પ્રશ્નપુસ્તિકા ક્રમાંક

M

સમય :120 મિનિટ	Time : 120 Minutes
કુલ પ્રશ્નો : 200	Total Ques. : 200
કુલ ગુણ : 200	Total Marks : 200

This Question Booklet Contains 52 Printed Pages

ઉમેદવારનો Roll બેઠક નંબર No:

BVJ

ઉમેદવારોને સૂચના

સૂચના ન મળે ત્યાં સુધી પ્રશ્નપુસ્તિકા ખોલવી નહીં

(1) પ્રત્યેક પ્રશ્નનો ઉત્તર A, B, C અને D પૈકી કોઈ એક છે અને ઉમેદવાર જો જવાબ ન આપવા માંગતા હોય તો તેમના માટે વિકલ્પ E OMR ઉત્તરપત્રમાં આપેલ છે. તમારે બધાજ પ્રશ્નોના ઉત્તર આપવા ફરજીયાત છે. તમારે આ સાથે **અલગ** OMR **ઉત્તરપત્રમાં જ ઉત્તર આપવાના છે.**

ઉદાહરણ તરીકે:

ભારતના રાષ્ટ્રપિતા તરીકે કોણ ઓળખાય છે?

(A) સરદાર પટેલ (B) સુભાષચંદ્ર બોઝ

(C) મહાત્મા ગાંધી (D) વિનોબા ભાવે

ઉત્તરપત્ર (OMR SHEET) માં

(A) (B) ● (D) (E)

ઉપર્યુક્ત ઉદાહરણનો જવાબ "C" છે. આથી "C" નું વર્તુળ કાળું (encode) કરેલ છે. સાચી અને ખોટી પદ્ધતિથી વર્તુળ ઘાટું કરવા બાબતની સૂચના OMR ની પાછળ આપેલ છે જેની નોંધ લેવી

(2) આ પાના ઉપર આપનો રોલ નંબર લખો.

(3) બધા જ પ્રશ્નો પૂરેપૂરા છપાયેલા છે કે કેમ તેની પ્રથમ ખાતરી કરી લો. જો પ્રશ્નો પૂરા છપાયા ન હોય અથવા કોઈ પૃષ્ઠ ફાટેલું હોય કે કોઈ પૃષ્ઠ સામેલ ન હોય અથવા તો અન્ય કોઈ ક્ષતિ જણાય તો તરત જ પ્રશ્નપુસ્તિકા નિરીક્ષક પાસેથી અચૂક બદલાવી લેવી.

ઉમેદવારને OMR ઉત્તરપત્ર મળ્યા બાદ જો તેઓ દ્વારા તેનો નાશ કરવામાં આવશે કે ગુમ કરવામાં આવશે તો તે ઉમેદવાર ગેરલાયક ઠેરાવવામાં આવશે તેમજ ભવિષ્યની પરીક્ષાઓમાં બેસવા માટે પ્રતિબંધ મુકવા ઉપરાંત ફોજદારી ગુનાને પણ પાત્ર બનશે.

(4) પરીક્ષા શરૂ થયેથી પૂરી થાય તે દરમ્યાન ઉમેદવાર પરીક્ષાર્થીએ પરીક્ષાખંડ છોડવાની મનાઈ છે.

(5) ઉમેદવારે પોતાના બેઠક ક્રમાંકની પ્રશ્નપુસ્તિકા અને OMR ઉત્તરપત્ર મળેલ છે તેની ખાતરી કરી લેવી અન્યથા ખંડ નિરીક્ષકનું તરત જ ધ્યાન દોરવું. ઉમેદવારને OMR ઉત્તરપત્ર મળે કે તરત જ તેમાં નિયત કરેલ જગ્યાએ પોતાનો બેઠક નંબર સ્વચ્છ અક્ષરે લખવાનો રહેશે. તેમજ બેઠક ક્રમાંક નીચે આપેલ વર્તુળ પણ ઘાટું કરવાનું રહેશે. મળેલ પ્રશ્નપત્રની સીરીઝ નિયત જગ્યાએ લખીને તેની નીચે તે સીરીઝ સામે આપેલ વર્તુળ પણ ઘાટું કરવાનું રહેશે. લખેલી વિગતો અને ઘાટું કરેલ વર્તુળની વિગતો યોગ્ય રીતે ભરાયેલ છે તેની ખાતરી કરી લેવી.

(6) પ્રત્યેક સાચા જવાબદીઠ 1 (એક) ગુણ મળવાપાત્ર થશે. આયોગ દ્વારા ગુણાંકન પદ્ધતિમાં માઈનસ પદ્ધતિ દાખલ કરવામાં આવી છે. જે મુજબ-

(i) પ્રત્યેક ખોટા જવાબદીઠ, ખાલી છોડેલ જવાબદીઠ તથા છેકછાક, ખોટી પદ્ધતિથી એક કરતાં વધુ વિકલ્પ દર્શાવેલ જવાબદીઠ 0.3 ગુણ કાપવામાં આવશે. પરંતુ જો ઉમેદવાર જવાબ આપવા માંગતા ન હોય અને વિકલ્પ (E) ઘાટું કરશે તો 0.3 ગુણ કાપવામાં આવશે નહીં.

(ii) આન્સર કી ફાઈનલ કરતી વખતે જો આયોગ દ્વારા એક પ્રશ્નના એકથી વધુ વિકલ્પો સાચા છે તેમ જાહેર કરવામાં આવે ત્યારે સાચા વિકલ્પ પૈકી કોઈપણ જવાબ માટે એક (1) ગુણ મળવાપાત્ર થશે.

(7) OMR ઉત્તરપત્રમાં નિશ્ચિત જગ્યા સિવાય ઉમેદવારે પોતાનો બેઠક ક્રમાંક લખવો નહીં તથા પોતાની ઓળખ છતી થાય તેવી નામ સહિતની અન્ય કોઈ પણ પ્રકારની નિશાની કરવાની સખત મનાઈ છે. તેમ છતાં પણ કોઈ પણ નિશાની કે ઓળખ માલૂમ પડશે તો તેને સંપૂર્ણ ગેરશિસ્ત ગણવામાં આવશે અને પરીક્ષા માટે ગેરલાયક ગણવામાં આવશે.

(8) OMR ઉત્તરપત્રના પ્રમાણપત્રમાં ઉમેદવાર તથા નિરીક્ષક બંનેની વાદળી / કાળી બોલપોઈન્ટ પેનથી સહી તથા ઉમેદવારના ડાબા હાથના અંગુઠાનું નિશાન ફરજિયાત છે. ઉમેદવારની સહી તથા ડાબા હાથના અંગુઠાના નિશાન વિનાની OMR ઉત્તરપત્રવાળા ઉમેદવાર ગેરલાયક ઠરશે.

(9) પરીક્ષા દરમ્યાન ઉમેદવાર પાસેથી કોઈ પણ સાહિત્ય, ગાઇડ, માર્ગદર્શિકા, કાપલી, સ્લીપો, અન્ય હસ્તલિખિત કે પ્રિન્ટેડ સાહિત્ય, મોબાઇલ ફોન, પેજર, કેલ્ક્યુલેટર કે અન્ય વીજાણુ ઉપકરણો હોવાનું જણાશે તો ઉમેદવારને ગેરલાયક ગણવામાં આવશે. તેમજ ભવિષ્યની પરીક્ષાઓમાં બેસવા માટે પ્રતિબંધ મુકવા પણ પગલાં લેવાશે.

(10) ચાલુ પરીક્ષા દરમ્યાન અંદરોઅંદર ગુસપુસ કરવી, અવાજ કરવો કે નિરીક્ષકની સૂચનાઓનું ઉલ્લંઘન કરવું તે ગેરશિસ્ત ગણાશે. કોઇ પણ પ્રકારની ગેરશિસ્ત બદલ પગલા લેવાશે.

(11) ઉમેદવારે વાદળી / કાળી બોલપોઈન્ટ પેનથી ઉત્તરો લખવાના છે. અન્ય શાહી કે પેન કે પેન્સિલ તથા સફેદ શાહીનો ઉપયોગ કરી શકશે નહીં તથા સફેદ શાહી (White Ink), બ્લેડ કે રબ્બરથી કે અન્ય કોઈ પણ રીતે કરેલા સુધારા માન્ય ગણાશે નહીં.

(12) આ જવાબવહી કમ્પ્યુટર દ્વારા તપાસવાની હોવાથી તે વળે, ફાટે કે બગડે નહીં તેની ખાસ કાળજી રાખવી તથા જવાબ વહીની ઘડી વાળવી નહીં.

(13) પ્રશ્નપુસ્તિકામાં કોરી જગ્યામાં રફકામ કરવું. તે માટે અલગ કાગળ આપવામાં આવશે નહીં. જવાબવહી માં કઈ પણ રફવર્ક કરવું નહીં. પ્રશ્નપુસ્તિકામાં જવાબો લખવાની મનાઈ છે. પરીક્ષાખંડ છોડતા પૂર્વે જવાબવહી (OMR Answer Sheet) નિરીક્ષકને સોંપવી, જ્યારે પ્રશ્નપુસ્તિકા ઉમેદવારો લઈ જઈ શકશે.

પરીક્ષા પૂરી થયા બાદ OMR ઉત્તરપત્ર વર્ગ નિરીક્ષકને સોંપ્યા બાદ જ વર્ગખંડ છોડવાનો રહેશે. તેમ કરવામાં કસૂર થયેથી ઉમેદવારને ગેરલાયક ઠેરવવામાં આવશે. તે ભવિષ્યની પરીક્ષાઓમાં બેસવા માટે પ્રતિબંધ મૂકવા તથા ફોજદારી પગલા લેવાને પણ પાત્ર થશે.

M

1. The type of selection in which the selected animal(s) does not contribute to the estimate that forms basis of selection is

(A) Family selection
(B) Sib selection
(C) Individual selection
(D) Within family selection

2. The top three Milk producing states of India (as per BAHS report 2025) in order are

1. Rajasthan
2. Madhya Pradesh
3. Uttar Pradesh
4. West Bengal

Which of the options given below is correct?

(A) 1 > 2 > 3
(B) 3 > 1 > 2
(C) 1 > 3 > 2
(D) 4 > 3 > 2

3. The breeding systems that involve mating of purebred parents of two different breeds/varieties is

(A) Inbreeding
(B) Crossbreeding
(C) Outcrossing
(D) Selective breeding

4. The multiple regression of breeding value on all sources of information is basis of which one of the following?

(A) Tandem selection
(B) Independent culling level
(C) Selection index
(D) Mass selection

5. Which of the following is not an assumption of Hardy Weinberg Equilibrium?

(A) No panmixia
(B) No selection
(C) No mutation
(D) Large population

6. Which of the following leads to abnormal number of chromosomes in gametes and ultimately in zygotes?

(A) Disjunction
(B) Linkage
(C) Linkage disequilibrium
(D) Non-disjunction

7. Inbreeding involves mating of related individuals that lasts how many generations?

(A) 1 - 2
(B) 2 - 4
(C) 4 - 6
(D) 8 - 10

8. Breeding value is mainly associated with which one of the following?

(A) Dominance effects
(B) Epistasis
(C) Additive gene effects
(D) Cytoplasmic effects

9. In which one of the following, one allele masks the effect of another allele at a different locus?

(A) Dominance
(B) Epistasis
(C) Purging effect
(D) Additive genetic effect

10. Identify the correct statements for poultry.

1. Glycine is dietary essential for poultry as they lack urea cycle.
2. The most useful measure of protein quality in monogastirc nutrition is that which reflects the lysine and threonine status.
3. Ideal protein concept does not make an allowance for an excess of individual amino acid.

Which of the statements given above are correct?

(A) 1 and 2 only
(B) 3 and 2 only
(C) 1 and 3 only
(D) 1, 2 and 3

11. Given below are two statements:

Statement 1: Cats are obligate carnivores who have evolved to survive on protein-based diets containing little carbohydrate.

