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Test Booklet Series

T. B. C. : VS – 2-22/23

A

TEST BOOKLET

VETERINARY ASSISTANT SURGEON

2233

PAPER – II

Sl. No.

(ANIMAL SCIENCE)

Time Allowed : 2½ Hours

Maximum Marks : 400

: INSTRUCTIONS TO CANDIDATES :

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5. This Test Booklet contains **200** items (questions). Each item (question) comprises four responses (answers). You have to select the correct response (answer) which you want to mark (darken) on the Answer Sheet. In case, you feel that there is more than one correct response (answer), you should mark (darken) the response (answer) which you consider the best. In any case, choose **ONLY ONE** response (answer) for each item (question).
6. You have to mark (darken) all your responses (answers) **ONLY** on the **separate Answer Sheet** provided, by using **BALL POINT PEN (BLUE OR BLACK)**. See instructions in the Answer Sheet.
7. All items (questions) carry equal marks. All items (questions) are compulsory. Your total marks will depend only on the number of correct responses (answers) marked by you in the Answer Sheet. **There will be no negative marking for wrong answers.**
8. Before you proceed to mark (darken) in the Answer Sheet the responses (answers) to various items (questions) in the Test Booklet, you have to fill in some particulars in the Answer Sheet as per the instructions sent to you with your **Admission Certificate**.
9. After you have completed filling in all your responses (answers) on the Answer Sheet and after conclusion of the examination, you should hand over to the Invigilator the **Answer Sheet** issued to you. You are allowed to take with you the candidate's copy / second page of the Answer Sheet along with the **Test Booklet**, after completion of the examination, for your reference.
10. Sheets for rough work are appended in the Test Booklet at the end.

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JT – 2A/22

(Turn over)

1. The number of globin chains present in haemoglobin molecule :
(A) One
(B) Two
(C) Three
(D) Four
2. Among the following the lifespan of erythrocyte is less in :
(A) Horse
(B) Goat
(C) Sheep
(D) Chicken
3. In ECG depolarization of atria causes :
(A) QRS complex
(B) Invert T wave
(C) T wave
(D) P wave
4. Velocity of nerve impulse conduction in type C nerve fibre is _____ metres / sec.
(A) 40 – 70
(B) 0.2 – 2
(C) 3 – 14
(D) None of these
5. The substance associate with total body water :
(A) T – 1824
(B) Antipyrine
(C) Inulin
(D) All of these
6. Regarding the events of the cardiovascular cycle :
(A) Atrial diastole is longer than ventricular diastole
(B) Ventricular systole is longer than ventricular diastole
(C) Ventricular systole is longer than atrial diastole
(D) Ventricular systole is longer than atrial diastole
7. The RBC count / unit volume of blood is highest in :
(A) Dog
(B) Cattle
(C) Goat
(D) Horse
8. Liver function test used to detect the presence of bilirubin :
(A) SGPT test
(B) Van Den Berg test
(C) Iodine test
(D) Takata-Ara test
9. In the following ESR is greatest in :
(A) Man
(B) Dog
(C) Cattle
(D) Horse

10. Catecholamines induce :
- Only positive inotropy
 - Positive chronotrophy and negative inotrophy
 - Only positive chronotrophy
 - Both positive inotrophy and chronotrophy
11. Rumen metabolism is inhibited in the presence of :
- Carbondioxide
 - Methane
 - Oxygen
 - Nitrogen
12. Cattle of high altitude has :
- Higher haemoglobin affinity to oxygen
 - Decrease in PCV
 - Increase in RBC count and Hb
 - None of these
13. Peak in right ventricular pressure in dog is about :
- 25 torr
 - 8 torr
 - 10 torr
 - 12 torr
14. Which of the following reactions takes place rapidly ?
- $\text{Hb}_4 + \text{O}_2 \rightarrow \text{Hb}_4\text{O}_2$
 - $\text{Hb}_4\text{O}_2 + \text{O}_2 \rightarrow \text{Hb}_4\text{O}_4$
 - $\text{Hb}_4\text{O}_4 + \text{O}_2 \rightarrow \text{Hb}_4\text{O}_6$
 - $\text{Hb}_4\text{O}_6 + \text{O}_2 \rightarrow \text{Hb}_4\text{O}_8$
15. The part of nephron which is completely impermeable to water ?
- PCT
 - DCT
 - Thin portion of Loop of Henle
 - Thick portion of Loop of Henle
16. Tapetum of the eye is absent in :
- Dog
 - Cattle
 - Pig
 - Cat
17. One of the arterial blood carries _____ ml oxygen in physical solution.
- 0.13
 - 0.042
 - 0.026
 - 0.056
18. Example of an organ having both endocrine and bodily function is :
- Adrenal
 - Pancreas
 - Parathyroid
 - Pituitary

