

1) Sensitivity can be calculated as follows :

- \* A. Number of true positives / Number who actually have disease
- B. Number of true positives / Number of true negatives
- C. The proportion of patients with negative test results who are correctly diagnosed
- D. Number of True positives / Total number of positives

2) The positive predictive value is the proportion of patients with positive test results who are correctly diagnosed

- \* A. True
- B. False

3) Specificity of a test is the proportion of true positives among all positives returned by a test

- \* A. False
- B. True

4) Predictive value of a negative test is the proportion of patients with negative test results who are correctly diagnosed

- A. False
- \* B. True

5) The natural history of a disease includes factors relating to

- A. time, genetics and environment
- B. host, agent and time
- \* C. time, host and environment
- D. genetics, environment and agent

6) Incidence can be described as the proportion of "events of interest" at a point in time

- A. True
- \* B. False

7) The proportion of "events of interest" at a point in time correlates with the concept of prevalence

- \* A. True
- B. False

8) The mortality rate for a disease compares the number of individuals who died due to that disease with the entire at-risk population

- \* A. True
- B. False

9) The case fatality rate of X can be computed by which equation

- \* A. Number died of X / Total Number sick with X
- B. Number died of X / Total in population
- C. Number sick with X / Total in population
- D. None of the above

10) A herd of 100 calves have 20 lame ones. Of these 20, 10 are lame due to crocodile attacks. This means that the proportional morbidity rate for crocodile attack lameness is

- \* A. 50%
- B. 20%
- C. 10%
- D. None of the above

11) When a chronic disease exists in a population, prevalence is usually far greater than incidence

- \* A. True
- B. False

12) When a short-term disease exists in a population, prevalence is usually far greater than incidence

- A. True
- \* B. False

13) Of 100 lambs born, 5 were stillborn while another 8 were killed by crocodiles. The crude mortality rate is

- A. 8%
- B. 6.5%
- C. 5%
- \* D. 13%

14) Measurement of performance often uses cut-off points, unlike measurement of disease.

- \* A. False
- B. True

15) A right skewed distribution has a longer tail on the right. Also, the median will be less than the average (mean).

- \* A. True
- B. False

16) The SMART approach to setting goals [in Health Management ... or life :) ] is that they should be (single answer)

- A. Time-framed
- B. Measurable
- C. Achievable
- D. Specific
- \* E. All of the above

- 17) In the health management context, when a herd is termed naive, it means
- A. all individuals in the herd belong to the same sex
  - \* B. it has not been exposed to a pathogen
  - C. the average weight is less than 75% of market weight
  - D. the average animal has not yet been weaned
- 18) The best way to test the hypothesis that disease is more likely in young than in old animals is to stratify the herd by age
- \* A. True
  - B. False
- 19) Age is an important host factor because
- A. of the all-in all-out method
  - B. it is easy to stratify by age
  - \* C. disease susceptibility is frequently associated with age
  - D. a number of operations segregate animals by age
- 20) When the balance between host and agent favours the agent, the disease often becomes
- \* A. epidemic
  - B. pandemic
  - C. stable in the host
  - D. endemic
- 21) A zoonotic disease is one that is
- A. shared by a number of species of animals, but not humans
  - B. common in zoos
  - \* C. shared by animals and humans
  - D. likely to cause an epidemic
- 22) A sufficient cause of disease is a combination of agent, host and environment factors that tips the scale in favor of the agent thus resulting in disease.
- A. False
  - \* B. True
- 23) Diseases that have a short duration tend to have a low prevalence:incidence ratio.
- \* A. True
  - B. False
- 24) The Reed-Frost model of infectious disease spread uses the hypothesis that a vaccine offers 100% efficacy
- A. True
  - \* B. False

25) Artificial insemination is NOT used in the Avian industry, except in

- A. Layer chicken breeders
- B. Broiler chicken breeders
- \* C. Turkeys
- D. Broiler chicken grandparent stock

26) In Broiler breeder barns, birds move around on the floor. Stacked nest boxes are where eggs are laid. "Floor eggs" in a broiler breeder barn are an indication of

- A. Too few roosters
- \* B. Not enough nest boxes
- C. Too much space, too few birds
- D. Calcium deficiency

27) Broiler chicken take how long to reach market weight?

- A. 10-13 weeks
- B. 8-10 weeks
- \* C. 5-6 weeks
- D. 14-18 weeks

28) Reptiles require specie-specific diets which are usually difficult to provide

- A. False
- \* B. True

29) The most common reason for presentation of exotic pets to veterinarians is for husbandry related disease issues.