Statement 2: Cats have an unregulated and constantly high rate of amino acid deamination, but they have a limited metabolic capacity to resynthesize arginine from precursors like ornithine.

Which of the statements given above is/are correct?

(A) Both statements 1 and 2 are true and Statement 2 is the correct explanation of Statement 1.
(B) Both statements 1 and 2 are true but Statement 2 is *not* the correct explanation of Statement 1.
(C) Statement 1 is true but Statement 2 is false.
(D) Statement 1 is false but Statement 2 is true.

12. Consider the following statements regarding the nutrient requirements in swine nutrition:

1. Statement I: Lysine is the first-limiting amino acid in practical pig diets based on cereals and vegetable-protein sources.
2. Statement II: Pigs do not adjust their voluntary food intake in response to the energy concentration of a diet typically consuming more total feed as the caloric density of the ration increases.
3. Statement III: The use of standardised ileal digestible (SID) amino acids is preferred for formulating pig diets as it provides a more accurate match to requirements by avoiding the influence of microbial amino acid production in the hindgut.

Which of the statements given above is/are correct?

(A) 1, 2 and 3 (B) 1 and 3 only

(C) 2 and 3 only (D) 3 only

13. Consider the following statements:

1. In a horse, approximately 75–85 per cent of cell wall carbohydrate digestion occurs via microbial fermentation in the foregut.
2. Rabbits produce two types of faecal material: hard faeces high in indigestible fibre and soft faeces high in nutrients.
3. Rabbits practise caecotrophy reingesting soft faeces to obtain microbial protein and vitamins which can contribute 15–30 per cent of their total nitrogen intake.
4. If large quantities of starch reach the horse's large intestine, they are fermented into lactic acid, which can lower the pH, damage the gut wall and potentially lead to laminitis.

Which of the statements given above are correct?

(A) 1, 2, 3 and 4 (B) 1, 2 and 3 only (C) 2 and 3 only (D) 2, 3 and 4 only

14. Consider the following statements:

Statement I: Poultry eats to satisfy its energy needs. However, in laying hens, a specific dietary appetite for calcium is exhibited which is independent of their general hunger for energy.

Statement II: When hens are given diet containing high concentration of calcium, they will increase their consumption of diet by approximately 25 per cent on egg forming days as compared to non-egg-forming days.

Which of the statements given above is/are correct?

(A) Both the statements I and II are true.

(B) Statement I is false but Statement II is true.

(C) Statement I is true but Statement II is false.

(D) Both the statements I and II are false.

15. Consider the following statements regarding dietary cation-anion difference (DCAD):

1. Conditions that promote an alkalotic state (high dietary cations Na^+ and K^+) reduce the sensitivity of bone to parathyroid hormone (PTH) and can limit the release of calcium.
2. Conditions that promote an acidotic state (high dietary anions Cl^- and S^{2-}) increase the sensitivity to PTH and increase the calcium supply from bones and diets.
3. Supplementary anionic salts such as ammonium chloride, ammonium sulphate, magnesium chloride and calcium chloride can be used to adjust the DCAD.
4. A positive DCAD is recommended during the pre-calving period to reduce the incidence of milk fever.

Which of the statements given above is/are correct?

(A) 1 and 2 only
(B) 1, 2 and 3 only
(C) 2, 3 and 4 only
(D) All of the above

16. Consider the following statements regarding bypass protein:

1. Heat treatment causes denaturation of protein that may increase rumen escape of protein.
2. Excessive heating may reduce intestinal digestibility of protein.
3. Heat produced during expeller process of oilseed extraction is beneficial to ruminants.
4. Bypass protein supplementation is especially useful when microbial protein alone cannot meet metabolizable protein requirements.

Which of the statements given above are correct?

(A) 1 and 2 only
(B) 2, 3 and 4 only
(C) 1, 2 and 3 only
(D) All of the above

17. Consider the following statements regarding rumen protein nutrition and indicate which are true:

1. Microbial protein contributes substantially to the amino acid supply of the host animal.
2. Non-structural carbohydrate-fermenting bacteria obtain all their nitrogen exclusively from ammonia.
3. The nutritive value of microbial protein depends partly on its digestibility in the small intestine.

Which of the statements given above are correct?

(A) 1 and 2 only
(B) 1 and 3 only
(C) 1, 2 and 3 only
(D) All of the above

18. Consider the following statements regarding dry matter allowance in ruminants:
    1. Total dry matter should generally be divided into two-thirds roughage and one-third concentrates.
    2. Roughage should consist of equal proportions of dry and green roughage.
    3. If leguminous green fodder is used, it may constitute one-fourth of the roughage dry matter.
    4. Buffaloes generally consume more dry matter per 100 kg body weight than cattle.

    Which of the statements given above are correct?

    (A) 1 and 2 only (B) 1, 3 and 4 only
    (C) 2, 3 and 4 only (D) All of the above

19. Consider the following statements:
    1. Pearson's square method balances only one nutrient at a time.
    2. Trial-and-error method is relatively laborious and time-consuming.
    3. Pearson's square method considers the cost of feed ingredients while balancing rations.

    Which of the statements given above are correct?

    (A) 1 and 2 only (B) 1 and 3 only (C) 2 and 3 only (D) All of the above

20. Consider the following statements regarding calf starter:
    1. Calf starter generally contains 23-26% crude protein.
    2. Calf starter should contain about 75% TDN.
    3. Antibiotics may be incorporated in calf starter to reduce digestive disorders.
    4. Protein requirement of calf decreases after rumen development because microbial protein synthesis begins.

    Which of the statements given above are correct?

    (A) 1 and 2 only (B) 1, 2 and 3 only
    (C) 2, 3 and 4 only (D) All of the above

21. Consider the following statements regarding practical calf feeding:
    1. In organized farms, calves are generally separated from their dam immediately after birth and hand-fed with milk.
    2. Milk should be fed at approximately body temperature (about 40°C).
    3. Daily milk allowance of a calf is approximately one-fifth of the calf's body weight.
    4. Calf starter should be introduced immediately after birth.

    Which of the statements given above are correct?

    (A) 1 and 2 only (B) 1, 2 and 3 only
    (C) 2, 3 and 4 only (D) All of the above

22. Consider the following statements:

1. Extra nutrients should be provided during the last two months of gestation.
2. Pregnant cows and buffaloes should gain about 25-30 kg body weight by the end of gestation.
3. Extra nutrients should preferably be supplied through forage rather than concentrate mixture.
4. Feed intake of dam generally increases to 10% during the last week before calving to fulfil the requirement of growing calf.

Which of the statements given above are correct?

(A) 1 and 2 only (B) 1, 2 and 3 only

(C) 2, 3 and 4 only (D) All of the above

23. Consider the following statements regarding Proximate Analysis and the Van Soest fractionations:

1. Statement I: Neutral Detergent Fiber (NDF) extraction utilizes a neutral surfactant solution to isolate cellulose, hemicellulose and lignin, but it can artificially overestimate the structural carbohydrates if high-starch feeds are not pretreated with alpha-amylase.
2. Statement II: In the classical Weende system, acid-insoluble ash (AIA) is determined by boiling the total ash fraction with 10% HCl and it serves as a reliable indicator of quality of feed.
3. Statement III: The standard Nitrogen-Free Extract (NFE) calculation accumulates the mathematical errors of all other five proximate fractions, making it a purely additive, chemically unmeasured value.

Which of the statements given above are correct?

(A) 1 and 2 only (B) 2 and 3 only (C) 1 and 3 only (D) 1, 2 and 3

24. Consider the following statements regarding volatile fatty acid (VFA) utilization:

1. Statement I: Propionate enters the TCA cycle via conversion to succinyl-CoA serving as the major substrate for hepatic gluconeogenesis in the post-prandial ruminant.
2. Statement II: Butyrate absorbed through the rumen wall is largely oxidized to beta-hydroxybutyrate within the ruminal epithelium, making it a primary ketogenic precursor rather than a gluconeogenic one.
3. Statement III: In ruminant metabolic system, NAD and NADP both undergo oxidative phosphorylation to produce ATP.

Which of the statements given above are correct?

(A) 1 and 2 only (B) 2 and 3 only

(C) 1 and 3 only (D) 1, 2 and 3

25. Consider the following statements regarding B-vitamin nutrition:

1. Statement I: In cobalt deficiency in ruminants (pining), injection of vitamin B_{12} or cobalt into systemic blood relieves the symptoms.
2. Statement II: The chlorine content of most of the foods is comparatively low with the exception of fishmeal.
3. Statement III: Adult ruminants are completely immune to dietary B-vitamin deficiencies under all physiological conditions because ruminal microbial synthesis takes care of all metabolic requirements.

Which of the statements given above are correct?

(A) 1 and 2 only
(B) 2 and 3 only
(C) 1 and 3 only
(D) 1, 2 and 3

26. Mycotoxins are responsible for causing a variety of mycotoxicoses in humans and animals.

Consider the following statements:

1. Fumonisin B1 is the major toxin responsible for mycotoxic leukoencephalomalacia and leads to liquefactive necrosis of the white matter in the cerebrum.
2. Moldy sweet potato toxicity is due to the toxic metabolite 4-ipomeanol.
3. Trichothecene toxins produced by *Fusarium* species are also called as vomitoxins.
4. Summer fescue toxicosis is caused by the toxin cyclopiazonic acid produced by *Aspergillusflavus*.

Which of the statements given above is/are correct?

(A) 1 and 2 only
(B) 2 and 4 only
(C) 1 and 3 only
(D) 1 only

27. Read the following statements:

1. The envelope spikes of all paramyxoviruses are composed of the fusion protein (F) and HN glycoproteins.
2. F is responsible for the fusion of the viral envelope with the plasma membrane of the host cell.

Which of the statements given above is/are correct?

(A) Both 1 and 2 are correct
(B) Both 1 and 2 are incorrect
(C) 1 is correct but 2 is incorrect
(D) 1 is incorrect but 2 is correct

28. Consider the following statements about the animal vaccines:

1. Pinnacle is a live-attenuated vaccine which contains a non-encapsulated strain of *Streptococcus equi* and is used for the control of strangles.
2. ONRAB is an oral bait vaccine for rabies used to control rabies in wild animals and is a live recombinant vaccine based on Adenovirus.
3. Mastivac is a vaccine for the control of mastitis and contains the bacterins of *Staphylococcusaureus, Escherichia coli, Treponema pyogenes* and *Streptococcus* spp.
4. Rispens vaccine is used for the prevention of Marek's disease in poultry.

Which of the statements given above are correct?

(A) 1, 2 and 3 only
(B) 1, 3 and 4 only
(C) 1 and 2 only
(D) 1, 2, 3 and 4

29. Consider the following statements:

1. RIST is used to measure the specific IgE for an allergen, whereas RAST is used to measure the total IgE in the serum.
2. CD1 is the antigen-presenting receptor for peptidoglycans.
3. Tapasin and calnexin are involved in the cytosolic pathway of antigen processing.
4. CTLA-4 is an inhibitory receptor seen on T cells.

Which of the statements given above are correct?

(A) 1 and 2 only
(B) 1 and 4 only
(C) 2 and 3 only
(D) 3 and 4 only

30. Consider the following statements:

1. Type 1 Pili exhibit haemagglutination in a mannose-sensitive manner.
2. Virstatin is an inhibitor of the transcriptional regulator of cholera toxin and pilus production in *Vibrio cholerae*.
3. The UvrABC endonuclease is associated with mismatch repair, whereas the MutS enzyme is associated with the excision repair of DNA in bacteria.
4. Sec pathway translocates folded proteins, whereas Tat pathway translocates unfolded proteins.

Which of the statements given above are correct?

(A) 1 and 2 only
(B) 2 and 3 only
(C) 3 and 4 only
(D) 1, 3 and 4 only

31. Consider the following statements:

1. Sucrose and sorbitol are high molecular weight non-permeating cryoprotectants used for the preservation of cells.
2. HEPES is a zwitterionic compound which is used as a pH indicator in cell culture media.
3. Herpes virus produces both intracytoplasmic and intranuclear inclusion bodies in the host cell.
4. Yolk sac inoculation of embryonated eggs can be used for the isolation and propagation of Blue tongue virus.