19. Precursor of steroid hormone synthesis :
 - (A) Cholesterol
 - (B) Amino acids
 - (C) Aldosterone
 - (D) Adrenalin
20. Thymus undergoes atrophy under the influence of :
 - (A) Insulin
 - (B) Adrenalin
 - (C) Cortisone
 - (D) Aldosterone
21. The growth of lobules and alveoli of mammary gland is produced by the hormones :
 - (A) Progesterone and prolactin
 - (B) Prolactin and oestrogen
 - (C) Progesterone and oestrogen
 - (D) Oestrogen and insulin
22. Testosterone is circulated in combination with :
 - (A) Corticosteroid binding globulin
 - (B) Sex hormone binding globulins
 - (C) Prealbumin
 - (D) Thyroglobulin
23. Heart beat per minute in elephant is around :
 - (A) 30
 - (B) 240
 - (C) 120
 - (D) 500
24. The average time of implantation in Doe :
 - (A) 30-35 days after conception
 - (B) 20-25 days after conception
 - (C) 20-25 days before parturition
 - (D) 14-19 days after ovulation
25. The transport of ova to the site of fertilisation is augmented by :
 - (A) Oxytocin and Progesterone
 - (B) Oestrogen and Progesterone
 - (C) Oxytocin and Prostaglandin
 - (D) Oxytocin and Hyaluronidase
26. The sperms of the dog retains the fertilizing capacity in the genital tract of the bitch :
 - (A) For 24 hours
 - (B) For 2 hours
 - (C) For 90 hours
 - (D) Till second mating occurs
27. The accuracy of estimating progesterone level in cow's milk as a pregnancy test is maximal when done at _____ days after mating.
 - (A) 5
 - (B) 17 - 21
 - (C) First week
 - (D) 7 - 8

28. The PCV of a Haematocrit refers to :
 (A) White cell and thrombocyte layer between erythrocyte mass and plasma
 (B) The yellowish layer at the top of the haematocrit
 (C) The total length of the haematocrit tube content
 (D) The erythrocyte mass at the bottom
29. _____ is a long day breeder.
 (A) Mare
 (B) Goat
 (C) Sheep
 (D) Buffalo
30. Which extension method is used to show the worth of practice ?
 (A) Method demonstration
 (B) Farm and Home visit
 (C) Result demonstration
 (D) Personal contact
31. The AGMARK label for special grade chicken egg :
 (A) White
 (B) Blue
 (C) Yellow
 (D) Red
32. Extension teaching methods are classified according to function as :
 (A) Individual, Group, Mass contact
 (B) Written, Spoken and visual
 (C) Telling, Sharing and Doing
 (D) None of these
33. Scarcity definition of economics was given by :
 (A) Adam Smith
 (B) Lionel Robbins
 (C) Alfred Marshall
 (D) J. S. Mill
34. Market with single buyer is :
 (A) Monopoly
 (B) Monopsony
 (C) Oligopoly
 (D) None of these
35. Supply curve is :
 (A) Upward sloping curve
 (B) Downward sloping curve
 (C) Horizontal line
 (D) Vertical line
36. Mutton and Chicken are examples of :
 (A) Joint products
 (B) Substitute products
 (C) Complementary products
 (D) None of these
37. Factor-Factor relationship answers the question :
 (A) How to produce
 (B) What to produce
 (C) How much to produce
 (D) All of these