- A. False
- \* B. True

30) The major issue restricting the expansion of swine units in Ontario is

- A. Low profitability
- \* B. Manure management regulations
- C. Inhospitability of the northern regions of Ontario
- D. Reduced demand for pork

31) The market value of a pig is based on (multiple answers)

- \* A. Back fat
- B. Age
- C. Sex
- \* D. Carcass weight
- \* E. Contract price

32) A barrow is a

- \* A. A male swine that was castrated at an early age
- B. A male swine
- C. Something that came between Desmond and Molly
- D. A male goat
- E. A castrated male sheep

33) At approximately what age is a pig expected to reach market weight?

- A. 32-38 weeks
- B. 18-24 weeks
- \* C. 26-32 weeks
- D. 12-18 weeks

34) If a sow has had 3 litters, she is parity

- A. 2
- B. 6
- \* C. 3
- D. 4

35) Sow crates are often considered psychologically less desirable for the sow when compared to a pen. One advantage of a sow crate is that sows can be fed individually.

- A. False
- \* B. True

36) If a farrowing unit has good productivity, approximately what is the minimum % of pigs born alive that will remain alive at weaning?

- A. 85%
- B. 80%
- \* C. 92%
- D. 98%

37) The following are some environmental factors that help reduce pre-weaning mortality (multiple answers)

- A. Clip needle teeth
- B. Iron injections to piglets
- \* C. Use farrowing crates
- \* D. Heat lamps in creep area

38) What is the most important way of reducing tail and ear biting?

- \* A. Ensure sufficient access to feed and water
- B. Dock tails
- C. Clip needle teeth
- D. Paint tails and ears with a foul-tasting tincture

39) Increasing the number of hours of light to stimulate increased egg production is a common practice

- \* A. True
- B. False

40) Excessive feather pecking in birds is thought to be related to

- \* A. Frustrated foraging behaviour
- B. Irritation due to mites
- C. A natural cannibalistic instinct
- D. Too little space for each bird

41) When discussing disease, important host factors are (multiple answers)

- A. Temperature
- B. Lighting conditions
- \* C. Sex
- \* D. Age
- \* E. Breed
- F. Feed

42) A disease that exists in a population of animals at a predictable rate of occurrence is usually

- \* A. Endemic
- B. Pandemic
- C. Epidemic
- D. None of the above

43) A farmer mentions that there were 2 pig deaths per 100 pigs at risk per month over the past year. She is referring to

- A. Specificity
- B. Prevalence
- \* C. Incidence
- D. Sensitivity

44) Leghorns are a breed of

- A. Turkey
- \* B. Layer chicken
- C. Meat chicken
- D. Cattle

45) Layer hen breeders produce male and female chicks. Sex identification usually occurs how many days after hatching?

- A. 5
- B. 7
- C. 3
- \* D. 1

46) Osteoporosis is a major issue in the egg-laying industry. Which of the following plays the most critical role in preventing it?

- \* A. Pre-lay diet
- B. Density (overcrowding)
- C. Size of egg
- D. Lighting (because it triggers Vit. D production)

47) One of the best ways of ensuring bio-security is to follow the all in, all out method

- \* A. True
- B. False

48) If a farmer finds newborn piglets lying one on top of the other, it is usually a sign of

- A. Creep area too hot
- \* B. Creep area too cold
- C. Nothing. Piglets like to cuddle
- D. The sow is rejecting the piglets

49) Needle teeth are clipped from newborn piglets

- \* A. To reduce skin infections in litter mates
- B. To avoid future dentition problems
- C. To protect other piglets during the grower stage
- D. None of the above

50) Supply management is used in the Poultry industry to

- A. Limit imports
- B. Maintain prices in the domestic market
- \* C. Regulate domestic supply
- D. Balance domestic and international supply

51) The principles of health management are best encapsulated in the

- A. 6 Ts
- B. 3 Rs
- C. 4 Qs
- \* D. 5 Ws

52) Vaccination helps herd health primarily by

- \* A. Reducing the number of susceptible individuals
- B. Killing the agent before an epidemic takes control
- C. Ensuring that none in the herd get the disease
- D. None of the above

53) An attempt to eliminate an agent of disease from a farm makes most sense

- A. If the agent is susceptible
- B. If the herd has never been exposed to it
- C. If it is feasible and economic to do so
- \* D. If the agent needs the host to survive

54) With regards to livestock, clinical tests are best applied when prior probability of disease is

- \* A. 40-60%
- B. 10-20%
- C. Negligible
- D. Greater than 90%

55) Carrying out multiple (different) tests in parallel usually

- A. Decreases sensitivity, decreases specificity
- B. Decreases sensitivity, increases specificity
- \* C. Increases sensitivity, decreases specificity
- D. Increases sensitivity, increases specificity