Which of the statements given above is/are correct?

(A) 1 only
(B) 2 and 3 only
(C) 4 only
(D) 1 and 4 only

32. A Gram-negative bacterial cell consists of which of the following structural layers from outside towards inside?

1. Peptidoglycan
2. Outer membrane
3. Capsule
4. Cytoplasmic membrane

Which of the following options is/are correct?

(A) 3, 1, 4, 2
(B) 3, 2, 1, 4
(C) 3, 4, 2, 1
(D) 3, 1, 2, 4

33. Consider the following statements:

1. *Mannheimia hemolytica* produces hemolysis, can grow in MacConkey agar and is indole positive.
2. *Campylobacter jejuni* causes porcine intestinal adenomatosis complex and avian vibrionic hepatitis.
3. Rivanol precipitation test for brucellosis is used to detect IgG antibodies.

Which of the statements given above is/are correct?

(A) 1 only
(B) 3 only
(C) 1 and 2 only
(D) 2 and 3 only

34. For activation of the complement system, the innate pathways involved are

1. The Amplification pathway
2. The Classical pathway
3. The Lectin pathway
4. The Alternative pathway

Which of the options given below is correct?

(A) 1, 2 and 4 only
(B) 1, 2 and 3 only
(C) 2 and 3 only
(D) 3 and 4 only

35. The relative merit of live vaccines over inactivated vaccines is

1. Fewer doses required
2. Less chances of hypersensitivity
3. Do not replicate in recipient
4. Relatively cheap

Which of the options given below is correct?

(A) 1, 2 and 4 only
(B) 1, 2 and 3 only
(C) 1, 2, 3 and 4
(D) 2, 3 and 4 only

36. The delayed or Type IV hypersensitivity is mediated by

1. T cells
2. Natural killer (NK) cells
3. Mast cells
4. B cells

Choose the correct answer from the options given below.

(A) 1 and 2 only
(B) 1, 2 and 3 only
(C) 3 and 4 only
(D) 1 and 4 only

37. Consider the following statements:

1. Term 'Ecosystem' was coined by A.G.Tansley.
2. Pyramids of number and pyramids of biomass are always upright while pyramid of energy can be inverted.
3. Idea of food web was proposed by Charles Elton in 1827.
4. In food chain, apex predators are also called detritivores.

Which of the statements given above are correct?

(A) 1, 2 and 3 only
(B) 1 and 4 only
(C) 1, 2 and 4 only
(D) 1, 2, 3 and 4

38. Which of the following are correctly matched?

1. Environment Protection Act, 1986
2. Water Pollution Act, 1981
3. Forest Conservation Act, 1980
4. Biological Diversity Act, 2002

Options:

(A) 1, 2 and 4 only
(B) 2 and 3 only
(C) 1, 3 and 4 only
(D) 1, 2, 3 and 4

39. Which of the following are correctly matched?

1. Shuddha filter: cellulose membrane is used for filtration.
2. Berkefeld filter: kaolin or kieselguhr is used for filtration.
3. Pasteur Chamberland filter: charcoal is used for filtration.
4. Meta filters: porcelain is used for filtration.

Options:

(A) 2 and 3 only
(B) 1, 3 and 4 only
(C) 1 and 2 only
(D) 1, 2, 3 and 4

40. Choose the correct statements:

1. Factors which are associated with the definitive onset of a disease are termed as enabling factors.
2. Factors which tend to aggravate the presence of a disease are termed as pre-disposing factors.
3. When the period of risk is brief, the proportion of population that acquire disease is called Attack Rate.
4. In Iceberg phenomenon, the submerged part shows sub-clinical infections.

Options:

(A) 2 and 3 only (B) 1 and 3 only (C) 1 and 2 only (D) 3 and 4 only

41. Choose the correct statement(s):

1. Sulfur stinker in meat is caused by *Clostridium nigrificans*.
2. UV radiation is nowadays used in ageing of meat.
3. Cryovac preservation technique increases the shelf life of meat to months.
4. Greening of meat may be caused by excessive nitrate or bacterial contamination.

Options:

(A) 3 only (B) 1 and 4 only (C) 2 and 3 only (D) 1, 2, 3 and 4

42. *Mycobacterium* is a genus of acid-fast rod-shaped bacteria belonging to the family Mycobacteriaceae.

Consider the following statements:

1. World Tuberculosis Day is celebrated on 28th of March.
2. *Mycobacterium tuberculosis* is also referred to as Koch's bacillus.
3. *Mycobacterium marinum* causes fish tank granuloma.
4. Lowenstein Jensen egg media is selective media for *Mycobacterium* spp.

Which of the statements given above are correct?

(A) 2, 3 and 4 only (B) 1, 2 and 4 only (C) 1 and 3 only (D) 1, 2, 3 and 4

43. Dermatophytosis is most significant superficial infections that occur in both animals and human. It has been named as per the site of infection.

Choose the correctly matched pair.

1. Tinea unguium : Jock itch
2. Tinea cruris : Onychomycosis
3. Tinea barbae : Barbers itch
4. Tinea pedis : Athletes foot

Options:

(A) 2, 3 and 4 only (B) 1 and 2 only (C) 3 and 4 only (D) 1, 2, 3 and 4

44. Occupational lung diseases (pneumoconioses or hypersensitivity lung diseases) are caused by inhaling different types of dust. Which of the following is/are correctly matched pair(s) about occupational lung diseases?

1. Silicosis: Silicon-trioxide
2. Byssinosis: Sugarcane dust
3. Bagassosis: Cotton dust
4. Anthracosis: Coal dust

Options:

(A) 4 only
(B) 1 and 4 only
(C) 1, 2 and 4 only
(D) 2 and 3 only

45. Rabies is a fatal viral zoonotic disease that affects the central nervous system (CNS) of mammals including humans.

Consider the following statements:

1. First rabies vaccine was developed by Louis Pasteur in 1895.
2. Acute descending spastic paralysis is seen in case of paralytic form of rabies.
3. dFAT is considered the gold standard test in postmortem rabies diagnosis.
4. WHO, WOAH, FAO and GARC have set a goal to reduce rabies related death to zero by 2035.

Which of the statements given above is/are correct?

(A) 1, 2 and 3 only
(B) 3 only
(C) 1 and 2 only
(D) 1, 2, 3 and 4

46. Epidemiology is the study of the distribution, determinants, prevention and control of diseases in populations.

Consider the following statements:

1. Index case is the first case of a disease that is known to investigators.
2. Study of disease in relation to the ecosystem in which they are found is termed as landscape epidemiology.
3. Survey is conducted for a fraction of population, while sampling is done for the entire population.
4. The number of deaths due to a disease occurring in a specified period of time is termed as mortality rate.

Which of the statements given above are correct?

(A) 1 and 3 only
(B) 2, 3 and 4 only
(C) 1, 2 and 4 only
(D) 1, 2, 3 and 4

47. Transmission and Dynamics of Infectious Diseases is integral part of Veterinary Epidemiology.

Consider the following statements:

1. Period of time between infection and maximum infectiousness is termed as incubation period.
2. Time period for which an organism can remain infective outside its host is termed as generation time.
3. The ability of an organism to establish an infection is termed as infectivity.
4. All contagious diseases are infectious, but all infectious diseases are not contagious.

Which of the statements given above is/are correct?

(A) 2 only (B) 1 and 4 only

(C) 3 and 4 only (D) 2 and 3 only

48. Choose the correct statements:

1. Identification of true negatives is termed as sensitivity, while identification of true positives is termed as specificity.
2. Prevalence of a disease cannot influence sensitivity and specificity.
3. Likelihood ratio for a positive test is the ratio of true positive rate divided by false positive rate.
4. Accuracy is also termed as validity.

Options:

(A) 1 and 4 only (B) 1 and 3 only

(C) 1, 2 and 4 only (D) 2, 3 and 4 only

49. Milk-borne diseases are very important for Veterinary Public Health. Which of the following diseases are not transmitted by milk?

1. Botulinum 2. FMD
3. Tick-borne encephalitis 4. Q-fever

Options:

(A) 1, 2 and 4 only (B) 2 and 3 only

(C) 1, 2 and 3 only (D) 1, 2, 3 and 4

50. Which of the following statements are correct?

1. Light (220 lux) is required in work rooms.
2. Stunning area should be at least 3 m in width for bovines.
3. BOD for bovine meat plant should be 1400-3200 mg/L.
4. Offal must be stored at 7°C.

Options:

(A) 1 and 4 only (B) 3 and 4 only (C) 1 and 3 only (D) 1, 3 and 4 only

51. Which of the following statements regarding disaster management are correct?
1. NDMA was established under Disaster Management Act 2005.
2. NDMA is headed by Prime Minister of India.
3. Mitigation refers to activities prior to disaster.
4. Cyclones are measured by the Ritcher scale.

Options:

(A) 1 and 3 only
(B) 2, 3 and 4 only
(C) 1 and 2 only
(D) 1, 2 and 4 only

52. Which of the following statements are correct?
1. Chronic inflammation characterized by two concurrently occurring processes: cellular infiltration and fibroplasia.
2. Chronic inflammation occurs in response to unique biochemical characteristics and/or virulence factors in the stimulus or microbe.
3. Virtually all normal cells in the body can undergo apoptosis in response to appropriate physiologic signals, but many cancer cells acquire resistance to apoptosis.
4. Apoptosis is a major route of tumor cell loss; such resistance enhances the overall growth rate of the tumor.

Options:

(A) 1 and 3 only
(B) 2, 3 and 4 only
(C) 1 and 2 only
(D) 1, 2, 3 and 4

53. Which of the following is correct about the allergic reactions?
1. Anaphylaxis is a severe life-threatening generalized or systemic reaction due to an acute Type I hypersensitivity response.
2. Anaphylactoid is an inflammatory response that resembles anaphylaxis but is not mediated by IgE.
3. Anaphylatoxins is a condition of failure of a sensitized animal to respond to an antigen.
4. Complement fragments that stimulate mast cell degranulation and smooth muscle contraction is known as anergy.

Options:

(A) 1 and 3 only
(B) 2, 3 and 4 only
(C) 1 and 2 only
(D) 1, 2, 3 and 4

54. Most instances of immune dysfunction fall into which of the following broad categories?
1. Hypersensitivity (allergy)
2. Immune imbalance
3. Immune deficiency
4. Autoimmune disease

Options:

(A) 1 and 3 only (B) 1, 2, 3 and 4 (C) 2, 3 and 4 only (D) 1 and 2 only

55. The sequence of events that occurs during the process of fever is

1. Infections or toxins in the blood.
2. Skin vasoconstriction followed by fever.
3. Release of IL-1, IL-6, TNF, IFNs.
4. Release of Prostaglandin E.

Choose the correct sequence from the options given below:

(A) 1, 2, 3, 4 (B) 1, 3, 4, 2 (C) 2, 1, 4, 3 (D) 3, 2, 4, 1

56. Choose the correct statements from the following:

1. Atrophy is the decrease in the size and function of the cell, tissue or organ after it has developed normally.
2. Hypertrophy is an increase in the size of individual cells, leading to an increase in the size of the affected organ or tissue, without an increase in the number of cells.
3. Hyperplasia is an increase in the number of cells in a tissue or organ, resulting in an increase in its size. It occurs only in tissues whose cells are capable of dividing.
4. Metaplasia is a reversible adaptive change in which one mature differentiated cell type is replaced by another mature cell type that is better able to withstand chronic stress or irritation.