38. On the basis of volume of business, markets are classified as :
- Bullion market
 - Regional market
 - Village market
 - Wholesale market
39. The tendency of the people to feel their culture as the best is called as :
- Ethnocentrism
 - Egoism
 - Stratification
 - Altruism
40. The testing of innovation on a small scale by a farmer is called as :
- Awareness stage
 - Adoption stage
 - Trial stage
 - Interest stage
41. Greater risk is involved in :
- Diversified farming
 - Specialized farming
 - Mixed farming
 - Integrated farming
42. Which of the following states has more milk production ?
- Punjab
 - Gujarat
 - Tamil Nadu
 - Uttar Pradesh
43. The objective of TRYSEM is to provide _____ to rural youth.
- Technical skill
 - Assets
 - Technical input
 - Credits
44. Which one is example of variable input in a dairy farm ?
- Farm manager's salary
 - Wages to labour
 - Cost on permanent labour
 - Feed cost
45. At the point of interaction of demand and supply :
- Demand > Supply
 - Demand = Supply
 - Demand < Supply
 - Demand = Zero
46. Function of Zilla Parishad :
- Approval of Panchayat Samiti Budget
 - Elementary School Education
 - Approval of Village Panchayat Budget
 - Approval State Budget
47. The scalar principle is called :
- Extension principle
 - Cooperative principle
 - Hierarchical principle
 - Education principle

48. A business liabilities of Rs. 15,000 and owner's equity is Rs. 25,000. What is the amount of its assets ?
 (A) Rs. 10,000
 (B) Rs. 40,000
 (C) Rs. 65,000
 (D) Rs. 25,000
49. Indian Institute of Entrepreneurship (IIE) was established in the year 1993 at :
 (A) New Delhi
 (B) Mumbai
 (C) Gwalior
 (D) Guwahati
50. The point where isocost line is tangent to isoquant is called the point of :
 (A) Least cost combination
 (B) Inflection
 (C) Optimum product combination
 (D) Deflection
51. The unique feature of KVK is :
 (A) Organising OFT
 (B) Conducting Trainings
 (C) Refining Technologies
 (D) Non-uniform Syllabus
52. Absence of personal touch is the limitation in :
 (A) Demonstration
 (B) News letter
 (C) Telephone
 (D) Advisory letter
53. When cricket players wear the logo of Amul in T-shirts during play, then it is called as :
 (A) Celebrity advertising
 (B) Global advertising
 (C) Covert advertising
 (D) TV commercials
54. Veterinary surgeon is an example for :
 (A) Informal leader
 (B) Professional leader
 (C) Lay leader
 (D) Prominent leader
55. Human element receives primary emphasis in _____ marketing approach.
 (A) Functional
 (B) Commodity
 (C) Behavioural system
 (D) Institutional
56. Transactions relating to properties and cash fall under the account of :
 (A) Personal account
 (B) Real account
 (C) Nominal account
 (D) Capital account

57. In Adenosine, the sugar and the base is attached through :
 (A) $\alpha 1 \rightarrow 9N$ -glycosidic bond
 (B) $\alpha 1 \rightarrow 3N$ -glycosidic bond
 (C) $\beta 1 \rightarrow 9N$ -glycosidic bond
 (D) $\beta 1 \rightarrow 3N$ -glycosidic bond
58. Mucopolysaccharide which acts as anticoagulant is :
 (A) Heparin
 (B) Dextrin
 (C) Inulin
 (D) Murein
59. The T_m of DNA depends on :
 (A) GC content of the DNA
 (B) AT content of the DNA
 (C) Phosphodiester bond
 (D) Content of modified bases
60. Edman degradation is performed to detect :
 (A) N-terminal amino acid
 (B) C-terminal amino acid
 (C) Amino acid sequences
 (D) Both (A) and (C)
61. Molecular size of the fatty acids can be determined from :
 (A) Iodine value
 (B) Saponification value
 (C) Acid value
 (D) RM value
62. Beta ionone ring is present in :
 (A) Retinol
 (B) Inositol
 (C) Indole Acetic Acid
 (D) Thiamine
63. This class of compounds act as coenzyme :
 (A) Water Soluble Vitamins
 (B) Fat Soluble Vitamins
 (C) Aminosugars
 (D) B Complex Vitamins
64. During protein synthesis _____ of mRNA interact with 3' end of 16s rRNA.
 (A) Shine Dalgarno Region
 (B) Pribnow bond
 (C) Goldberg Hogness box
 (D) GC-box
65. In PCR, the optimum temperature for the DNA synthesis is :
 (A) 94°C
 (B) 72°C
 (C) 37°C
 (D) 55°C
66. In a 100m Sprint, the first fuel to be used is :
 (A) Glucose
 (B) Ketones
 (C) Glycogen
 (D) Creatine Phosphate