56) Productivity (for example, in terms of milk production) tends to affect social status of animals within the herd

- \* A. False
- B. True

57) When considering environmental factors that affect disease, toxins would be considered a biotic factor

- A. True
- \* B. False

58) Selenium deficiency is common to the Great Lakes region. This would be a "Macro" environmental factor

- \* A. True
- B. False

59) When discussing disease susceptibility, it is quite uncommon for host factors to interact with environmental factors

- A. True
- \* B. False

60) The key defining characteristic of a zoonotic disease is that it infects multiple species of animals

- A. True
- \* B. False

61) A disease will never switch from being endemic to becoming epidemic.

- A. True
- \* B. False

62) Risk rate is synonymous with prevalence

- A. True
- \* B. False

63) When a population is dynamic, a simplified approach to calculating incidence or prevalence is to use the average population at risk.

- \* A. True
- B. False

64) When a population is relatively stable and the risk period (period between measurements) is short, one usually computes incidence by using the average population at risk.

- A. True
- \* B. False

65) When the risk period (period between measurements) is long, one usually computes incidence by using the average population at risk.

- \* A. True
- B. False

66) Proportional morbidity is a good indicator of population health

- A. True
- \* B. False

67) The crude mortality rate measures deaths due to any causes

- A. False
- \* B. True

68) The mortality rate for a disease compares the number of individuals who died due to that disease with the entire at-risk population

- A. False
- \* B. True

69) Herd turnover is often used as a synonym for Removal rate

- A. False
- \* B. True

70) The gestation period for pigs is (in days)

- A. 100-105
- B. 95-98
- \* C. 114-117
- D. 130-134

71) Pre-weaning mortality of well-raised piglets is about

- A. 3%
- B. 10%
- \* C. 8%
- D. 15%

72) Which of the following offspring are usually born anemic?

- A. Goats
- B. Dogs
- C. Sheep
- \* D. Pigs

73) The biggest advantage of weaning piglets early is

- A. Piglets grow quicker to market weight
- \* B. More litters per year are possible
- C. Pre-weaning mortality reduces
- D. The sow undergoes less stress

74) Pork production is divided into the preweaned, 'starter' and 'grower/finisher' stages. The main difference is in the ration. Starter rations have less protein than grower/finisher rations.

- A. True
- \* B. False

75) With respect to pigs, the starter period lasts from weaning to what age

- \* A. 90 days
- B. 50 days
- C. 70 days
- D. 110 days

76) The reproductive lifespan of a sow, after reaching sexual maturity, usually runs for how many years?

- A. 9-10
- B. 1-2
- C. 12-14
- \* D. 3-4

77) A sow's estrous cycle, in days, is

- A. 23-28
- B. 14-18
- \* C. 16-22
- D. 25-32

78) In chicken, an egg takes how long to hatch (in days) :

- A. 30
- B. 38
- C. 15
- \* D. 21

79) Broilers are heavier than roasters

- \* A. False
- B. True

80) Broilers are usually given hormones and antibiotics to improve growth

- A. True
- \* B. False

- 81) Since broiler chicken are so hardy, biosecurity is not a huge issue in their raising
- A. True
  - \* B. False
- 82) Turkeys are usually marketed at a weight of 5 to 15 kg
- A. False
  - \* B. True
- 83) Meat birds are usually caught and slaughtered manually when they reach an appropriate weight
- \* A. False
  - B. True
- 84) Ontogeny refers to
- A. the process of modification of behaviour by fear
  - B. imprinting of the newborn
  - \* C. the development of behaviour over an individual's lifetime
  - D. a cancer growth of the amygdala
- 85) A Modal action pattern
- \* A. Refers to stereotyped sequences of behaviour
  - B. Is an internal variable that has a number of effects on behaviour
  - C. Can be broken down into the Appetitive phase and the Consummatory phase
  - D. Refers to single bits of behaviour
- 86) The appetitive phase is part of
- \* A. Motivation
  - B. Modal action pattern
  - C. Reflex
  - D. None of the above
- 87) Redirected behaviour usually happens
- A. When a stimulus changes
  - \* B. During situations of conflicting motivations
  - C. Due to a single external stimulus
  - D. As part of a Modal action pattern
- 88) Emotional responses and feelings are usually
- \* A. Rooted in lower-level processes
  - B. Under conscious control
  - C. Triggered in the Hippocampus
  - D. None of the above