Options:

(A) 1 and 3 only (B) 2, 3 and 4 only (C) 1, 2, 3 and 4 (D) 1 and 2 only

57. Inflammation is the protective response of living vascularized tissues to injury or infection.

Choose the correct statements:

1. Accumulation of fluid with a low concentration of plasma protein no to low numbers is known as Serous Inflammation.
2. Accumulation of a thick gelatinous fluid containing abundant mucus is called as Fibrinous Inflammation.
3. Accumulation of fluid with a high concentration of plasma protein no to low numbers of leukocytes is known as Catarrhal Inflammation.
4. Accumulation of fluid with a high concentration of plasma protein and high numbers of leukocytes predominantly neutrophils is called as Suppurative Inflammation.

Options:

(A) 1, 2 and 3 only (B) 1 and 4 only

(C) 1, 2, 3 and 4 (D) 1, 3 and 4 only

58. Given below are two statements:

1. Pathologic calcification refers to the deposition of calcium salts typically as phosphates or carbonates in soft tissues.
2. Soft tissue calcification occurs due to the elevated serum calcium concentration that is termed as dystrophic calcification.

Choose the most appropriate answer from the options given below.

(A) Both 1 and 2 are correct
(B) Both 1 and 2 are incorrect
(C) 1 is correct but 2 is incorrect
(D) 1 is incorrect but 2 is correct

59. Hyperaemia is the increased volume of blood in a tissue or organ due to dilation of arterioles resulting in increased blood flow. Which statement/s is/are correct for active hyperaemia?

1. Acute and chronic
2. Local and general
3. Acute but not chronic
4. Chronic but not acute

Options:

(A) Only 2 is correct
(B) Only 2 and 3 are correct
(C) Only 2 and 4 are correct
(D) Only 1 and 2 are correct

60. Consider the following statements about the diversified farming:

1. In this system, a number of enterprises are taken up in the farm.
2. Crop production is combined with livestock.
3. No enterprise is relatively more important than other enterprises.
4. The major enterprise contributes more than 50% of the total farming income.

Which of the statements given above are correct?

(A) 1 and 2 are correct
(B) 2 and 3 are correct
(C) 1 and 3 are correct
(D) 1 and 4 are correct

61. Which of the following statements regarding the first outbreak of avian influenza in India are correct?

1. It occurred in 2006.
2. It was reported from Maharashtra.
3. The causative virus was H5N1.
4. The first outbreak was reported in commercial poultry.

Options:

(A) 1 and 2 only
(B) 1, 2 and 3 only
(C) 2, 3 and 4 only
(D) 1, 2, 3 and 4

62. Consider the following statements regarding intravenous fluids.

1. Colloids contain larger molecules.
2. Colloids may be used for volume expansion.
3. Crystalloids contain smaller molecules.
4. Crystalloids may be used for volume expansion.

Which of the statements given above are correct?

(A) 1, 2 and 3 only
(B) 1, 3 and 4 only
(C) 2, 3 and 4 only
(D) All statements are correct

63. Maggots recovered from an animal carcass are useful in which of the following forensic investigations?

1. Estimation of the postmortem interval (age of the carcass).
2. Entomotoxicological analysis for detection of toxins or drugs.
3. Species identification of the carcass using molecular techniques.
4. Determination of the season and location of death based on insect succession.

Options:

(A) 1 and 2 only
(B) 1, 2 and 3 only
(C) 1, 2, 3 and 4
(D) 2, 3 and 4 only

64. Which elephant endotheliotropic herpesvirus genotype is most commonly associated with fatal hemorrhagic disease in Asian elephants in India?

1. EEHV1A
2. EEHV4
3. EEHV5
4. EEHV7

Options:

(A) 1 only
(B) 1 and 2 only
(C) 2 and 3 only
(D) 3 and 4 only

65. In which of the following disease(s), abortion is generally seen in 3rd trimester of pregnancy in cows?

1. Brucellosis
2. BHV-1
3. Leptospirosis
4. Trichomonas

Options:

(A) 1 and 2 only
(B) 1 and 3 only
(C) 3 only
(D) 2 and 4 only

66. Phenylketoneuria occurs due to mutation in _____ gene.
(A) Phenylalanine hydroxylase (B) Phenylalanine oxidase
(C) Phenylalanine dismutase (D) Phenylalanine isomerase

67. Identify the marker for peroxisome.
(A) Glucose-6-phophatase (B) Acid phosphatase
(C) Catalase (D) Lactate dehydrogenase

68. Out of the following, identify the acid of highest strength.
(A) Lactic acid (B) Formic acid
(C) Acetic acid (D) Ammonium ion

69. Which amino acid does not absorb light at 240 nm?
(A) Phenylalanine (B) Tryptophane
(C) Histidine (D) Proline

70. From reverse phase HPLC column, which amino acid will elute in last?
(A) Phenylalanine (B) Valine
(C) Histidine (D) Proline

71. Cleavage site for trypsin on proteins is on
(A) Carboxyl side of Met (B) Amino side of Met Phenylalanine
(C) Carboxyl side of Lys/Arg (D) Amino side of Lys/Arg

72. Alpha helix of secondary structure of proteins is stabilized by
(A) Hydrogen bonds and Van der Waals forces
(B) Only hydrogen bonds
(C) Hydrogen bonds and covalent bonds
(D) Covalent bonds and Van der Waals forces

73. Pernicious anemia is caused by the deficiency of
(A) Vitamin C (B) Vitamin B12
(C) Thiamin (D) Vitamin D

74. Scurvy is caused by the deficiency of
(A) Vitamin C (B) Vitamin B12 (C) Thiamin (D) Vitamin D

75. Vitamin E acts synergistically with
(A) Copper (B) Iron (C) Zinc (D) Selenium

76. Consider the following statements regarding camel production management:
1. Camel can bite, strike and kick in any direction and also can spit. A spit is the saliva.
2. The camel can tolerate extreme dehydration and has been known to loose body weight equal to 40% of its body weight.
3. Camels are not digitigrade animals like other artiodactylids. Each foot possesses two digits.

Which of the statements given above is/are correct?

(A) 1 and 3 only (B) 2 only (C) 2 and 3 only (D) 1, 2 and 3

77. Consider the following statements regarding zoo animals production management:
1. There is no fixed rule for standard width for this, but the firebreak should meet the local conditions. However a 10 feet road is rarely effective as a firebreak. A firebreak (open strip) of about 75 feet width will be effective to protect reserve forests and other fragile habitats in parks and sanctuaries.
2. A bloat of crocodiles, a float of hippos.
3. The wide "yawn" of a hippo either signifies begging for food or is a threatening display.

Which of the statements given above is/are correct?

(A) 2 and 3 only (B) 2 only (C) 1 and 3 only (D) 1, 2 and 3

78. Consider the following statements:
1. Elephant can breathe through its mouth and 70% of air is taken in through the trunk.
2. The skin of the body is thickest over the forelimbs and shoulders and thinner over the hindlimbs and hindquarters.
3. The family group consists of closely related cows and their calves under the leadership of a mature bull. The average size of a family unit ranges from 10-20 elephants.

Which of the statements given above is/are correct?

(A) 1 and 3 only (B) 2 only
(C) 2 and 3 only (D) 1, 2 and 3

79. Consider the following statements regarding fodder production and conservation:
1. The fungi (actinomyces)-infected silage is responsible for allergic disease condition called "Farmer's lung" in farmers who handle such damaged silage.
2. Silage preserves 85 per cent of feed energy. (Hay under best conditions preserves only 80 per cent and under-poor conditions 50-60 per cent.)
3. Thin-stemmed crops like maize and Jowar (Sorghum) are not suitable for haymaking as it will take longer time for the stems to dry. Thick-stemmed crops like lucerne, oats and grasses are suited for haymaking.

Which of the statements given above is/are correct?

(A) 2 and 3 only (B) 2 only (C) 1 and 3 only (D) 1, 2 and 3

80. Consider the following statements regarding large ruminants production management:

1. A cow yielding 10 kg milk will have to receive 2.5 to 3.0 kg concentrate in addition to adequate roughages.
2. For 'challenge' feeding, 2 weeks before the expected date of calving, start feeding 0.5 kg of concentrate mixture. Increase this amount by 300 to 400 g daily until the cow is consuming 0.5 to 1 kg concentrate for every 100 g body weight.
3. It is better to keep the calf on the hungry side than overfeed it. They require 1 kg milk for every 10 to 12 kg body weight per day.

Which of the statements given above is/are correct?

(A) 1 and 3 only
(B) 2 only
(C) 2 and 3 only
(D) 1, 2 and 3

81. Consider the following statements regarding small ruminants production management:

1. The breeding of goats can be carried out throughout the year. However, in tropical climate, the sheep can breed around the year.
2. Most of the goat breeds are non-seasonal in breeding activity while most of the breeds of sheep in the temperate regions are seasonally polyestrous

Which of the statements given above is/are correct?

(A) 1 only
(B) 2 only
(C) Both 1 and 2
(D) Neither 1 nor 2

82. Consider the following statements:

1. There is a neck-like structure called latebra, which holds the germinal disc (blastoderm in case of infertile eggs or blastodisc in case of fertile eggs) in place.
2. Physiological zero is the temperature below which no embryonic development and above which embryo starts developing. The physiological zero for chicken egg is 75°F.
3. When a Rhode Island Red male is mated to Barred Plymouth Rock females, all progeny are black, while female chicks have a whitish spot on the head.

Which of the statements given above is/are correct?

(A) 1 and 3 only
(B) 2 only
(C) 2 and 3 only
(D) 1, 2 and 3

83. Consider the following statements regarding hatchery management:

1. Maintain a brooder temperature of 90° to 95° F for the first week and then reduce 5° F every week until it reaches the room temperature.
2. We have to provide brooder guard with a diameter of 5 m and height of the brooder should not exceed 1.5 m.
3. Prevailing air movements must be from the brooder area to other poultry areas and never in the opposite direction.

Which of the statements given above is/are correct?

(A) 2 and 3 only
(B) 2 only
(C) 1 and 3 only
(D) 1, 2 and 3

84. Consider the following statements regarding poultry production management:

1. Late moulters are usually poor layers. Such birds start moulting early and take unusually long time (24 weeks or so) to complete moulting.
2. Order of depigmentation vent > Eye ring and ear lobe > Beak > Bottom of feet > Front of shank > Entire shank
3. From a cost of egg production standpoint, HHEP is good as it measures the effects of both egg production and mortality. If there is no mortality during a period, the HDEP and HHEP are equal.

Which of the statements given above is/are correct?

(A) 1 and 3 only
(B) 2 only
(C) 2 and 3 only
(D) 1, 2 and 3

85. Consider the following statements:

1. The ratio of males and females in case of meat-type breeder chicks is 1 : 10 to 12 and in case of egg-type breeder chicks, it is 1 : 12 to 15.
2. When 80% of the flock weighs within 10-15% above or below the average weight, then the flock is called uniform.
3. The females' beaks should be tipped, even removing as much as 3 mm can significantly reduce his mating ability.

Which of the statements given above is/are correct?

(A) 2 and 3 only
(B) 2 only
(C) 1 and 3 only
(D) 1, 2 and 3

86. Consider the following statements regarding rabbit production management:

1. During mating management in rabbits, the male should always be put to the female's cage at the time of mating to avoid fighting.
2. The mother-child relationship is totally lacking in rabbits for which fostering should be taken place within 5 days of kindling.
3. The kits are born hairless with their eyes closed.

Which of the statements given above is/are correct?

(A) 1 and 3 only (B) 2 only (C) 2 and 3 only (D) 1, 2 and 3

87. Consider the following statements regarding laboratory or pet animal production management:

1. Hamsters also enjoy supplements of sunflower seeds and a variety of cereals, but are not advisable to feed fresh vegetables.
2. Start feeding beef with much fat by the 2nd month onwards. Feeding rice in early puppyhood gives it a pot-bellied appearance.
3. Hamsters are coprophagous and bend the upper half of their body at each defecation to take faeces.

Which of the statements given above is/are correct?

(A) 2 and 3 only (B) 2 only
(C) 1 and 3 only (D) 1, 2 and 3

88. Consider the following statements regarding equine production management:

1. Donkeys and mules should be allowed to roll in dust as soon as the weight is removed off their backs.
2. A person taking care of horses - a groomer is known as syce.
3. Nervousness, a desire for company, frequent urination, nickering, swelling and movement of vulva are the typical signs of estrus in horses and donkeys.

