

0172-504 APRIL 2017

Level 3 Advanced Technical Diploma in Equine Management (540)

Level 3 Equine Management – Theory Exam (1)

1. Describe **two** design features to be considered when assessing the suitability of a new stable. (2 marks)

Guidance

One mark per correct response as below or any other acceptable answer

- Types of materials used – durability, hygiene, safety, weather, heat/noise insulation
- Size and dimensions – room per horse, shape suitable for free movement
- Flooring – secure, non-slip, level, durable, hygiene
- Ventilation – adequate flow, above not below. Prevent respiratory infection, health & hygiene
- Types of roofs – noise illuminating, durable, secure, good height
- Internal fixtures and fittings – safe, durable, free from sharp edges (injuries) things at appropriate height and distances to prevent injuries or accidents
- Access to other horses/windows
- Access to the stable
- Access to water/automatic waterers

2 Describe the purpose and aims of **one** of the following pieces of legislation:

- Welfare of Animals (Transport) Order 2006
- Horse Passport regulations 2009

(2 marks)

Guidance

Marks available for the correct description of the aims and purpose of either legislation
Information underlined below gives guidance on some of the information that should be covered. Not a model answer.

Welfare of Animals (Transport) Order 2006

The legislation imposes restrictions upon the transport of livestock through the introduction of Authorisations. All commercial transporters of vertebrate animals must possess either a general or a specific authorisation. Specific authorisations apply for the transport of sheep, cattle, goats, pigs and horses for journeys of over 8 hours in road vehicles and for all journeys by sea or air. From July 1998 all staff transporting livestock under a Specific Authorisation must be able to demonstrate that they are competent to handle animals in transport (either through a relevant qualification or through an assessment of practical experience).

Horse Passport regulations 2009

The introduction of Horse Passports will bring the UK in line with laws across the whole of the European Union. The object of the legislation is to ensure that horses, which have been treated with veterinary medicines not authorised for use in food-producing animals cannot be slaughtered for human consumption. If the UK did not comply, we ran the risk of losing 70% of horse medicines. The UK Veterinary authorities have stressed the importance of this measure for horse welfare in the UK.

The Government and the horse industry believe that other benefits will be realised if all horses have a passport. For example, by discouraging the indiscriminate breeding of horses and ponies that may be of low quality or value. Further benefits will be realised from the proposed National Equine Database (NED) that will record details of every horse issued with a passport in the UK. This will improve the ability to monitor disease and prevent outbreaks because information about the numbers of horses and contact

details for owners will be available. It is envisaged that the NED will provide the equine industry with information for enhanced breeding programmes and research.

3 State **five** factors to consider when carrying out a field assessment and explain how these help to ensure a horse's welfare is maximised. (5 marks)

Guidance

One mark for correct explanation, accept any other appropriate answer.

Field

- Size/acreage in relation to number of horses– average 2 acres for the first horse and 1 extra acre for each additional horse.
- Surrounding areas, fencing, gateways and boundaries, including litter – to ensure the fences are substantial enough to prevent the horse from escaping and safe to prevent the horse from injury. Litter can cause injury or potentially be ingested by the horse.
- Drainage and ground conditions – to ensure drainage of land is appropriate to prevent injury, illness and disease.
- Soil type (if applicable) – to assess for any deficiencies in the soil via testing, this can then be taken into account when the field is fertilized.
- Grass coverage suitable to the type of individual horse(s)
- Shelter/shade – horses need adequate shelter from the weather in both hot and cold conditions.
- Water availability – to ensure constant access to fresh clean water.
- Free from poisonous plants and weeds – to ensure the horse does not have the access to plants which could cause illness.
- Flies and other biting insects, effects of the elements both sunshine and rain - not near stagnant water.
- Location of the field – noise, dangerous roads, access to public, bridle ways and footpaths, security

4 Give **two** examples explaining how a horse's body utilises protein to maintain health. (2 marks)

Guidance

One mark for each correct example. If growth & repair are put together and not explained separately then award 1 mark.