67. The followig is the main forms of digestion gas produced by rumen :
- C_2H_2
 - O_2
 - CH_4
 - C_3H_8
68. The amino acid which disrupts the alpha helical structure of protein is :
- Phenylalanine
 - Proline
 - Histidine
 - Tryptophan
69. The coenzyme required for the transfer of amino group by transaminase enzyme is :
- Niacin
 - Pantothenic acid
 - Pyridoxal Phosphate
 - Riboflavin
70. In birds, uric acid is formed by the Metabolism of :
- Protein
 - Purine
 - Protein and Purines
 - Pyrimidines
71. DNA foot printing is used to :
- Sequence DNA
 - To detect mutation in the origin of the replication
 - To detect alteration in promoter sequence
 - None of these
72. Mannitol and Sorbitol are the reductive product of :
- Glucose
 - Mannose
 - Galactose
 - Fructose
73. Protamine are rich in :
- Basic amino acids
 - Acidic amino acids
 - Neutral amino acids
 - None of these
74. At $0^\circ C$, the dissociation constant (K_w) of water is :
- $1 \times 10^{-14} M^2$
 - $0.05 \times 10^{-14} M^2$
 - $48 \times 10^{-14} M^2$
 - $0.5 \times 10^{-14} M^2$
75. Which of the following protein is chromo protein ?
- Nucleoprotein
 - Casein
 - Haemoglobin
 - Chondroprotein

76. All of the following hormones exit as glycoprotein hormone except :
(A) TSH
(B) ACTH
(C) FSH
(D) LH
77. Which of the following amino acids are represents by only one codon ?
(A) Methionine and Tyrosine
(B) Methionine and Tryptophan
(C) Tyrosine and Tryptophan
(D) None of these
78. The product of hexose mono-phosphate shunt are :
(A) NADH and Pentose Phosphate
(B) NADPH and Pentose Phosphate
(C) FADH and Pentose Phosphate
(D) FADH₂ and Pentose Phosphate
79. Most of the chronic toxic effects of alcohol is due to :
(A) Acetaldehyde
(B) Acetate
(C) Sorbitol
(D) Ethanolamine
80. The product of oxidation of odd chain fatty acids will be :
(A) Acetyl CoA
(B) Propionyl CoA
(C) Both Acetyl and Propionyl CoA
(D) None of these
81. Which of the following is not a method of fatty acid oxidation ?
(A) α Oxidation
(B) β Oxidation
(C) γ Oxidation
(D) Omega Oxidation
82. An intermediate of TCA cycle required for the synthesis of heme :
(A) Succinic acid
(B) Succinyl CoA
(C) ∞ -ketoglutaric acid
(D) Oxaloacetate
83. Catecholamines are excreted as :
(A) Metanephrines
(B) 3,4-dihydroxyphenylethylamine
(C) Methyl dihydroxyphenylamine
(D) 3-methoxy-4-hydroxymandelic acid
84. Match the order :
(a) FMN (i) β -oxidation
(b) F. Knoop (ii) Riboflavin
(c) Molybdenum (iii) Chemiosmotic theory
(d) HMG CoA synthase (iv) Xanthine oxidase
(v) Ketone body products
(A) (iv), (i), (ii), (v)
(B) (i), (iii), (v), (ii)
(C) (ii), (i), (iv), (v)
(D) (iii), (i), (ii), (iv)

85. Regression of future performance on past performance is called :
 (A) Heritability
 (B) Repeatability
 (C) Selection differential
 (D) None of these
86. Which is the efficient method of selection ?
 (A) Tandem selection
 (B) Independent Culling selection
 (C) Pedigree selection
 (D) Selection Index
87. The proportionate contribution of offspring to the next generation is called :
 (A) Heritability
 (B) Correlation
 (C) Fitness
 (D) Dominance
88. The genes carried on X chromosomes are called :
 (A) Sex limited genes
 (B) Sex influenced genes
 (C) Sex linked genes
 (D) Holandric genes
89. Inbreeding coefficient of an offspring of a full brother sister mating is :
 (A) 12.5%
 (B) 25%
 (C) 30%
 (D) 66.6%
90. A typical pedigree will provide an ancestry of :
 (A) 2 generations
 (B) 4-6 generations
 (C) 3 generations
 (D) 10 generations
91. Lactation length in cattle is standardized to :
 (A) 300 days basis
 (B) Day basis
 (C) 365 days basis
 (D) 305 days basis
92. Inbreeding coefficient is a measure of relative loss of :
 (A) Homozygosity
 (B) Unfavourable genes
 (C) Heterozygosity
 (D) None of these
93. Dual purpose cattle breed of India :
 (A) Haryana
 (B) Sahiwal
 (C) Gir
 (D) Nimari