Which of the statements given above is/are correct?

(A) 1 and 3 only (B) 2 only
(C) 2 and 3 only (D) 1, 2 and 3

89. Consider the following statements with respect to the log dose response curve:

1. Dose response curve of agonist shifts to left in the presence of competitive antagonist.
2. Slope of the agonist dose response curve remains same in competitive antagonism setup.
3. Dose response curve of agonist shifts to right in the presence of non-competitive antagonist.

Which of the statements given above is/are correct?

(A) 1 only (B) 1 and 2 only (C) 2 and 3 only (D) 2 only

90. Consider the following statements with respect to the receptors:
1. Nuclear receptors mediate their effects through gene transcription
2. GPCRs mediate their effects through ion channels and enzymes
3. Ligand-gated ion channels mediate their effects directly through enzymes
Which of the statements given above is/are correct?
(A) 2 and 3 only
(B) 1 and 2 only
(C) 1 only
(D) 1 and 3 only

91. Movement of solutes in facilitated transport is governed by
1. Concentration gradient
2. Availability of ATP
3. Carrier molecules
Which of the statements given above is/are correct?
(A) 1 only
(B) 1 and 2 only
(C) 1 and 3 only
(D) 3 only

92. Consider the following statements with respect to autonomic drugs:
1. Dobutamine enhances the heart rate through IP3 and DAG cascade.
2. Terbutaline relaxes bronchi through adenyl cyclase and cAMP cascade.
3. Phenylephrine contracts blood vessel through IP3 and DAG cascade.
Which of the statements given above is/are correct?
(A) 2 and 3 only
(B) 1 and 3 only
(C) 1 only
(D) 1 and 2 only

93. Consider the following statements with respect to adrenergic neurotransmission:
1. α-Methyltyrosine depletes nor-epinephrine content in neurons
2. α-Methyltyrosine inhibits tyrosine hydroxylase enzyme
Which of the statements given above is/are correct?
(A) 1 only
(B) 2 only
(C) Both 1 and 2
(D) Neither 1 nor 2

94. Consider the following statements with respect to cholinergic drugs:
1. Carbachol possesses predominant nicotinic activity
2. Bethanechol largely acts on autonomic ganglia
3. Methacholine is rapidly hydrolyzed by AChE
Which of the statements given above is/are correct?
(A) 1 and 3 only
(B) 1 only
(C) 2 and 3 only
(D) 1 and 2 only

95. Consider the following statements with respect to neurotoxins:
1. Strychnine blocks GABAA receptors
2. Picrotoxin blocks glycine receptors
Which of the statements given above is/are correct?
(A) 1 only
(B) 2 only
(C) Both 1 and 2
(D) Neither 1 nor 2

96. Consider the following statements with respect to dexmedetomidine:
1. Dexmedetomidine is a dissociative anaesthetic
2. Dexmedetomidine primarily acts on NMDA receptors
3. Dexmedetomidine is a highly selective alpha-2-adrenergic agonist
Which of the statements given above is/are correct?
(A) 1 and 3 only
(B) 3 only
(C) 2 only
(D) 1 only

97. With respect to anti-depressant drugs, consider the following statements:
1. Tricyclic anti-depressants inhibit serotonin uptake
2. Tricyclic anti-depressants inhibit nor-epinephrine uptake
3. The pro-muscarinic effect of tricyclic anti-depressants cause dry mouth
Which of the statements given above is/are correct?
(A) 1 only
(B) 1 and 2 only
(C) 1 and 3 only
(D) 2 only

98. Consider the following statements regarding diuretics:
1. Spironolactone directly blocks sodium channel in the collecting tubule
2. Furosemide acts by blocking Na^+ K^+ $2Cl^-$ symporter in the thick ascending loop
3. Thiazide diuretics act at proximal tubule
Which of the statements given above is/are correct?
(A) 2 and 3 only
(B) 1, 2 and 3
(C) 2 only
(D) 1 and 2 only

99. With respect to antacids, consider the following statements:
1. Magnesium salt antacids cause diarrhoea
2. Aluminium salt antacids cause constipation
Which of the statements given above is/are correct?
(A) 1 only
(B) 2 only
(C) Both 1 and 2
(D) Neither 1 nor 2

100. Consider the following statements regarding drugs affecting uterus:

1. Atosiban relaxes uterus by antagonizing the effects of oxytocin
2. Halothane possesses tocolytic effect
3. Ritodrine acts as an ecbolic agent

Which of the statements given above is/are correct?

(A) 1 and 2 only
(B) 1 and 3 only
(C) 3 only
(D) 1 only

101. Consider the following options and choose the cephalosporin(s) that possess(s) anti-bacterial activity against methicillin-resistant Staphylococcus aureus:

1. Cefotaxime
2. Ceftaroline

Which of the option(s) given below is correct?

(A) 1 only
(B) 2 only
(C) Both 1 and 2
(D) Neither 1 nor 2

102. A rise in body temperature of over 1° C is needed to cause a significant decrease in heat production in cattle. The decrease in heat production may be caused by

1. Decrease in feed intake.
2. More cortisol production.
3. A direct effect of high ambient temperature in the hypothalamus.
4. Decrease in thyroid production.

Choose the correct answer from the options given below:

(A) 1, 2 and 4 only
(B) 1, 3 and 4 only
(C) 1, 2, 3 and 4
(D) 2, 3 and 4 only

103. What is true about gonadotropins?

1. Chemically, glycoproteins are in nature.
2. Tonic levels are controlled by negative feedback from the gonads.
3. Progesterone decreases the sensitivity of the anterior pituitary to GnRH and LH and FSH concentrations decrease.
4. Concentrations of estrogens and progesterone also influence the amount of LH or FSH secretion.

Choose the correct answer from the options given below:

(A) 1, 2 and 4 only
(B) 1, 3 and 4 only
(C) 2, 3 and 4 only
(D) 1, 2, 3 and 4

104. Which of the following factor(s) cause the hypothalamus to secrete more GH-RH?

1. Fasting
2. Low plasma glucose
3. Physical exercise and stress
4. Low dietary protein

Choose the correct answer from the options given below:

(A) 1, 2 and 4 only
(B) 1, 2 and 3 only
(C) 1, 2, 3 and 4
(D) 2, 3 and 4 only

105. Cortisol has the following effects:

1. Increases lipolysis in adipose tissue.
2. Increases insulin sensitivity.
3. Increases gluconeogenesis in the liver.
4. It has an anti-inflammatory effect.

Choose the correct answer from the options given below:

(A) 1, 2 and 4 only
(B) 1, 3 and 4 only
(C) 1, 2, 3 and 4
(D) 2, 3 and 4 only

106. What is true about oogenesis?

1. The oocyte of the primordial follicle is a primary oocyte.
2. Two oocytes develop from the reduction division of a primary oocyte.
3. Second polar body is formed by the division of the secondary oocyte at the time of fertilization.
4. Primary oocyte and secondary oocyte, both have haploid (*n*) chromosomes.

Choose the correct answer from the options given below:

(A) 1, 2 and 4 only
(B) 1, 3 and 4 only
(C) 1, 2 and 3 only
(D) 1 and 3 only

107. Which of the following groups of hormones is transported to the anterior pituitary by the hypothalamohypophyseal portal system?

1. Dopamine
2. GnRH
3. Vasopressin
4. Oxytocin

Choose the correct answer from the options given below:

(A) 1 and 2 only
(B) 1, 2 and 4 only
(C) 1 and 4 only
(D) 2, 3 and 4 only

108. The distribution of ventilation within the lung is influenced by

1. Regional variations in lung compliance.
2. Regional variations in lung inflation.
3. Regional variation in airways resistance.
4. Collateral ventilation.

Choose the correct answer from the options given below:

(A) 1, 2 and 4 only
(B) 1, 2 and 3 only
(C) 1, 2, 3 and 4
(D) 2, 3 and 4 only

109. What is true about Hill coefficient?

1. Hill coefficient is the degree of cooperativity that a hemoglobin molecule possesses.
2. A low Hill coefficient indicates that the hemoglobin has strong cooperativity.
3. Hill coefficient for mammalian hemoglobin is 2.8
4. Avian hemoglobin has been observed to be above the theoretical limit of the 4 Hill coefficient.

Choose the correct answer from the options given below:

(A) 1, 2 and 4 only
(B) 1, 2 and 3 only
(C) 1, 2, 3 and 4
(D) 1, 3 and 4 only

110. The arterial baroreflex response to a decrease in arterial blood pressure is:

1. Increased discharge in sympathetic nerves to the heart and blood vessels.
2. Decreased discharge in arterial baroreceptor afferent nerves.
3. Decreased discharge in the vagus nerve to the heart.
4. An increase in heart rate, cardiac contractility, vasoconstriction and increased venous return.

Choose the correct answer from the options given below:

(A) 1, 2 and 4 only
(B) 1, 3 and 4 only
(C) 1, 2, 3 and 4
(D) 2, 3 and 4 only

111. Potassium-deficient states (hypokalemia) result in low intracellular potassium ion concentration and high intracellular hydrogen ion concentration. Accordingly

1. The urine becomes more acidic.
2. The ECF becomes more alkaline.
3. The urine becomes more alkaline
4. The ECF becomes more acidic.

Choose the correct answer from the options given below:

(A) 1 only
(B) 1 and 2 only
(C) 3 only
(D) 3 and 4 only

112. Which of the following statements are true about mammary growth during pregnancy?

1. About 45-95% of total mammary growth occurs during this period.
2. Early pregnancy is characterized by extensive alveolar development.
3. Mid to late pregnancy associated with extensive lobuloalveolar growth.
4. Insulin and IGFs are also involved in mammary cell mitosis during pregnancy.

Choose the correct answer from the options given below:

(A) 1 only
(B) 1, 2 and 4 only
(C) 1, 2, 3 and 4
(D) 1 and 4 only

113. The electrochemical events governing the neuromuscular synapse and the synapse between neurons are similar; however the neuromuscular synapse is somewhat unique in the following respects:

1. One motor neuron innervates single muscle fibers, whereas synapses between neurons are made by numerous other motor neurons.
2. Action potentials generate only EPPs, whereas synapses between neurons generate both EPSPs and IPSPs.
3. ACh is the only neurotransmitter in neuromuscular junction, whereas synapses between neurons involves several other neurotransmitters like ACh, glutamate, aspartate, GABA, glycine, etc.
4. nAChR is the only receptor type in neuromuscular junction, whereas synapses between neurons utilize many other receptors (e.g. muscarinic, NMDA, AMPA etc).

Choose the correct answer from the options given below:

(A) 1, 2, 3 and 4
(B) 2, 3 and 4 only
(C) 1, 2 and 3 only
(D) 1 and 4 only

114. Which of the following is/are the part of auditory pathway?

1. Medial geniculate nucleus
2. Caudal colliculus
3. Cochlear nucleus
4. Nucleus of the solitary tract

Choose the correct answer from the options given below:

(A) 1, 2 and 3 only
(B) 1, 2, 3 and 4
(C) 2, 3 and 4 only
(D) 3 and 4 only

115. Molecular events occurring during excitation-contraction coupling in cardiac and smooth muscles involves following events:

1. Conformational change in tropomyosin
2. Ca^{++} binds to troponin C
3. Myosin heads bind to active sites
4. Exposure of the binding sites on the actin
5. "Power stroke" – muscle contraction

Choose the correct sequence of events from the options given below:

(A) 1, 2, 3, 4, 5 (B) 2, 3, 1, 4, 5

(C) 2, 1, 4, 3, 5 (D) 2, 1, 3, 4, 5

116. Consider the following statements about the collective farming:

1. The members surrender their land, livestock and machineries to the society.
2. The members work together under a management committee elected by themselves
3. The committee maintains or manages the farm activities by proper allocation of work.
4. Each farmer retains right on his own land.