- | | |
|--|---|
| • Growth - Protein is termed the building block of the body. It is called this because protein is vital in the maintenance of body tissue, including growth and development. | 1 |
| • Repair - Protein is termed the building block of the body. It is called this because protein is vital in the maintenance of body tissue, including the repair of cells and tissues. | 1 |
| • Synthesis of hormones - Protein is involved in the creation of some hormones. These substances help control body functions that involve the interaction of several organs. | 1 |
| • Enzymes - Enzymes are proteins that increase the rate of chemical reactions in the body. In fact, most of the necessary chemical reactions in the body would not efficiently proceed without enzymes. | 1 |
| • Antibodies - Protein forms antibodies that help prevent infection, illness and disease. These proteins identify and assist in destroying antigens such as bacteria and viruses. They often work in conjunction with the other immune system cells. | 1 |
| • Transportation and storage molecules - Protein is a major element in transportation of certain molecules. For example, haemoglobin is a protein that transports oxygen throughout the body. Protein is also sometimes used to store certain molecules. | 1 |
| • Energy - Protein is a source of energy. If the horse consumes more protein than it needs for body tissue maintenance and other necessary functions, it will be used it for energy. If it is not needed due to sufficient intake of other energy sources such as carbohydrates, the protein will be used to create fat and becomes part of fat cells. | 1 |
| • Pregnant and/or lactating mares | 1 |

5 A horse with an infectious disease has been in isolation for two weeks but has not come into any physical contact with other horses on the yard. However, the infection has spread to a number of different horses. Explain how this could have occurred. (5 marks)

Guidance

Candidates may identify that the spread of infection is NOT due to direct transmission and give an explanation to why this is not a possibility by correctly identifying what direct transmission is.

(Direct – direct physical contact between an infected horse and a susceptible horse)

Candidates may identify a number of different possible routes of transmission that could have occurred in the yard.

Students may relate each route of disease transmission in the context of the management of the horses on the yard.

For example, airborne transmission may have occurred due to the infectious disease travelling suspended in the air from the isolated horse to the rest of the horses on the yard.

Another example of the correct routes being written in context is that indirect transmission may have occurred via yard staff or infected equipment from the infected horse to the rest of the yard.

To achieve each full mark, the transmission route **must** be explained.

- Indirect - occurs when there is no direct horse-to-horse contact. Contact occurs from a reservoir on contaminated surfaces or objects. [1]
- Airborne – A horse is contaminated with infectious agents which can travel long distances and remain suspended in the air for an extended period of time. [1]
- Fomites - Fomite transmission refers to the transmission of infectious diseases by objects. [1] Fomite transmission occurs when viruses or bacteria remain on surfaces and cause infections. [1]
- Inhalation – Respiratory droplets containing disease causing agents act as vectors between an infected horse and a susceptible horse. [1]
- Ingestion- caused when a horse ingests water/food which is contaminated with disease causing agents. [1]
- Environment – Different types of environments e.g. hot, damp conditions can cause some disease causing agents to thrive and lead to disease in horses. [1]
- Vector – Diseases which are transmitted by insects, especially in insects which suck blood. [1]

6. Describe the procedures for dealing with notification in the case of a horse that has been diagnosed with Equine Infectious Anaemia. (3 marks)

Guidance

Up to three marks for a correct explanation from below. Don't accept DEFRA or Government.

Procedure for dealing with notification

- Isolation [1]
- Report it to your nearest Animal and Plant Health Agency (APHA) office even if you only suspect that an animal may be affected. [1]
- You are legally obliged to report all notifiable diseases. [1]
- APHA vets will investigate and test the animals. [1]
- The vet may put restrictions on the premises. [1]
- If certain diseases are suspected (particularly foot and mouth disease or African horse sickness) a temporary control zone will be introduced around your premises. [1]
- Restrictions remain in place until the investigation is complete and disease is ruled out/eradicated. [1]

7 Explain the importance of frequently assessing the condition of a horse's hoof, and give an example of when to seek assistance from a vet or farrier. (3 marks)

Guidance

Up to two marks for the explanation and a further one mark for a correct example

'No foot no horse' - feet are very susceptible to ailments and injuries/problems. If they can't stand they can't have a normal life, health will quickly deteriorate.

Minor issues can become very detrimental very quickly

Any foot trimming or shoeing must be done by qualified farrier, frequent assessment allows for timely visits.

2

Assistance for:

- Thrush – treatment by farrier / vet
- Hoof abscess – treatment by farrier / vet
- Puncture wound – find item is imbedded – possible x-ray, antibiotics
- Problems with shoes or trimming – illegal to touch, only trained people are allowed (farriers/vets)
- Cracks – involves touching the shoe/hoof
- Laminitis – internal structure of the hoof, has to be treated with specialist shoes & painkillers
- Lameness – get a diagnosis
- Heat or pain – sign of infection or injury
- Strong pulse in the coronary band – infection/disorder

1
1
1
1
1
1
1
1
1

Or other relevant answer.

