

HOSA Veterinary Science Written Test Plan – What to Study!!!!

Anatomy & Physiology (23%) –

- ◇ *Intro to Veterinary Science* - Chapters 1-11
- ◇ Review Animal Science notes – Anatomy & Physiology, Reproduction, Digestion

Diseases & Disease Prevention (15%) –

- ◇ *Intro to Veterinary Science* - Chapters 14, 18

Emergency & Critical Care (12%) –

- ◇ Recognized by the AVMA in the late 1980s
- ◇ Emergency Care – an action directed toward assessment, treatment, and stabilization of a patient with an urgent medical problem
- ◇ Critical Care – ongoing treatment of a patient with a life-threatening or potentially life-threatening illness or injury whose condition is likely to change on a moment-to-moment or hour-to-hour basis
- ◇ Facility & Equipment:
 - Adequate space
 - O2 source (close)
 - Good lighting
 - Centralized & stocked with equipment
 - “Crash Cart” – rollaway cart stocked with various emergency supplies
 - Drawer 1 – Airway (Forceps, endotracheal tubes, laryngoscopes)
 - Drawer 2 – Venous Access (Catheters, suture material, saline flush)
 - Drawer 3 – Emergency Drugs (Dosage chart, needles, syringes, drugs)
 - Drawer 4 – Respiratory (Tracheotomy tube, chest tubes)
 - Drawer 5 – IV Fluids (Fluid bags, infusor bags, pump sets)
 - Miscellaneous Equipment – blood pressure monitor, ECG, anesthetic machine, ventilator, thermometer, etc)
- ◇ Hospital Care –
 - Triage – the prioritization of treatment based on medical need; typically the job of the vet tech
 - Initial Evaluation – Assessment & Therapy
 - Primary Survey & Resuscitation – the ABCDEs of emergency care; once the problem(s) is identified, resuscitative action should begin immediately
 - A (Airway) – Assessed via visualization, palpation, & auscultation (listening); check airway for obstructions; upper obstruction with loud and squeaky sounds, lower obstruction with wheezes or prolonged expiration
 - B (Breathing) - patient should be breathing with ease, 10 to 15 rpm

- C (Circulation) – Assessed via visualization, palpation, & auscultation; signs of inadequate perfusion (blood flow) include an abnormal level of consciousness, increased heart rate, changing pulse rate, pale mucous membranes, and decreased appendage temperatures
 - D (Dysfunction/Disability) – of the Nervous System, assessed via visualization & palpation; pupillary light reflex, response to pain, rigidity vs flaccidity of limbs
 - E (Examination) – Rapid, whole-body examination, check lacerations and/or bruising
- ◇ Emergencies –
- Cardiac Arrest (Cardiopulmonary Arrest) – signs include absence of heart beat, lack of palpable pulse, apnea, absence of bleeding, loss of consciousness, pupillary dilatation
 - ABCs – Airway (check airway before beginning), Breathing (using your breath or a ventilator, Circulation/Cardiac Compressions (animal is in lateral recumbency with left side up at the point where chest and elbow meet)
 - Heart Disease – Signs include pale or cyanotic mucous membranes, dull lung sounds on auscultation, crackles/wheezes, labored breathing, poor pulse, ascites (fluid accumulation in the peritoneum (lower/side abdomen))

Principles of Sx (12%) –

- ◇ *Intro to Veterinary Science* – Chapter 19

Basic Nutrients (10%) –

- ◇ *Intro to Veterinary Science* – Chapter 12
- ◇ Review Animal Science notes – Nutrient section

Clinical Practice (10%) –

- ◇ *Intro to Veterinary Science* – Review Clinical Practice section in each chapter listed on this sheet

Animal Behavior (6%) –

- ◇ Behavior is any act done by an animal; for a behavior to occur, there must be a stimulus (an internal or external change that stimulates the nervous and/or endocrine systems)
- ◇ Ethology – the study of animal behavior
- Believed to be both:
 - Genetically programmed (instinctive)
 - Learned (conditioned response)
 - Classic – association of stimuli at the same time & same place (i.e. dinner time for a dog)
 - Operant – association of a particular activity with punishment or a reward (i.e. going to the bathroom outside & getting a treat)

- Reinforcement –
 - Positive - an immediate pleasant occurrence that follows a behavior
 - Negative – an immediate unpleasant occurrence used to create a desired behavior (i.e. electric fence to learn boundaries)
 - Punishment –
 - Positive – adding an undesirable occurrence to decrease a behavior (i.e. shock collars, citronella sprays when barking)
 - Negative – removing a desirable occurrence to decrease a behavior (i.e. not acknowledging a dog that jumps on you)
- Most trainers use a combination of Positive Reinforcement & Negative Punishment
- ◇ Imprinting – the pattern of behaviors that bonds animals and humans in early life
- ◇ 3 – 12 weeks old is the most important time period for behavior development – the animal learns about its environment, how to interact with others, and what not to fear
 - Animals not socialized during this time can develop lifelong phobias
- ◇ Preventing behavior problems –
 - Aggression – defined as the a behavior that is intended to harm another individual; the most common problem for which owners seek guidance
 - Agnostic – behaviors that animals show in social conflict situations
 - Submission, avoidance, escaping, offensive & defensive threats, and offensive & defensive aggression
 - Decrease behaviors through castration of males and socialization during their developmental time period
 - Dogs – aggression towards people is the most common complaint
 - Cats –aggression towards other cats is the most common complaint
 - Destruction of belongings –
 - Dogs – digging, chewing, tearing, scratching, moving objects, & getting into the trash; usually the symptomatic manifestation of other problems (separation anxiety, noise phobias)
 - Provide appealing toys and plenty of outside play time
 - Cats – scratching is used mostly for territorial marking (visual & olfactory marks), stretches muscles & tendons in the legs, and removes worn outer sheaths from the claws
 - Provide cats with scratching posts and/or objects
 - House soiling –
 - Dogs – take outside frequently, don't leave the puppy alone, crate train (also to decrease destructive behaviors)

- Reward soiling outside with praise, petting, and possibly a treat
- Physical punishment often causes additional problems
- Cats – keep the litter box in close proximity to the area that the kitten stays and clean as well as semi-private
 - Change the litter 1x/week
 - 1 litter box per cat in the house

Zoonoses (6%) –

◇ *Intro to Veterinary Science* – Chapter 17

Veterinary Careers (6%) –

◇ *Intro to Veterinary Science* – Addendum B