89) With respect to Ontogeny (development of behaviour), a "Critical" period differs from a "Sensitive" period as follows

- A. Critical periods typically occur during adolescence
- B. Critical periods have larger impacts on future behaviour
- C. Sensitive periods have larger impacts on future behaviour
- \* D. Critical periods are short and precise, whereas Sensitive periods are longer and more flexible

90) The neonatal, transitional, socialization and juvenile periods are all important in development. The most important period from the behavioural point of view is

- \* A. Socialization
- B. Neonatal
- C. Juvenile
- D. Transitional

91) Destructive behaviour in a juvenile dog (under 18 months) is often a result of separation anxiety

- \* A. True
- B. False

92) Bite inhibition in dogs is

- \* A. the development of the ability to control the amount of force exerted during biting
- B. a behavioural method that teaches dogs not to bite humans
- C. a type of muzzle
- D. None of the above

93) Imprint training is a technique to

- A. Reduce separation anxiety
- B. Ensure a newborn animal imprints adequately with its mother
- \* C. Improve handling of foals by interacting with them within the postnatal period
- D. None of the above

94) Coprophagy is

- A. Avoidance, for defecation, of locations previously defecated on
- \* B. Eating of faeces
- C. Selection, for defecation, of locations previously defecated on
- D. Covering of faeces by kicking up dirt

95) The Brambell Report (1965) developed the Five Freedoms as guiding principles for human animal care. One of the freedoms is the freedom to perform natural behaviour

- A. False
- \* B. True

96) Dr. Temple Grandin, an autistic person, is a world renowned professional designer of humane livestock facilities. A large amount of her research is directed towards which type of animal

- A. Goats
- B. Poultry
- C. Sheep
- \* D. Cattle

97) Sentience is/are

- A. dangerous killer programs
- \* B. the capacity to experience subjective states, such as pleasure and suffering
- C. the state of consciousness
- D. none of the above
- E. all of the above

98) There are two basic approaches to animal welfare assessment. They are Input-based methods and Output-based methods. Focus on mortality/morbidity data is an input-based measure.

- \* A. False
- B. True

99) Niko Tinbergen published a paper in 1963 that outlined several approaches on how to answer the question of "why does the animal perform this behaviour?" Which of the following statements regarding this is false?

- \* A. Phylogeny type questions ask how does behaviour develop throughout an animal's lifetime.
- B. There are two major types of approaches to answering the above question: Ultimate questions and proximate questions.
- C. Proximate questions are more relevant than ultimate questions for understanding how behaviour problems arise in specific animals.
- D. Ultimate questions explore the evolutionary aspects of animal behaviour.
- E. Function type questions ask how does behaviour improve an animal's biological fitness.

100) It is possible to quantify and measure animal behaviour.

- A. False
- \* B. True

101) Domesticated animals have been called "genetically tame" due to genetic differences that make them more suited to living with humans than their wild counterparts. Which of the following is NOT a characteristic that makes domesticated animals more suited to live with humans?

- A. Neoteny (retention, by adults, of traits previously seen only in juveniles)
- B. Gregarious, i.e. live in social groups
- C. Polygamy
- D. Accepting of novel food
- \* E. Seasonal reproduction

102) It is possible to select for tamer individuals in a wild animal population to make a "genetically tame" version of that species.

- A. False
- \* B. True

103) Which of the following statements is TRUE of social groups?

- A. Social stress is highest for individuals at the bottom of the hierarchy
- B. Social hierarchies are always linear
- \* C. Social hierarchies may become unstable if new individuals join the group
- D. Individual recognition is very important, even for very large groups
- E. Social hierarchies are usually stable when group members are similar in size and in age

104) Meta-communication involves communications between two different social groups.

- \* A. False
- B. True

105) How do genes code behaviour?

- A. By coding proteins that affect an animal's physical and sensory capabilities
- B. By coding proteins associated with the nervous system and coding for neuron density and predetermined synaptic connections
- C. By coding proteins associated with hormones and neurotransmitters
- \* D. All of the above

106) Hormones can "prime" the brain for certain types of behaviour.

- A. False
- \* B. True

107) Hormones are used for communication between cells inside an animal's body, but are not used to communicate between animals.

- A. True
- \* B. False

108) What behaviour is NOT associated with the hormone, testosterone?

- \* A. Affiliative behaviour
- B. Aggression
- C. Sexual behaviour
- D. Singing and territorial behaviour
- E. All of these behaviours are mediated by testosterone

109) With respect to disease, which of these best describes the 'herd effect'?