Which of the statements given above are correct?

(A) 1, 2 and 4 are correct (B) 2, 3 and 4 are correct

(C) 1, 2 and 3 are correct (D) 1, 3 and 4 are correct

117. Which of the following parasite is known to manipulate the behaviour of its intermediate host to enhance transmission to the definitive host?

1. *Dicrocoeliumdentriticum*
2. *Toxoplasma gondii*
3. *Paragonimus westermanni*
4. *Plasmodium knowelsi*

Options:

(A) 1, 2, 3 and 4 (B) 1, 2 and 3 only

(C) 1 and 2 only (D) None of the above

118. Treatment with doxycycline in filariasis of animals and human, primarily targets

(A) Adult nematodes directly

(B) Microfilariae only

(C) Endosymbiotic *Wolbachia,* indirectly affecting parasite survival and fertility

(D) Mosquito vectors

119. Consider Assertion (A) and Reason (R) regarding Neurocysticercosis in humans.

Assertion (A): Humans become accidental intermediate hosts in neurocysticercosis.

Reason (R): Neurocysticercosis develops following ingestion of *Taeniasolium* eggs rather than cysticerci.

Which of the statements given above is/are correct?

(A) Both (A) and (R) are true and (R) is the correct explanation of (A).

(B) Both (A) and (R) are true, but (R) is not the correct explanation of (A).

(C) (A) is true, but (R) is false.

(D) (A) is false, but (R) is true.

120. Match the following parasites with their respective hosts:

List-I (Hookworm species)	List-II (Host)
I. *Ancylostoma tubaeformae*	1. Sheep and goats
II. *Bunostomum phlebotomum*	2. Pig
III. *Globocephalu suro subulatus*	3. Cattle
IV. *Bunostomum trigonocephalum*	4. Cat

Options:

(A) I–4, II–2, III–3, IV–1 **(B) I–3, II–4, III–2, IV–1**

(C) I–4, II–3, III–2, IV–1 **(D) I–4, II–3, III–1, IV–2**

121. Match the following acaricides with their mode of action:

List I (Acaricides)	List II (Mode of action)
I. Amitraz	1. Voltage-gated sodium channel modulator
II. Synthetic Pyrethroid	2. Octopamine receptor agonist (α_2-adrenergic agonist)
III. Fipronil	3. GABA-gated chloride channel antagonist
IV. Ivermectin	4. Glutamate-gated chloride channel agonist

Options:

(A) I–1, II–2, III–4, IV–3 **(B) I–2, II–1, III–3, IV–4**

(C) I–3, II–4, III–1, IV–2 **(D) I–2, II–3, III–1, IV–4**

122. Cerebrospinal nematodiasis is caused by *Setariadigitata* in sheep.

Consider the following statements:

1. Adult worms migrate from the peritoneal cavity to the spinal cord, resulting in cerebrospinal nematodiasis.
2. Immature larvae undergo aberrant migration through the central nervous system in aberrant hosts.
3. Focal encephalomyelomalacia is a characteristic pathological lesion of cerebrospinal nematodiasis.
4. Mosquitoes serve as the intermediate hosts of Setariadigitata.

Which of the statements given above is/are correct?

(A) Only 1 and 2 (B) Only 2

(C) Only 1, 2 and 3 (D) Only 2, 3 and 4

123. Consider Assertion (A) and Reason (R) regarding *Babesia equi*, a horse haemoprotozoan:

Assertion (A): *Babesia equi* was reclassified as *Theileria equi*.

Reason (R): *Babesia equi* possesses a pre-erythrocytic schizont stage in leukocytes, a characteristic feature of *Theileria* species.

Which of the statements given above is/are correct?

(A) Both Assertion (A) and Reason (R) are true and the Reason (R) is the correct explanation of the Assertion (A).

(B) Both Assertion (A) and Reason (R) are true, but the Reason (R) is not the correct explanation of Assertion (A).

(C) Assertion (A) is true, but Reason (R) is false.

(D) Assertion (A) is false, but Reason (R) is true.

124. The recent surge of Primary Amoebic Meningoencephalitis (PAM) cases in India has been reported predominantly from which state?

(A) Maharashtra (B) Tamil Nadu

(C) Kerala (D) Karnataka

125. A precocious strain of *Eimeria* is best defined as a parasite that

(A) Produces larger oocysts than the parent strain

(B) Completes its endogenous life cycle with fewer generations of schizogony, resulting in earlier oocyst shedding

(C) Requires an intermediate host for transmission

(D) Produces more pathogenic infections than the parent strain

126. The phenomenon of pre-immunity is best described as

1. Complete elimination of the parasite after primary infection
2. Partial immunity maintained by the persistence of a low-grade infection
3. Complete elimination of persistent infection results in the loss of pre-immunity
4. Passive immunity transferred from mother to offspring

Which of the statements given above is/are correct?

(A) Only 1 and 2 (B) Only 2

(C) Only 2 and 3 (D) Only 2, 3 and 4

127. Which structural feature enables *Cryptosporidium* to be described as an epicellular parasite?

(A) Residence in the lamina propria of enterocytes

(B) Development inside phagosomes of macrophages and dendritic cells

(C) Localization within a membrane-bound compartment on the apical surface of enterocytes without entering the cytoplasm

(D) Resides in nucleus and multiplies after reaching cytoplasm

128. Which one of the following is suitable for goodness of fit test?

(A) T-test (B) Z-test

(C) ANOVA (D) Chi-Square test

129. If $p = 0.6$ and $q = 0.4$, the heterozygote frequency under Hardy-Weinberg equilibrium will be

(A) 0.24 (B) 0.36 (C) 0.48 (D) 0.16

130. The covariance between offspring and one parent equals which one among the following?

(A) $1/2\ V_A$ (B) $1/4\ V_A$

(C) $1/2\ V_A + 1/2\ V_D$ (D) $1/2\ V_A + 1/4\ V_A$

131. The correlation between breeding values of two individuals is termed as

(A) Coefficient of relationship (B) Coefficient of inbreeding

(C) Coefficient of variance (D) Genetic correlation

132. There are _____ isoforms of LDH present.

(A) 2 (B) 4 (C) 5 (D) 3

133. NAD-dependent dehydrogenase can be assayed spectrophotometrically at

(A) 340 nm (B) 440 nm

(C) 280 nm (D) 240 nm

134. Antimycin inhibits which complex of respiratory chain?

(A) Complex I
(B) Complex II
(C) Complex III
(D) Complex IV

135. For in-gel activity estimation of LDH, out of the following which compound forms blue formazan?

(A) Reduced PMS
(B) Oxidized PMS
(C) Oxidized NBT
(D) Reduced NBT

136. Pentose phosphate pathway primarily generates

(A) ATP
(B) GTP
(C) NADH
(D) NAPDH

137. Consider the following statements regarding swine production management:

1. Pork is lower in polyunsaturated fatty acids than beef, lamb or milk and is higher in cholesterol than butter, cheese, eggs and seafood.
2. In Roto-terminal Cross System, the replacement gilts are produced by two or three breed rotation in the sub-breeding herd. While in Terminal Cross System, superior F_1 gilts for maternal performance are produced by mating pure breed boar of one breed to pure breed sows of another breed.
3. Low heritability traits, like carcass length, back fat thickness and loin eye area respond consistently to selection, but show little response to hybrid vigour. Traits high in heritability like litter size, litter weight and survival rate usually demonstrate good response to hybrid vigour.

Which of the statements given above is/are correct?

(A) 2 and 3 only
(B) 2 only
(C) 1 and 3 only
(D) 1, 2 and 3

138. Consider the following statements:

1. All animals are fundamentally selfish, self-centered and self-preserving.
2. Buffaloes, for example, come into heat mostly between dusk and dawn in winter months and thus are nocturnal breeders in this season, though they breed also during daytime in other seasons.
3. Generally animals are approached from behind and on their left side, head and neck regions are handled first.

Which of the statements given above is/are correct?

(A) 1 and 3 only
(B) 2 only
(C) 2 and 3 only
(D) 1, 2 and 3

139. Consider the following statements:

1. In practice, while taking the side view of an animal, the distance between the objective of the camera and the object (animal) should be 3 times latter's maximum dimension, namely, its length including its head.
2. Grooming is begun at the neck behind the ears and brushing is carried out in the opposite direction as the flow of hair.
3. Clip the hair from around the horn buds of calves and surround the area with a ring of heavy grease or Vaseline to protect the eyes against the chemical.

Which of the statements given above is/are correct?

(A) 2 and 3 only
(B) 2 only
(C) 1 and 3 only
(D) 1, 2 and 3

140. Consider the following statements regarding animal welfare:

1. Beaks trimming of birds cannot be done with infrared beam which is a more stressful method than using a hot blade.
2. According to World Animal Protection, some of the countries that received an "A" score (best countries for animal welfare) include Austria, New Zealand Switzerland and the United Kingdom, whereas India was placed at score C on a scale from A to G.
3. In the small ruminants, making provision for some improvised cheaper night shelters with protection from strong hot and cold wind shall further add to their welfare.

Which of the statements given above is/are correct?

(A) 1 and 3 only
(B) 2 only
(C) 2 and 3 only
(D) 1, 2 and 3

141. Vagus indigestion is manifested as rumen atony caused by damage or inflammatory changes to the vagus nerve. Consider the following statements for their correctness:

1. The vagus nerve provides both sensory and motor innervation to the bovine forestomach compartments
2. Three types of vagal indigestion have been defined in cattle

Which of the statements given above is/are correct?

(A) 1 only
(B) Both 1 and 2
(C) 2 only
(D) Both are incorrect

142. Diaphragmatic hernia is a common clinical condition in buffaloes in many parts of India. Consider the following statements about diaphragm:

1. The diaphragm is made of a centered muscular portion and a peripheral tendinous portion
2. There are three openings through the diaphragm: the esophageal hiatus, the aortic hiatus and the foramen vena cava

Which of the statements given above is/are correct?

(A) 1 is correct
(B) 2 is correct
(C) Both are correct
(D) Both are incorrect

143. The predisposing factors for left displacement of the abomasum include:

1. Large amounts of concentrates and low fiber intake
2. Feeding of crude fiber concentrations of $< 16\%$
3. Low postpartum serum calcium
4. Peripartum period

Which of the statements given above is/are correct?

(A) 1 and 4
(B) 2 and 4
(C) 3 and 4
(D) All of the above

144. Traumatic Reticuloperitonitis is also known as Hardware Disease. Consider the following statements about TRP:

1. Metallic foreign bodies may penetrate the reticulum.
2. Rumenotomy may be used for exploration and removal of foreign material.
3. The primary lesion occurs in the pericardium.
4. Chronic cases may develop adhesions and abscesses.

Which of the statements given above is/are correct?

(A) 1, 2 and 4 only
(B) 1, 2 and 3 only
(C) 2, 3 and 4 only
(D) 1, 3 and 4 only

145. Consider the following statements about treatment of teat fistula:

1. Teat fistula may develop after trauma or improper healing
2. Surgical correction aims to restore normal milk passage
3. Spontaneous healing is common in teat fistula

Which of the statements given above is/are correct?

(A) 1 and 2 only
(B) 2 and 3 only
(C) 1, 2 and 3
(D) 1 and 3 only

146. Consider the following statements about the etiopathogenesis and treatment of intestinal obstruction:

1. Intestinal obstruction may result in abdominal distension and dehydration
2. Vascular compromise can lead to intestinal necrosis
3. Early surgical intervention may not improve survival

Which of the statements given above is/are correct?

(A) 1 only (B) 1 and 2 only
(C) 2 and 3 only (D) All of the above

147. A large-breed dog presents with acute abdominal distension, non-productive retching and shock. Radiographs confirm gastric dilatation-volvulus (GDV).

Consider the following statements:

1. GDV primarily occurs in large, deep-chested breeds.
2. Gastric decompression is an important component of initial management.
3. Gastric decompression should not be performed while shock therapy is initiated.
4. Gastropexy reduces the risk of recurrence of gastric volvulus.