94. Chromosomes involved in crossing over are :
- (A) Homologous
(B) Non-homologous
(C) Large
(D) Small
95. Rotational crossing over is favoured in :
- (A) Swine
(B) Cattle
(C) Chicken
(D) Horse
96. The diploid (2n) chromosome number in dog is :
- (A) 38
(B) 42
(C) 78
(D) 60
97. Mutations caused by the movement of hydrogen atoms from one position in a nitrogenous base to another within the DNA is called :
- (A) Frameshift
(B) Transversion
(C) Crossing over
(D) Tautomeric shifts
98. Genes controlling sex influenced traits are located on :
- (A) Autosomes
(B) X chromosomes
(C) Y chromosomes
(D) Z chromosomes
99. Heritability in broad sense is :
- (A) V_A / V_P
(B) V_G / V_P
(C) $V_G + V_A / V_P$
(D) $V_G + V_P$
100. Father of Modern Animal Breeding :
- (A) J. L. Lush
(B) Robert Bakewell
(C) R. A. Fisher
(D) Friedrich Meischer
101. _____ is the one of the most important mechanism for the generation of new combination of genes.
- (A) Linkages
(B) Mutation
(C) Crossing over
(D) Translocation
102. A 9 : 3 : 4 phenotypic ratio in a dihybrid cross indicates the action of :
- (A) A dominant epistatic gene
(B) A recessive epistatic gene
(C) A dominant pleiotropic gene
(D) Duplicate recessive gene

103. Mating of animals with similar phenotype is called :

- (A) Incrossing
- (B) Random mating
- (C) Assortative mating
- (D) Inter semating

104. In reciprocal recurrent selection, the parents are selected based on the performance of :

- (A) Sires
- (B) Dams
- (C) Progenies
- (D) Identical twins

105. Selection differential is equal to selection response when the heritability is equal to :

- (A) Zero
- (B) One
- (C) 50%
- (D) 75%

106. An example for out breeding is :

- (A) Brahman \times Shorthorn crossing
- (B) Half sib crossing
- (C) Full sib crossing
- (D) Sire \times Daughter crossing

107. Most popular form of cross breeding employed by swine breeders is :

- (A) Rotational crossbreeding

(B) Two way crossing

(C) Out crossing

(D) Top crossing

108. Exchange of parts between non-homologous chromosome is known as :

- (A) Crossing over
- (B) Linkages
- (C) Translocation
- (D) Inversion

109. Cell organelle involved in maternal inheritance is :

- (A) Centriole
- (B) Plasmid
- (C) Ribosome
- (D) Mitochondria

110. Chromosome component in Turners Syndrome is :

- (A) $2n + 2$
- (B) $2n - 2$
- (C) $2n - 1$
- (D) $2n + 1$

111. The mean environmental deviation in a random mating population is :

- (A) Unity
- (B) Zero
- (C) 100%
- (D) 50%

112. Exchange between homologous chromosome take place in :

- (A) Diplotene stage
- (B) Zygotene stage
- (C) Pachytene stage
- (D) Metaphase stage

113. Match in order :

- | | |
|-----------------|----------------------|
| (a) Karakul | (i) Pig |
| (b) Merino | (ii) Draught purpose |
| (c) Amrithmahal | (iii) Pelt |
| (d) Boer | (iv) Fine wool |
| | (v) Goat |

- (A) (iii), (iv), (ii), (v)
- (B) (v), (ii), (iii), (i)
- (C) (i), (ii), (iii), (iv)
- (D) (iv), (iii), (ii), (i)

114. Order of susceptibility to aflatoxin poisoning :

- (A) Ducks > goose > turkey > chicken
- (B) Chicken > duck > goose = turkey
- (C) Duck = chicken > turkey > goose
- (D) Duck > turkey > goose > chicken