- A. A gilt coming from another farm has to be culled because it has arrived with an infectious agent already present
- B. A flock of sheep are turned out to pasture, and 10% acquire an infection from the environment
- C. A cow acquires an agent from its external environment, is quarantined from the herd, but still dies
- \* D. A goat acquires a transmissible disease sub-clinically, and spreads it to the herd, where it manifests and causes a 30% mortality

110) Which of these is the correct definition of "infectious"?

- A. The ability to manifest clinical signs in a host
- \* B. The ability to invade a host
- C. The ability to kill a host
- D. The ability to spread from host to host

111) If an animal is classified as 'diseased' due to an agent, what is true about it?

- A. the agent is present, but the host is not manifesting clinical signs
- \* B. the agent is present and the host is manifesting clinical signs
- C. the host is in the final stages of the disease and will soon die if not treated
- D. the agent is actively spreading from animal to animal

112) Selective culling is which of the following methods of disease control?

- A. Control
- \* B. Eliminate
- C. Prevent
- D. None of the above

113) Which of the following methods of disease control 'maintains the disease at a economically acceptable level'?

- \* A. Control
- B. Mitigation
- C. Eliminate
- D. Prevent

114) Which of the following best represents the Reed Frost model?

- A. The number of susceptible animals will decline with time
- \* B. The number of infected animals is dependant on the number of susceptible individuals times the probability of adequate agent-transfer contact time between animals
- C. The number of infected animals will rise exponentially proportional to the gross number of agent present times the number of susceptible individuals
- D. The number of infected animals will rise with the length of contact between animals times the number of infected individuals

115) Under which of the following circumstances is vaccination most likely to be employed?

- A. Number of infected animals is high
- B. Annual vaccine cost per animal is high
- C. Probability of vaccine reaction is high
- \* D. Expected incidence is high

116) What is metaphylaxis?

- A. Mass vaccination at birth, such as seen in chickens
- \* B. Therapeutic levels of antibiotics to treat a subclinical disease
- C. Vaccination of all animals when one animal presents with a disease
- D. None of the above

117) Which of these pets would you recommend to a client with small children looking for an inexpensive pet?

- A. Parrot
- B. Crocodile
- C. Macaw
- D. Cockatoo
- \* E. Budgie

118) What temperature should eggs stay at if the breeder wishes to prevent embryo development?

- \* A. 50 F
- B. 70 F
- C. 30 C
- D. 50 C

119) Approximately what weight would you expect a healthy broiler chicken raised in Canada to attain by 42 days of age?

- A. 1.0-1.2 kg
- B. 2.5-3.0 kg
- C. 0.5-0.8 kg
- \* D. 1.8-2.0 kg

120) Which of the following is vaccinated against while the chicks are still in the shell?

- A. Irritable bowel syndrome
- B. Infectious bronchitis
- C. Avian encephalopathy
- D. Transmissible gastroenteritis
- \* E. Marek's disease

121) Which of the following is not a standard method of vaccinating chicks?

- A. Eye drop vaccination
- B. Spray vaccination
- \* C. IV vaccination
- D. Water vaccination

- 122) Which of the following is a side effect of the rapid growth in broiler chickens?
- A. Decreased egg production
  - B. Leg myopathy / deformity
  - C. Ascites
  - D. Feather-loss syndrome
  - \* E. B and C
- 123) Which method of killing chickens is most prevalent in North America?
- A. Argon Gas
  - \* B. Electrical Stunning
  - C. Asphyxiation
  - D. Spiking
- 124) On average, how long does it take a chicken to form an egg?
- A. 20 hours
  - B. 48 hours
  - \* C. 26 hours
  - D. 30 hours
- 125) Which of these is not an economical factor to a producer?
- A. Egg quality
  - B. Egg numbers
  - C. Egg size
  - \* D. Egg taste
- 126) Why is HACCP important?
- A. It sets standards for egg quality
  - B. It sets standards for scientific research
  - C. It sets standards for fair treatment of poultry
  - \* D. It sets standards for biosecurity
- 127) An animal with BSE is diagnosed as positive for BSE if
- A. animal shows signs of temperament change (i.e. increased aggression, avoidance of humans)
  - B. animal is showing neurological signs such as inability to rise/move hind limbs, appears blind, lack of co-ordination, change in posture
  - C. decreased milk production and weight loss although animal has increased appetite
  - D. there is hypersensitivity to sensory stimuli
  - E. all of the above
  - \* F. none of the above
- 128) The Reed-Frost model of Disease deals with disease spread and how it relates to host, environment, and time.
- A. True
  - \* B. False

129) In which of the following situations can disease risk be most accurately compared for a select group of individuals for a particular disease agent?