8 Explain why it is important to update a horse's health records on an ongoing basis. (4 marks)

Guidance

- Understanding the horses' normal health patterns (feeding, fitness, response to any treatment etc) will allow for a potential horse health problem to be quickly spotted and treated effectively. [1]
- Will allow for the timely and correct administration of routine preventative procedures e.g. wormers and vaccinations. Maintains health and welfare and for travel/competitions. [1]
- Allow for timely and correct farrier treatment to maintain health of horses' hooves & treat problems quickly. [1]
- If the horses' regular veterinarian is unavailable and you have to call another vet, the records will provide a reference to the horses' normal vital signs. [1]
- Historic records are important to track the horse's previous health and behavioural status. [1]
- Selling horse and passing on information to the next owner. [1]

Or any other appropriate answer

9 State the main function for **two** of the following nutrients:

- carbohydrates
- vitamins
- lipids / fats
- water

(2 marks)

Guidance

*One mark for the correct function of **each** nutrient*

- **Carbohydrate** - create energy (ATP) [1]
- **Vitamin** – body processes i.e. chemical and metabolic reactions [1]
- **Lipids / fats** – storage / insulation / energy [1]

- **Water** – hydration, cell function (chemical and metabolic reactions, transport of nutrients, body temperature regulation, elimination of waste) [1]

10 Describe **five** factors that should be considered when designing a feeding plan for a 5 year old horse.

(5 marks)

Guidance

One mark for the correct description of each factor

If candidates only talk about feed and don't relate it to the horse then no marks can be awarded.

type of answers

- Life stage –horses of different ages require different nutritional intake levels. [1]
- Condition – the weight of the horse will need to be taken into account when designing a feeding plan to maintain ensure/maintain optimal condition. [1]
- Work – the work a horse does will affect the amount of energy that is needed to be incorporated into the diet and the types of rider. [1]
- Health status – Horses that are ill or recuperating from illness and injury will require different nutritional requirements in the diet. [1]
- Temperament (physiology) – utilisation of energy for different types of temperament. [1]
- Reproductive status – mare / stallion. [1]
- Type of horse – gender / breed. [1]
- Environment and daily routine – stable / grass kept, feeding routine. [1]

11 Explain why digestibility is an important factor to consider when feeding a horse roughage.

(2 marks)

Guidance

One mark available for each of the following points (guideline answers)

Digestibility means the percentage of a foodstuff taken into the digestive tract that is absorbed into the body.

The more digestible the more nutrients the horse will absorb and that leads to a healthier horse.

Horses that are overweight or prone to laminitis sometimes require roughage of a lower digestibility which helps to maintain and reduce weight.

If digestibility is linked to colic then no mark should be awarded for that.

Information that might be included;

- Hay is comprised of long fibrous stems of conserved grass.
- Different hay (grass types) has different levels of palatability and digestibility.
- Generally hay has a lower levels of digestibility because of the increased content of structural carbohydrates (cellulose, hemicellulose)
- High levels of lignin in conserved forages such as hay reduce the level of digestibility and therefore overall nutrient availability to the horse.
- Different types of grass used to make hay can have different levels of nutrients which can make some hays higher in energy and nutrients than others.
- Hays are comprised of high levels of structural carbohydrates.
- The content of protein, vitamins, minerals and lipase can vary in hay dependant on grass type. This can make hay variable in overall nutrient consistency.
- The nutritional content and properties of hay provide slow release energy.
- Any other acceptable correct answer not included here.

12 Explain how a horse's instinctive behaviour helps them to survive in the natural environment. (5 marks)

Guidance

One mark for the correct identification of each of the following, up to five marks.

Accept other appropriate answers

- | | |
|--|---|
| • Herd behaviour – horses are social animal which live in large groups in the wild consisting of mares, foals, young stock and a stallion.
Provides safety from predators and increases chances of survival | 1 |
| • Hierarchy/herd maintenance behaviour – each herd has a social hierarchy which includes a dominant mare. The pecking order reduces aggression and promote social cohesion within the group. Leaders drive the herd to safety and new sources of food, survival increases | 1 |
| • Social behaviour - horses in herd constantly interact with each to maintain and strengthen social bonds other using various methods of communication (vocal, body language, touch, mutual grooming etc). Strengthens socials bonds, happy herd, stays together & prevents fighting | 1 |
| • Body language and communication - horses use various methods of communication including vocal, touch, mutual grooming, physical contact. Horses can read each other's body language and gestures for example ear position, tail position. | 1 |
| • Fight or flight response – The horse has evolved as a prey animal and the fight or flight response is the horses way of protecting itself from predators. Its primary defence in the wild is to flee from predators but if cornered the horse will fight for example with kicking, biting, bucking and striking. | 1 |
| • Reproductive behaviour – During the breeding season the stallion will mate with the mares in the herd. During the breeding season the stallion often becomes more aggressive in the protection on the mares in the herd. | 1 |
| • Roaming behaviours – horses instance to roam is linked to the need to consume large amount of forage to ensure adequate nutritional intake. In the wild the herd will roam over vast areas. | 1 |
| • Trickle feeding behaviours – horses constantly graze eating small amounts of forage over long periods of time. | 1 |

13 Identify **two** anatomical adaptations that have evolved in horses for **one** of the following:

- digestive tract
- limbs

(2 marks)

Guidance

One mark each for each correct adaptation of the following (guideline answers) or any other correct answer, don't except stronger, bigger or hoof as a separate answer.