115. Vitamin E deficiency in cattle causes :

- (A) Encephalomalacia

(B) Falling disease

(C) Parakeratosis

(D) Muscular dystrophy

116. Quantity of green fodder that can be replaced by 1 kg of paddy straw on DM basis :

- (A) 4
- (B) 20
- (C) 8.5
- (D) 10

117. Biological value of bacterial protein :

- (A) 90
- (B) 85
- (C) 74
- (D) 66

118. Percentage of NDF in total ration which is critical for maintenance of normal milk fat is _____

- (A) 66%
- (B) 18%
- (C) 73%
- (D) 36%

119. Mineral whose deficiency causes infertility in males due to its presence in the component of the enzyme thymidine kinase :

- (A) Copper
- (B) Boron
- (C) Zinc
- (D) Iodine

120. Rumen microbe with mimosine hydrolyzing activity :

- (A) *Synergistes jonesii*
- (B) *Entodinium caudatum*
- (C) *Streptococcus caprinus*
- (D) *Selenomonas ruminantium*

121. DCP requirement for maintenance in cattle is :

- (A) 2.84 g / kg B. wt
- (B) 2.84 g / kg $W^{0.75}$
- (C) 28.4 g / kg $W^{0.75}$
- (D) 28.4 g / kg B. wt

122. The normal level of ammonia in rumen for maximum utilisation is _____ / dl.

- (A) 2 – 3 mg
- (B) 12 mg
- (C) 5 – 8 mg
- (D) 20 mg

123. Metabolizable energy requirement for broiler starter as per BIS 2007 :

- (A) 3200 M cal / kg
- (B) 3100 K cal / kg
- (C) 3100 KJ / kg
- (D) 3200 KJ / kg

124. A metabolic disease in pregnant sheep due to inadequate supply of glucose precursors :

- (A) Polio encephalamalacia
- (B) Pregnancy toxaemia

(C) Milk fever

(D) Enterotoxaemia

125. Estrogenic mycotoxin produced by fungus *Fusarium* responsible for causing vulvovaginitis in swine :

- (A) Aflatoxin
- (B) Zearalenone
- (C) Ergot toxin
- (D) T2 toxin

126. Optimum ratio of Coarse : Medium : Fine particles in ground feed :

- (A) 1 : 6 : 3
- (B) 1 : 1 : 1
- (C) Both (A) and (B)
- (D) 1 : 2 : 4

127. Rate of methane production in for every 100 g of carbohydrate digested :

- (A) 2 g
- (B) 4.5 g
- (C) 15 g
- (D) 10 g

128. Deficiency of _____ at cellular level leads to the failure of entry of Acetyl CoA into Krebs cycle in ketosis.

- (A) Oxaloacetate
- (B) Propionate
- (C) Glutamate
- (D) Carnitine

129. A layer hen on average consumes _____ feed for each egg produced :
- (A) 210 g
(B) 55 g
(C) 300 g
(D) 130 g
130. Flushing is practised :
- (A) During Pregnancy
(B) After parturition
(C) Before breeding
(D) During growth
131. A feeding standard which considered for the first time the quantity as well as the quality of milk produced in formulating a standard :
- (A) Haecker's Feeding Standard
(B) Grouven's Feeding Standard
(C) Kellner's Starch Equivalent
(D) Morrison's Standard
132. Percent loss of gross energy of ruminant feed as methane :
- (A) 8
(B) 2
(C) 5
(D) 3.5
133. Urea supplementation is not recommended if CP content of ruminant diet is above :
- (A) 18%
(B) 25%
(C) 7%
(D) 13%
134. Which of the following is used as energy source ?
- (A) Salseed meal
(B) Linseed meal
(C) Mustard cake
(D) Sunflower cake
135. A low milk fat results when the ratio of acetic to propionate in the rumen content falls below :
- (A) 3 : 1
(B) 1 : 1
(C) 4.5 : 1
(D) 1 : 4.5
136. Type of diet for laboratory animals which offers highest control over nutrient concentrations :
- (A) Natural Ingredient Diet
(B) Purified diets
(C) Chemically defined diet
(D) None of these
137. A fibrous residue of sugarcane stalks after the juice has been pressed out in sugar factories :
- (A) Pressmud
(B) Malasses
(C) Jaggery
(D) Bagasse