- A. across all age and production groups within a barn
- \* B. between littermates within the same barn
- C. between nonlittermates within the same barn
- D. between littermates on different farms

130) The strategies used for clinical diagnosing are:

- A. Pattern recognition
- B. Use of algorithms
- C. Complete or exhaustive
- D. Hypothetico-deductive
- \* E. All of the above

131) What are the problems in determining whether an agent is responsible for the disease?

- A. The distribution of the organism in the environment can be known, but the agent may be present in a host carrier animal.
- B. We can easily determine whether the agent is in the host or the environment but do not know its pathogenicity
- \* C. The distribution of the organism in the environment may NOT be known, and the agent may be present in the host carrier animal

132) Which of the following is the single most important step taken to avoid BSE in the food supply?

- \* A. removal of specified risk material (SRM) from at-risk individuals
- B. import restriction from BSE positive countries
- C. ruminant-to-ruminant feed ban
- D. surveillance program

133) Descriptive epidemiology is important because it

- A. Helps us understand what diseases/factors are common for host and environment
- B. Assists us in preventing disease
- C. Helpful when investigating a disease outbreak
- D. Is a useful business practice tool for understanding clients and animals
- \* E. All of the above

134) Components of the host factors of disease include

- A. Physiologic states of the animal
- B. Genetic factors
- C. Intact animal vs. spayed or castrated
- \* D. All of the above
- E. None of the above

135) Is there always a clear distinction between the impact of host factors versus those of environmental factors?

- A. Yes
- \* B. No

136) The rate at which a disease may spread through a herd depends on

- A. The number of susceptible individuals
- B. The environment
- C. The frequency of adequate contact between individuals
- D. Both a) and b)
- \* E. Both a) and c)

137) Which of the following is NOT true?

- A. Boosting herd immunity can decrease the risk of disease
- B. Herd immunity means that a group of animals collectively have a resistance to infection
- C. Host Factors almost always influence disease risk
- \* D. There is always a clear distinction between the impact of host factors and that of environmental factors
- E. The risk of disease can be diminished by limiting contact (decreasing animal density)

138) When analyzing disease outbreaks, one should consider host factors before considering environmental factors

- A. False
- \* B. True

139) With respect to disease, a combination of factors that constitute sufficient cause

- \* A. Always produce a disease
- B. Are not elements of Host, Agent or Environment factors
- C. Are usually a single factor (determinant)
- D. None of the above
- E. All of the above

140) Which if the following is true?

- \* A. An endemic disease suggests a long-term balance between agent and host that makes the disease incidence predictable
- B. Epidemics occurs when there is a balance between host and agent
- C. Sporadic disease has no agent and therefore disease does not occur
- D. An epidemic disease is one in which the agent is present but disease occurs infrequently and is not readily predictable
- E. None of the above is true

141) When considering environmental factors, it is necessary to consider:

- A. Micro Environment
- B. Local Environment
- C. Macro Environment
- \* D. All of the above
- E. None of the above

142) The reason for clipping a piglet's needle teeth is/are:

- A. to protect the piglets from harming one another
- B. to encourage the sow to provide more milk to her piglets
- C. to prevent the sow's udder from being damaged by her piglets
- \* D. all of the above
- E. none of the above

143) What is the most widely consumed meat worldwide?

- A. beef
- B. turkey
- C. fish
- D. chicken
- \* E. pork

144) Which of the following statements is FALSE?

- A. The gestation length for sows is ~115 days
- \* B. A supply management system ensures both a market and a profit for pig farmers
- C. The optimal market weight for pigs is 110 kg
- D. Biosecurity is a major concern for pig farmers
- E. Most pig farms in Ontario are family owned and operated

145) Which of the following is TRUE with regards to pig production?

- A. A continuous flow system will minimize the risk of disease
- B. As the number of pig farms is decreasing, so is the total production overall
- C. The best place to give injection for pigs is in the rump, as the large mass of muscle makes it less painful for the piglet
- D. A pre-weaning mortality greater than 3% is unacceptable and may indicate a possible problem
- \* E. Pigs are most susceptible to disease during the nursery stage

146) Artificial Insemination (AI) is often used for swine because:

- A. fewer boars have to be kept on the farm
- B. a single boar can ejaculate up to 500mL of semen, and this is enough to impregnate up to 30 sows by AI
- C. the best possible genetic stock can be used
- D. boars can only be used up to 3 times per week in natural breeding
- \* E. all of the above are true

147) All of the following occur during "piglet processing" except:

- A. iron administration
- B. needle teeth are clipped
- C. males are castrated
- D. tails are docked
- \* E. blood sample is taken

148) A castrated male pig is called a:

- A. Gilt
- \* B. Barrow
- C. Boar
- D. Buck
- E. Steer

149) What does the term "parity" refer to?