Digestive tract adaptations

- The stomach is small (size of a rugby ball). [1]
- The caecum and large intestine is large in size. [1]
- The large intestine digests fibre from the diet. [1]
- The horses' large intestine houses bacteria and other microorganisms. [1]
- High crowned teeth. [1]
- The surface of the molars have grinding surfaces. [1]
- Straight grazing teeth lined with cement. [1]

Limb adaptation to a single toe

- Limbs became longer. [1]
- The horses' multi-toed feet, , evolved into single-toed hooves. [1]
- The bones of the horse's limb grew longer. [1]
- Leg bones became fused with no rotation. [1]

14a Explain the importance of welfare and ethics when managing stereotypic behaviour in horses. (3 marks)

14b Describe the potential ethical and welfare issues when using one of the following restrictive techniques for the management of stereotypic behaviour in horses.

- cribbing collar
 - anti-weave grid
- (3 marks)

Guidance

14a – up to three marks for a correct explanation of the importance.

Learners may identify that physically preventing stereotypical behaviour is a welfare issue as horses undertake these behaviours as a coping mechanism to the domestic environment

Ethical considerations would be to minimise or illuminate the horses need to perform these behaviours by making the domestic environment as close to the natural environment as possible. The use of management techniques such as increased turnout and ad lib forage would potentially reduce the need for the horses to perform stereotypic behaviours without physical restraint.

Learners may identify the point that if horses are allowed to exhibit natural behaviours they may feel less stressed, therefore reduce the occurrence of stereotypic behaviours

14b – up to three marks for a correct description of the ethical and welfare issue for either technique

Learners may describe the different techniques used for the management of stereotypic behaviours and may explain the difference between preventative techniques (cribbing collars and anti-weave grid) and other management techniques (e.g. ad lib forage and increased turnout)

cribbing collars anti-weave grid

physical restraint by use of a cribbing collar can cause irritation/injury to the skin and/or could restrict breathing (long term damage/ infections potentially could be a result)

stopping horse from cribbing can cause long term behavioural damage (no outlet for the stress)

physically stops the horse from weaving over the door can result in horses weaving in the stable and in other places. E.g. in the field, during transportation.

stopping horse from weaving can cause long term behavioural damage (no outlet for the stress)

Physically restraining horses may cause higher levels of stress overall as the horses are unable to perform stereotypic behaviours.

Physically restraining horses is therefore a welfare concern and ethical concern. Learners may relate this to the 5 animal needs

Weaving grill could cause an injury if the horse doesn't stop weaving

15 Discuss the potential impacts to the health and welfare of horses kept in a stabled environment with no planned daily routine. (12 marks)

Guidance

Band 1: (0 – 4) marks; basic explanation showing some knowledge of the impacts to health and welfare, including some technical terms. Superficial information given with little or no connection between the overall needs of the horse and its welfare. Little or no justification for impacts given.

Band 2: (5-8) clear explanation showing knowledge and understanding of the impacts to health and welfare, including correct use of most technical terms. Detailed information given demonstrating some connection between the overall needs of the horse and its welfare. Some justifications for impacts given with reasonable detail.

Band 3: (9-12) marks; comprehensive explanation showing accurate knowledge of the impacts to health and welfare, correct use of all technical terms. Thorough information given demonstrating a detailed connection between the overall needs of the horse and its welfare. Clear and accurate justification for impacts given.

Indicative content for answer – to aid band grading

Band 1

- Knowledge of horses' daily routine and why it is important for health
- Identifying impact of keeping horses in a stable
- Identifying impact of lack of routine

Band 2

- Relating daily routines to specific nutritional and behavioural needs of the horse.
- Discuss the physical and psychological health impacts of a lack of routine in the horse – linking to signs of health.
- Can discuss different management systems e.g. field kept if no routine and the benefits of this system on welfare over stable kept.
- Can bring in information regarding the five animal needs relating to welfare. (Band 2)

Band 3

- Link this to knowledge of the domestic environment and the evolution of the horse as a trickle feeding prey species.
- Can bring in welfare organisations and their importance to horse welfare and educating/helping animals whose welfare is compromised.

(Total 60 marks)