138. Quantity of milk fed to calves during first 3 weeks of age :
- (A) 1 / 15th of body weight
(B) 1 / 5th of body weight
(C) 1 / 20th of body weight
(D) 1 / 10th of body weight
139. Maximum permissible level of urea in the total ration for ruminants :
- (A) 3%
(B) 1%
(C) 5%
(D) 4.5%
140. Only VFA present in appreciable quantity in peripheral blood as an important energy source :
- (A) Acetate
(B) Butyrate
(C) Propionate
(D) Valerate
141. As per BIS specification, type II mineral mixture for cattle should have minimum of _____ magnesium.
- (A) 5%
(B) 10%
(C) 6.5%
(D) 3%
142. DCP requirement for a 500 kg adult cattle yielding 10 litres of milk per day with 4% fat in third lactation and animal is not pregnant :
- (A) 300 gm
(B) 750 gm
(C) 450 gm
(D) 1225 gm
143. Silo-fillers disease is an illness of farm workers that is caused by inhalation of the oxides of :
- (A) Magnesium
(B) Sulphur
(C) Nitrogen
(D) None of these
144. Optimum height for fence for housing goats is :
- (A) 100 cm
(B) 120 cm
(C) 150 cm
(D) 180 cm
145. The degree of slope provided to the sides of the roof in a farm building :
- (A) Span
(B) Run
(C) Pitch
(D) Plinth
146. The width of conventional poultry sheds should not normally exceed :
- (A) 9 m
(B) 14 m
(C) 12 m
(D) 16 m

147. The optimum feeding space to be provided for an adult buffalo :
- (A) 30 cm
(B) 60 cm
(C) 120 cm
(D) 150 cm
148. Drink water gag's is generally used in :
- (A) Cattle
(B) Horse
(C) Dog
(D) Pig
149. Solid drug preparations that are administrated through rectum :
- (A) Pessary
(B) Suppository
(C) Enema
(D) Bolus
150. The buffalo breed that contributed more in operation flood :
- (A) Surti
(B) Murrah
(C) Nagpuri
(D) Toda
151. Standard floor space requirement for diary cow :
- (A) 70 – 80 sq. ft
(B) 50 – 60 sq. ft
(C) 90 sq. ft
(D) 20 – 30 sq. ft
152. The following animal is best convertor of poor quality roughage :
- (A) Jersey
(B) Surti
(C) Gir
(D) Tharparkar
153. Ponies have a height of :
- (A) More than 142 cm
(B) Less than 142 inches
(C) Less than 14.2 hands
(D) More than 14.2 hands
154. The average width of milking passage :
- (A) 1 m
(B) 5 m
(C) 3 m
(D) 2.5 m
155. Fodder most suited for pastureland :
- (A) Paragrass
(B) Napier
(C) Guinea grass
(D) Anjan grass
156. Trot in horse is :
- (A) One beat gait
(B) Two beat gait
(C) Three beat gait
(D) All of these

157. Apes seen in India :
 (A) Hoolock gibbon
 (B) **Loris tardigradus**
 (C) Fisher
 (D) None of these
158. The age at which quail starts laying eggs ?
 (A) 10 weeks
 (B) 12 weeks
 (C) 6 weeks
 (D) 8 weeks
159. Tallest sheep breed in India :
 (A) Lohi
 (B) Mandya
 (C) Karakal
 (D) Nellore
160. One synthetic breed of cattle :
 (A) Holstein Friesians
 (B) Tharparkar
 (C) Sahiwal
 (D) Karan Fries
161. Rambouillet has a synonym :
 (A) Carpet wool
 (B) Fur type
 (C) French Merino
 (D) Silky wool
162. M. P. Chary is a variety of which forage crop ?
 (A) Sorghum
 (B) Jowar
 (C) Maize
 (D) None of these
163. Brooder space for chicks :
 (A) 25 – 45 sq. cm
 (B) 60 – 80 sq. cm
 (C) 46 – 65 sq. cm
 (D) 80 – 100 sq. cm
164. The average ejaculate volume in semen of layer breeder :
 (A) 0.25 ml
 (B) 1 ml
 (C) 0.5 ml
 (D) 1.25 ml
165. Lyre horn grey cattle group :
 (A) Kankrej and Tharparkar
 (B) Ongole and Rathi
 (C) Gir and Deoni
 (D) Nimari and Sahiwal
166. An example of an egg laying mammals :
 (A) Cristale
 (B) Chinkare
 (C) Pale weasel
 (D) Echidna
167. The following is not the recognised sheep breed of Odisha :
 (A) Kendrapara
 (B) Marwari
 (C) Ganjam
 (D) Belangir