- A. the disease status of an animal
- B. when babies leave their mother to live on their own
- C. the high-pitched squeal that pigs make
- \* D. the number of times a sow has farrowed
- E. the fact that some species choose one mate for life

150) The "gold standard" is

- A. The least expensive test available
- \* B. The best available test available
- C. The most expensive test available
- D. The test that provides the most value for money

151) With respect to sensitivity, specificity, positive predictive value and negative predictive value, which statement is true?

- A. The manufacturer of the test normally indicates the positive predictive value of the test
- \* B. One usually knows, beforehand, the sensitivity and specificity of a test
- C. Sensitivity is directly related to the specificity : that is, if you know one, the other can be calculated
- D. The positive predictive value is directly related to the negative predictive value : that is, if you know one, the other can be calculated

152) A screening test is usually a cheap test that identifies candidates that require further testing (to confirm disease in them). The ideal qualities of a screening test are :

- A. Reasonable sensitivity and specificity, quick
- B. High specificity and high sensitivity, quick
- C. Very high specificity, reasonable sensitivity, quick
- \* D. Very high sensitivity, reasonable specificity (>80%), quick

153) Maximum information is gained from a test when the prior probability of disease is around

- A. 1%
- B. 10%
- \* C. 50%
- D. 90%

154) When referring to "test accuracy", one is taking into account

- A. Sensitivity
- B. Either sensitivity or specificity, depending on the prevalence
- \* C. Sensitivity and specificity
- D. Specificity

155) Test precision refers to

- \* A. The ability to return the same answer in multiple trials on the same sample
- B. Sensitivity, specificity and prevalence
- C. The correctness of the test
- D. Specificity

156) Test "cut points" are related to

- A. Modifying a result based on "expected prevalence"
- B. Adjusting for sensitivity and specificity
- \* C. Tests that return continuous results
- D. Making decisions based on prevalence

157) Sequential testing is carried out by

- A. Running a second test all individuals
- \* B. Running a second test on the ones that test positive to the first one
- C. Running a second test on the ones that test negative to the first one
- D. Running a second test only if more than a pre-determined % (usually 1-5%) are positive on the first one

158) In the first test of a sequential test on 553 animals, 45 were actually diseased and tested positive, 8 were actually diseased but tested negative, 10 were healthy but tested positive and 490 were healthy and tested negative. The 2nd test would be carried out on how many animals?

- A. 553
- B. 490
- \* C. 55
- D. 53

159) In the first test of a sequential test on 500 animals, 50 tested positive. In the 2nd test, 25 of the 50 tested positive. The overall sensitivity and specificity

- A. 10% and 97.5%
- B. 50% and 97.5%
- \* C. cannot be determined
- D. 50% and 90%

160) Sometimes 2 different tests (for the same disease) are conducted on each individual at the same time. These results can be interpreted in

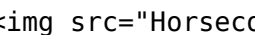
- A. series or sequential
- B. sequentially only
- \* C. series or parallel
- D. sequentially or in parallel

161) The gestation period for horses is

- A. 280-300
- B. 115-120
- C. 380-400
- \* D. 320-350 days

162) With respect to points of a horse, which of the following statements is FALSE?

- A. A ergot grows from the rear underside of the fetlock joint
- B. The knee on the forelimb is equivalent to the hock of the hindlimb
- C. The withers is the bump of thoracic vertebral spine
- D. The gaskin is on the hind limb
- \* E. The loin and croup are on the dorsal back with the croup just ahead of the loin

163)  This color would best be described as

- A. Roan
- B. Black
- C. Dark bay
- \* D. Bay
- E. Chestnut

164) Which of the following horse breed do not have races specifically for their own breed?

- \* A. Appaloosa
- B. Arabian
- C. Thoroughbred
- D. Quarterhorse
- E. Standardbred

165) Which of the following statements with regards to relatively recent statistics on horses is INCORRECT?

- A. Quarter Horses represented the largest percentage (39.5%) of horses by breed in all regions.
- B. Over three-quarters (78.6%) of equine operations had five or fewer equidae in 1997
- C. The primary use of equidae on 66.8% of operations was pleasure.
- \* D. Racetracks accounted for 10.1 percent of the equidae and about 10 percent of operations.

166) Which of the following statements with regards to the horse industry is INCORRECT?