Which of the statements given above are correct?

(A) 1 and 4 only (B) 1, 2 and 4 only
(C) 1, 2 and 3 only (D) 1, 2, 3 and 4

148. A male cat is presented with acute urethral obstruction accompanied by hyperkalemia and azotemia. Consider the following statements regarding the emergency management of this patient:

1. Stabilization of metabolic abnormalities is important before anesthesia.
2. Relief of urinary obstruction is the primary surgical objective.
3. Tube cystostomy is the best treatment option in such cases.
4. Urethral plugs are the major cause of urethral obstruction in male cats.

Which of the statements given above are correct?

(A) 1 and 3 only (B) 2, 3 and 4 only
(C) 1, 2 and 4 only (D) 1, 2, 3 and 4

149. A dog with perineal hernia undergoes surgical repair. Consider the following statements for their correctness:

1. Perineal hernia results from weakening of pelvic diaphragm muscles.
2. Surgical repair aims to restore pelvic diaphragm support.
3. Recurrence does not occur after repair.

Which of the statements given above is/are correct?

(A) 1 only (B) 2 only (C) 1 and 2 only (D) 1, 2 and 3

150. A dog with a tibial fracture is considered for external skeletal fixation.
Consider the following statements for their correctness:
1. External fixators provide fracture stabilization while preserving soft tissue blood supply.
2. External skeletal fixation can be useful in selected open fractures.
3. Pin tract infection is a possible complication.
Which of the statements given above is/are correct?
(A) 1 only (B) 2 only (C) 1 and 2 only (D) All of the above

151. Inhalation anaesthesia is a safe way to produce general anaesthesia in animals. There may be several factors affecting anesthetic uptake.
Consider the following statements about their correctness:
1. Cardiac output influences delivery of inhalational anesthetics to tissues.
2. Increased cardiac output may delay the rise in alveolar anesthetic concentration.
3. Low cardiac output always prevents anesthesia induction.
4. Tissue perfusion influences anesthetic distribution.
Which of the statements given above are correct?
(A) All statements are correct (B) 1 and 3 only
(C) 2 and 3 only (D) 1, 2 and 4 only

152. Regarding pain pathways, consider the following statements:
1. Nociceptive information is transmitted from peripheral tissues to the spinal cord.
2. The spinal cord is an important site for modulation of nociceptive signals.
3. Pain perception occurs only at peripheral nociceptors.
4. Higher CNS centers are involved in pain perception.
Which of the statements given above are correct?
(A) 1 and 3 only (B) 1, 2 and 4 only
(C) 2 and 3 only (D) All statements are correct

153. Ketamine is commonly used to produce anaesthesia in domestic and wild animal species.
Consider the following statements about their correctness:
1. Ketamine produces dissociative anesthesia.
2. NMDA receptor antagonism contributes to its effects.
3. Ketamine does not produce complete muscle relaxation.
4. Ketamine may increase sympathetic activity.
Which of the statements given above are correct?
(A) 1, 2 and 4 only (B) 1 and 3 only
(C) 2 and 3 only (D) All statements are correct

154. Regarding tissue distribution of anesthetic drugs, consider the following statements:

1. Vessel-rich tissues achieve equilibrium rapidly.
2. Brain is part of the vessel-rich group.
3. Fat equilibrates faster than brain.
4. Fat requires longer equilibration.

Which of the statements given above is/are correct?

(A) 1 and 2 are correct
(B) 1, 2 and 3 are correct
(C) 1, 2 and 4 are correct
(D) All are correct

155. A good radiograph is essential to make correct radiographic diagnosis, but there may be several factor that affect the quality of a radiograph. Consider the following statements for their correctness:

1. Radiographic density refers to degree of blackening of film
2. Radiographic contrast is mainly influenced by kVp
3. The silhouette sign occurs due to loss of tissue density
4. High kVp technique produces low contrast image

Which of the statements given above are correct?

(A) 1 and 2 are correct
(B) 1, 2 and 3 are correct
(C) 1, 2 and 4 are correct
(D) All are correct

156. Consider the following statements about thoracic radiography for their correctness.

1. Pneumothorax results in lung retraction from chest wall.
2. Cardiomegaly is best assessed in oblique view.
3. Bronchial pattern shows thickened bronchial walls.
4. Alveolar pattern in thoracic radiography is characterized by air-filled bronchi.

Which of the statements given above are correct?

(A) Only 1 and 2 are correct
(B) Only 1 and 3 are correct
(C) Only 2 and 3 are correct
(D) Only 1, 3 and 4 are correct

157. Consider the following statements regarding the tongue.

1. The tongue is composed predominantly of skeletal muscle.
2. It possesses both intrinsic and extrinsic muscles.
3. The lingual papillae are entirely mechanical in function.

Which of the statements given above are correct?

(A) 1 and 3 only
(B) 1 and 2 only
(C) 1, 2 and 3
(D) None of the above

158. Consider the following statements regarding the teeth for their correctness.

1. Teeth are implanted in alveoli of the jaws.
2. Enamel covers the entire root of the tooth.
3. Dentin constitutes the major bulk of a tooth.
4. Cementum covers the root in most teeth.

Which of the statements given above are correct?

(A) 1, 3 and 4 only
(B) 1 and 2 only
(C) 2, 3 and 4 only
(D) 1, 2, 3 and 4

159. Consider the following statements regarding the salivary glands for their correctness.

1. The parotid gland is predominantly serous.
2. The mandibular gland is mixed in secretion.
3. The sublingual gland has only polystomatic parts in domestic animals.

Which of the statements given above are correct?

(A) All of the above
(B) None of the above
(C) 2 and 3 only
(D) 1 and 2 only

160. Consider the following statements regarding negative energy balance in dairy cattle.

1. Negative energy balance occurs when energy expenditure exceeds energy intake
2. It is common during early lactation
3. Mobilization of body fat can occur during negative energy balance

Which of the statements given above are correct?

(A) None of the above
(B) 1 and 2 only
(C) 2 and 3 only
(D) All of the above

161. Consider the following statements regarding pregnancy toxemia for their correctness.

1. It occurs mainly during late pregnancy.
2. It is associated with infection during late pregnancy.
3. It is commonly seen in ewes with multiple fetuses.

Which of the statements given above are correct?

(A) 1 and 2 only
(B) 2 and 3 only
(C) 1 and 3 only
(D) All of the above

162. Entrapment of small intestine in the epiploic foramen is associated with an array of clinical signs like

1. Strangulation of small intestine through the epiploic foramen typically causes signs of acute abdominal pain

2. Nasogastric intubation may cause reflux of material through a nasogastric tube

3. Horses with less severe clinical signs presumably have longer lengths of incarcerated small intestine

4. Distended small intestine can usually be palpated per rectum

Which of the statements given above are correct?

(A) All the statements are correct **(B) Only 1, 2 and 3 are correct**

(C) Only 1 and 2 are correct **(D) Only 3 and 4 are correct**

163. Consider the following statements about National Extension Service Programme (N.E.S.).

1. This programme was formulated in 1953.

2. The National Extension Service Programme has different idea than Community Development (CD).

3. Both the programmes were complementary and interwoven and ran concurrently.

4. The idea behind the programme was to cover the entire country within a period of 5 years.

Which of the statements given above are correct?

(A) 1 and 2 are correct **(B) 1 and 3 are correct**

(C) 1, 2 and 3 are correct **(D) 1, 3 and 4 are correct**

164. Molybdenum sulfur and copper are all intimately involved in the development of molybdenum poisoning. Consider the following statements.

1. Most signs of molybdenum poisoning result from some form of copper deficiency

2. The situation is exacerbated by a low intake of sulfur

3. Molybdenum intoxication syndrome resembles that of copper deficiency

4. Treatment and prevention by the administration of copper is effective

Which of the statements given above are correct?

(A) 1 and 2 are correct **(B) 2 and 3 are correct**

(C) 1, 2 and 3 are correct **(D) 1, 3 and 4 are correct**

165. Consider the following statements about the right-sided displacement of abomasum.

1. Fluid-filled viscus under right costal arch can be observed
2. Alkalosis may develop
3. Hypochloremia and hypokalemia may develop
4. Treatment includes calcium borogluconate intravenously

Select the most correct answer.

(A) 1 and 2 are correct
(B) 1, 2 and 3 are correct
(C) 1, 2 and 4 are correct
(D) All are correct

166. Actinomycosis of the jaw commences as a painless, bony swelling which appears on the mandible or maxilla, usually at the level of the central molar teeth. Consider the following statements.

1. The discharge of pus of actinomycosis is sticky, honey-like fluid containing minute, hard yellow-white granules.
2. There is a tendency for the sinuses to heal and for fresh ones to develop periodically.
3. Involvement of the local lymph nodes occurs.

Select the most correct answer.

(A) 1 and 3 only are correct
(B) 2 and 3 only are correct
(C) 1 and 2 only are correct
(D) All are correct

167. Consider the following statements about the Audio-visual aids.

1. Audio-visual aids will not automatically increase teaching effectiveness.
2. While preparing the aids, the structure of the message must be carefully planned.
3. Audience nearly always pick up much irrelevant information.
4. There is no best teaching aid suitable for all situations.

Which of the statements given above are correct?

(A) 1, 2 and 3 are correct
(B) 2, 3 and 4 are correct
(C) 1, 2 and 4 are correct
(D) All are correct

168. Consider the following statements about African swine fever.

1. It is characterized by a high fever (40.5° C; 105° F) without other apparent signs for about 4 days.
2. The fever then subsides and the pigs show marked cyanotic blotching of the skin.
3. Coordination remains in the hind legs and affected pigs may walk on them, but incoordination in the front legs.

Which of the statements given above are correct?

(A) Only 1 and 2 are correct
(B) Only 2 and 3 are correct
(C) Only 1 and 3 are correct
(D) All are correct

169. Consider the following statements about Johne's disease.

1. It is caused by *Mycobacterium avium* subsp. *paratuberculosis*.
2. The main route of transmission of paratuberculosis is oral.
3. It causes chronic or recurrent progressive intractable diarrhea.

Which of the statements given above are correct?

(A) 1 and 3 only
(B) 2 and 3 only
(C) 1 and 2 only
(D) All of the above

170. Consider the following statements about Infectious bovine keratoconjunctivitis or pink eye of cattle.

1. *Moraxella bovis* is the primary pathogen.
2. Cattle are the only known reservoir for the bacteria.
3. UV radiation is a predisposing factor.
4. Corneal ulceration may occur.

Which of the statements given above are correct?

(A) 1, 2 and 3 only
(B) 1 and 3 only
(C) 2 and 4 only
(D) All the four

171. Consider the following statements regarding ketosis.

1. Hepatic insufficiency has been shown to occur in bovine ketosis, but it does not occur in all cases.
2. It commonly occurs in early lactation dairy cows.
3. Negative energy balance is an important risk factor.
4. Low serum concentrations of glucose and consequently high serum concentrations of insulin are seen in ketosis.

Which of the statements given above are correct?

(A) 1, 2 and 3 only
(B) 1 and 4 only
(C) 2 and 4 only
(D) All statements are correct

172. Acute lactation tetany shows the clinical signs such as

1. The animal suddenly adopts a posture of unusual dullness
2. There is severe hyperesthesia
3. The gait becomes staggering
4. The animal falls with obvious tetany of the limbs

Which of the statements given above are correct?

(A) 1 and 2 are correct
(B) 1, 2 and 3 are correct
(C) 2, 3 and 4 are correct
(D) All are correct

173. Minimal gestational ages for viability (in days) for each of the species are as follows:

1. Calf-240
2. Foal-260
3. Lamb-100
4. Piglet-108

Which of the statements given above are correct?

(A) Only 1 and 2 are correct
(B) Only 1, 2 and 3 are correct
(C) Only 1 and 4 are correct
(D) Only 2 and 3 are correct

174. Consider the following statements regarding the anatomy of vertebral muscles.

1. The epaxial muscles lie dorsal to the transverse processes of the vertebrae.
2. The epaxial muscles lie lateral to the transverse processes of the vertebrae.
3. The epaxial muscles receive their nerve supply from the dorsal branches of the spinal nerves.

