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 –
  o 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)
  o 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
  o 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