- A. Most horses that show are maintained specifically for that purpose
- B. The Western sector involves Trail, Endurance, Driving, 4H Clubs, Rodeo Games, etc
- \* C. Racing is the largest spectator sport in North America and is a multibillion dollar industry, having the highest financial turnover of all horse sports, with racehorses accounting for about 5-8% of total sport horses
- D. The English sector involves Field Hunting, Show Jumping, Dressage, etc
- E. The English sector tends to use Thoroughbred horses, Thoroughbred crosses, European breeds (warmbloods) and grade horses.
- F. The Western sector favours Quarter Horses, Paints and Appaloosas
- G. As many as 90% of horses may be classified as pleasure horses

167) Which of the following statements with regards to the horse industry activity is INCORRECT?

- \* A. Racing is the largest single sector in the horse industry
- B. Racing is responsible for the direct employment of approximately 60,000 people in Ontario alone. This figure exceeds that for several other prominent industries such as steel manufacturing, the auto industry and airlines.
- C. Canada is an important producing country for many breeds, and is a major exporter of horses to the US. Ontario-bred Standardbreds, for example, are exported globally, as are Ontario sires.

168) Which of the following statements with respect to weaning of horses is INCORRECT?

- \* A. Weaning is commenced by introducing the foal to creep feed
- B. The name for the animal is weanling (up to 1 yr)
- C. Forced weaning involves removing all foals from mothers at the same time
- D. Weaning usually occurs between 4 and 6 months.
- E. A horse born on May 23 2006 is a weanling till Jan 1 2007, when it is known as a yearling till Jan 1 2007
- F. Subtraction weaning is when 1 mare is removed from paddock every few days

169) Which statement with regards to bovine dairy management is INCORRECT?

- A. Heifers first bred around 14 mos. They should be at least 350 kgs & 125 cms at withers.
- B. Breeding is usually by artificial insemination
- C. Bull calves are usually slaughtered at 6 mos for veal
- D. Weaning of dairy calves occurs at 6-8 weeks well before beef calves (6-8 <b>mos</b>)
- E. The ideal (gold standard) calving interval is 12-13 mos
- \* F. The age of the dam at first calving is, ideally, 24 mos and the gestation period, unlike beef cows, is 300-320 days

170) With regards to the dairy cows, which of the following statements is INCORRECT?

- A. During early lactation (4th month), the body score may drop to 2.5, but it gradually gets back to around 3-3.5 at 180 days and 3.5-4 at 270 days. Low producers are fatter.
- B. About 1.5 lactations are required to recoup growing costs. Most cows are milked for at least 3 lactations.
- C. When drying cows off, the aim is to dry cows off 50 to 55 days, and never less than 40 days, before the expected calving date.
- \* D. Dairy cows remain in a dairy herd, on average, for around 8-10 years.
- E. Lactation period is about 305 days with peak production at 30-60 days.

171) With respect to the dairy marketplace, which of the following statements is FALSE?

A. The Canadian dairy industry operates on a "dairy year" basis which runs from August 1 to July 31 of the following year.

B. Newborn calves are currently worth around \$200 for a bull and up to \$1,000 for a heifer although dairy cows and bulls which are desired as breeding stock may be priced in the tens of thousands of dollars.

C. About two-thirds of milk production is used in the manufacture of butter, cheese, yogurt and ice cream

\* D. Like the pork industry, Canada's dairy sector functions under a supply management system based on planned domestic production, administered pricing and dairy product import controls.

E. There are about a million dairy cows in Canada, with most of them in Ontario and Quebec

F. The per capita consumption of milk (84 kg) is gradually reducing while that of cream (8.4 kg) has posted an 80% increase from 20 years ago

G. By far, the main dairy breed is Holstein

172) In the context of Canada's dairy industry, which of the following terms has been INCORRECTLY described?

A. SCC - Somatic cell count

B. CDC - Canadian Dairy Commission

\* C. BCA - British Cow Association

D. TMR - Total mixed ration

E. DMI - Dry Matter Intake

173) With respect to mastitis, which of the following statements is INCORRECT?

A. New infections are the highest during the first two weeks of the dry period and the last two weeks of the dry period.

B. About 95% of all infections are caused by *Streptococcus agalactiae*, *Staphylococcus aureus*, *Streptococcus dysgalactiae*, *Streptococcus uberis*, and *Escherichia coli*.

\* C. Mastitis organisms enter the body when poorly kept feed is fed to lactating cows

D. It is the costliest disease of the dairy industry today. It can decrease total milk production by 15 to 20% - as much as \$200 per cow annually.

E. The California Mastitis Test (CMT) is a rapid, accurate, cow-side test to help determine somatic cell counts (SCC) in a specific cow.