Which of the above statements are correct?

(A) 1, 2 and 3
(B) 1 and 2 only
(C) 1 and 3 only
(D) 2 and 3 only

175. Consider the following statements about network.

1. LAN stands for large area network.
2. LAN stands for local area network.
3. WAN stands for website access network.
4. WAN stands for wide area network.

Which of the statements given above are correct?

(A) 1 and 3 are correct
(B) 1 and 4 are correct
(C) 2 and 3 are correct
(D) 2 and 4 are correct

176. Consider the following statements about fracture repair in large ruminants.

1. Economic value influences fracture treatment decisions.
2. Fracture configuration affects selection of fixation technique.
3. Some fractures can be treated non-surgically.
4. Postoperative management affects outcome.

Which of the statements given above are correct?

(A) 1, 2 and 4 only
(B) 1, 2 and 3 only
(C) 2, 3 and 4 only
(D) 1, 2, 3 and 4

177. Consider the following statements about the articular cartilage.

1. Articular cartilage has poor vascular supply
2. It has less number of cells
3. It contains many lymphatics
4. Regenerates rapidly

Which of the statements given above are correct?

(A) 1 and 2 are correct
(B) 2 and 3 are correct
(C) 1, 2 and 3 are correct
(D) 1, 2 and 4 are correct

178. Consider the following statements regarding the pharynx.

1. The pharynx is common to both the digestive and respiratory systems.
2. It is divided into nasopharynx, oropharynx and laryngopharynx.
3. Swallowing is initiated entirely by involuntary reflexes.
4. The soft palate contributes to separation of the oral and nasal parts of the pharynx.

Which of the above statements are correct?

(A) 1 and 3 only
(B) 2, 3 and 4 only
(C) 1, 2 and 4 only
(D) 1, 2, 3 and 4

179. Consider the following statements regarding the lungs of domestic mammals.

1. The left lung is divided into cranial and caudal lobes.
2. The right lung generally consists of cranial, middle, caudal and accessory lobes.
3. Pulmonary lobes are defined solely by the external interlobar fissures.
4. The right lung of the horse lacks a middle lobe.

Which of the above statements are correct?

(A) 1, 2 and 3 only
(B) 1, 2 and 4 only
(C) 2 and 3 only
(D) 1, 2, 3 and 4

180. Consider the following statements regarding lymphatic drainage of the lungs.

1. Pulmonary lymph drains to the tracheobronchial lymph nodes.
2. Mediastinal lymph nodes also receive pulmonary lymph.
3. Small intrapulmonary lymph nodes may occur along the bronchial tree.

Which of the above statements are correct?

(A) 1, 2 and 3
(B) 1 and 2 only
(C) 2 and 3 only
(D) 1 and 3 only

181. Consider the following statements regarding the development of the respiratory apparatus:

1. The larynx, trachea and lungs arise as a ventral outgrowth of the foregut.
2. The respiratory epithelium is derived from endoderm.
3. Surfactant production begins early in embryonic development and is complete during the glandular stage.

Which of the above statements are correct?

(A) 1 and 3 only
(B) 1 and 2 only
(C) 2 and 3 only
(D) 1, 2 and 3

182. Consider the following statements regarding the pituitary gland (hypophysis).

1. The pituitary gland lies within the hypophyseal fossa of the sphenoid bone.
2. It consists of adenohypophysis and neurohypophysis.
3. The adenohypophysis develops from epithelial outgrowth of the roof of the developing mouth.
4. Neurohypophysis develops by a downgrowth of the hypothalamus.

Which of the above statements are correct?

(A) 1, 2 and 3 only
(B) 2 and 4 only
(C) 1 and 3 only
(D) All of the above

183. Consider the following statements regarding the adrenal (suprarenal) glands.

1. The adrenal glands are located near the cranial poles of the kidneys.
2. Each adrenal gland consists of an outer cortex and an inner medulla.
3. The adrenal cortex is derived from mesoderm.
4. Catecholamines are secreted by the adrenal cortex.

Which of the above statements are correct?

(A) 1, 2 and 3 only
(B) 1 and 4 only
(C) 2, 3 and 4 only
(D) 1, 2, 3 and 4

184. Consider the following statements regarding the conducting system of the heart.

1. The sinoatrial (SA) node is the normal pacemaker of the heart.
2. The atrioventricular (AV) node is situated near the interatrial septum.
3. The atrioventricular bundle (Bundle of His) provides the normal electrical connection between the atria and ventricles.
4. Purkinje fibers are distributed throughout the ventricular myocardium.

Which of the above statements are correct?

(A) 1 and 4 only
(B) 2 and 3 only
(C) 1, 2 and 3 only
(D) 1, 2, 3 and 4

185. Consider the following statements regarding the ovary:
1. The ovary contains follicles at different stages of development.
2. The corpus luteum develops after ovulation.
3. The medulla is the principal site of follicular development.
4. The ovary produces both steroid hormones and gametes.

Options:

(A) 1, 2 and 3 are correct
(B) 1, 2 and 4 are correct
(C) 1, 3 and 4 are correct
(D) All are correct

186. Consider the following statements regarding the uterus and cervix.
1. The endometrium undergoes cyclic changes during the estrous cycle.
2. The myometrium consists mainly of smooth muscle.
3. The cervix acts as a physical barrier to ascending infection.
4. Estrogen generally increases cervical mucus secretion.

Which of the statements given above are correct?

(A) 1, 2 and 3 are correct
(B) 1, 2 and 4 are correct
(C) 1, 3 and 4 are correct
(D) 1, 2, 3 and 4 are correct

187. Consider the following statements regarding the male reproductive system:
1. Sertoli cells produce testosterone.
2. Leydig cells support developing germ cells.
3. The pampiniform plexus assists in heat exchange.
4. The cremaster muscle contributes to regulation of testicular position.

Which of the statements given above are correct?

(A) 1 and 2 are correct
(B) 2 and 3 are correct
(C) 3 and 4 are correct
(D) 2, 3 and 4 are correct

188. Consider the following statements regarding food from livestock.
1. Milk is the wholesome food, balanced in protein, fat, carbohydrates, vitamins and minerals.
2. It is virtually an elixir nourishing the young and old alike, including the sick.
3. Milk is the second largest agricultural commodity next to wheat.
4. Milk, meat, egg, wool, etc, contribute about 8.5% of GDP of the country.

Which of the statements given above are correct?

(A) 1, 2 and 3 are correct
(B) 1, 2 and 4 are correct
(C) 1 and 2 are correct
(D) 3 and 4 are correct

189. Consider the following statements.

1. The corpus luteum develops from the ovulated follicle.
2. Diestrus is characterized by dominance of progesterone.
3. Progesterone is the principal hormone secreted by the corpus luteum.
4. Prostaglandin $F_2\alpha$ induces luteolysis in many domestic species.

Which of the statements given above are correct?

(A) 1, 2 and 4 are correct
(B) 1, 3 and 4 are correct
(C) 2, 3 and 4 are correct
(D) All are correct

190. Consider the following statements regarding placental classification.

1. Ruminants possess a cotyledonary placenta.
2. Carnivores possess a zonary placenta.
3. Sows possess a discoid placenta.
4. Mares possess a diffuse placenta.

Which of the statements given above are correct?

(A) 1, 2 and 3 are correct
(B) 1, 2 and 4 are correct
(C) 2, 3 and 4 are correct
(D) 1, 3 and 4 are correct

191. Prior to artificial insemination, semen evaluation is an essential procedure to check the quality of semen, which includes assessment of

1. Sperm morphology
2. Sperm concentration
3. Forward movement of sperm
4. Sperm division

Which of the statements given above are correct?

(A) Only 1 and 2 are correct
(B) Only 1 and 3 are correct
(C) Only 1, 2 and 3 are correct
(D) All are correct

192. Consider the following statements regarding semen preservation.

1. Semen extender is used mainly to maintain sperm viability during storage
2. Cryopreservation of semen is performed using liquid nitrogen
3. The commonly used cryoprotectant in semen freezing is glucose
4. Frozen semen is commonly stored in plastic straws

Which of the statements given above are correct?

(A) Only 1 and 2 are correct
(B) Only 1, 2 and 3 are correct
(C) Only 1, 2 and 4 are correct
(D) All are correct

193. Consider the following statements about the parturition.

1. The hormone mainly responsible for uterine contractions during parturition is oxytocin
2. The first stage of parturition is characterized by expulsion of fetus
3. The second stage of parturition involves placental separation
4. The third stage of parturition involves expulsion of fetal membranes

Which of the statements given above are correct?

(A) Only 1 and 2 are correct
(B) Only 1, 2 and 3 are correct
(C) Only 1 and 3 are correct
(D) All are correct

194. Season has an important role in the breeding pattern of some animals.

Consider the following statements.

1. Mare is classified as non-seasonal breeder
2. Buffaloes are generally classified as seasonal breeder
3. The mare is classified as monoestrous animal
4. The mare is classified as seasonally polyestrous animal

Which of the statements given above are correct?

(A) Only 1 and 2 are correct
(B) Only 1, 2 and 3 are correct
(C) Only 2, 3 and 4 are correct
(D) Only 2 and 4 are correct

195. Consider the following statements about the canine reproduction.

1. The bitch is classified as polyestrous
2. The bitch is classified as monoestrous
3. Ovulation in the bitch occurs during oestrus
4. Ovulation in the bitch occurs after oestrus

Which of the statements given above are correct?

(A) Only 1 and 3 are correct
(B) Only 2 and 3 are correct
(C) Only 2 and 4 are correct
(D) Only 1 and 4 are correct

196. Regarding the genesis of extension, consider the following statements:

1. The term "extension" was formally used for the first time by Cambridge University in 1873.
2. James Stuart is regarded as the Father of Extension.
3. Animal husbandry extension emerged in Australia as early as 1889.
4. Agricultural extension developed earlier than university extension.

Which of the above statements are correct?

(A) 1, 2 and 3 only
(B) 1, 3 and 4 only
(C) 2, 3 and 4 only
(D) 1, 2, 3 and 4

197. Consider the following statements regarding extension education.

1. Extension is education for farmers, farm women, youth and villagers.

2. Extension aims to change knowledge, skills and attitudes.

3. Extension mainly provides free services without emphasizing education.

4. Extension works with men and women irrespective of age and sex.

Which of the above statements are correct?

(A) 1 and 3 only **(B) 2 and 3 only**

(C) 1, 2 and 4 only **(D) 1, 2, 3 and 4**

198. Regarding the characteristics of extension, consider the following statements.

1. Extension helps convert unfelt needs into felt needs.

2. Balanced feeding becomes a felt need after proper education.

3. Extension encourages local leadership.

4. Extension contributes to individual, community and societal development.

Which of the above statements are correct?

(A) 1, 2 and 4 only **(B) 1 and 3 only**

(C) 2 and 3 only **(D) 1, 2, 3 and 4**

199. Consider the following statements regarding the two-way channel of extension:

1. Research findings are transferred to farmers through extension workers.

2. Farmers' field problems are communicated back to researchers.

3. Extension workers have responsibility toward farmers.

4. The extension system facilitates continuous feedback between farmers and researchers.

Which of the above statements are correct?

(A) 1, 2 and 4 only **(B) 1 and 3 only**

(C) 2 and 3 only **(D) 1, 2, 3 and 4**

200. Consider the following statements regarding the components of extension.

1. Extension consists of Extension Education, Extension Service and Extension Work.

2. Extension Education is research-based and focuses on educational methodology.

3. Extension Service bridges the gap between research and farmers.

4. Extension Work emphasizes helping people become self-reliant through education.

Which of the above statements are correct?

(A) 1, 2 and 3 only **(B) 1, 2, 3 and 4**

(C) 1, 3 and 4 only **(D) 2, 3 and 4 only**

———————