/ backing down to the dominate animal (1) showing that the other dog has won (1) • Biting/chasing- escalating the aggressive behaviour (1) when either animal backs down **ACCEPT any other correct answer species example**