168. Hatching eggs are stored at :

- (A) $23.2 - 25.6^{\circ}\text{C}$
- (B) $21.4 - 23.5^{\circ}\text{C}$
- (C) $12.6 - 18.3^{\circ}\text{C}$
- (D) $10 - 12^{\circ}\text{C}$

169. Maximum tolerable level of ammonia in poultry shed :

- (A) 20 ppm
- (B) 50 ppm
- (C) 120 ppm
- (D) 18 ppm

170. In pedigree hatching, one trap nest is used for how many hens ?

- (A) 2
- (B) 3
- (C) 5
- (D) 8

171. Ideal ratio of boar to sow in farm :

- (A) 1 : 5
- (B) 1 : 7
- (C) 1 : 10
- (D) 1 : 15

172. Chronic stress in animal before slaughter results in :

- (A) Normal meat
- (B) DFD meat
- (C) PSE meat
- (D) Denatures meat

173. Main bactericidal compound present in wood smoke :

- (A) Phenols
- (B) Carbondioxide
- (C) Carbonyls
- (D) Formaldehydes

174. Pilot sterilisation test is done in manufacture of :

- (A) Evaporated milk
- (B) Spray dried milk powder
- (C) Kulfi
- (D) Icecream

175. Liquid smoke is added in curing brine as a :

- (A) Curing agent
- (B) Oxidizing agent
- (C) Reducing agent
- (D) Flavouring agent

176. Freezing point of lean meat :

- (A) 0°C
- (B) -1.5°C
- (C) -2.5°C
- (D) -5°C

177. Average lactose content of cow milk is :

- (A) 4.9
- (B) 2.5
- (C) 7
- (D) 7.8

178. The time temperature combination for pasteurizing milk by HTST method :

- (A) 72°C for 15 sec
- (B) 80°C for 25 sec
- (C) 92°C for 25 sec
- (D) 63°C for 30 min

179. The minimum fat content in ice-cream is :

- (A) 10%
- (B) 15%
- (C) 5%
- (D) 18%

180. Rennet used for preparation of cheese contains two principal enzymes namely :

- (A) Rennin and Chymotrypsin
- (B) Rennin and Trypsin
- (C) Rennin and Pepsin
- (D) Rennin and Chimine

181. The concentration of chlorine water in water for washing of dressed carcass should be :

- (A) 100 ppm
- (B) 400 ppm
- (C) 200 ppm
- (D) 300 ppm

182. Most suitable concentration of CO₂ in air for effective stunning of pigs :

- (A) 45 – 50%

(B) 50 – 55%

(C) 60 – 65%

(D) 65 – 70%

183. Perimysium covers :

- (A) Muscle
- (B) Muscle fibre bundles
- (C) Muscle fibre
- (D) Myofilament

184. As per PFA rules, butter should contain fat not less than :

- (A) 98%
- (B) 10%
- (C) 80%
- (D) 26%

185. The typical flavour of butter from ripened cream is mainly due to :

- (A) Trymethalamine
- (B) Diacetyl
- (C) Methyl acetate
- (D) Acetyl acetone

186. At all inspection points of slaughter house, the intensity of light should be :

- (A) 110 lux or 10 foot candles
- (B) 220 lux or 20 foot candles
- (C) 330 lux or 30 foot candles
- (D) 540 lux or 50 foot candles

187. Pasteurization efficiency of milk is tested by :
- (A) MBRT
 - (B) Titratable acidity test
 - (C) Phosphatase test
 - (D) α -amylase test
188. The pink colour of cured meat is due to _____ compound.
- (A) Nitrosyl hemochromogen
 - (B) Haemoglobin
 - (C) Nitrosyl myoglobin
 - (D) Myoglobin
189. Anti-microbial agent added to processed cheese in tin containers :
- (A) Sodium chloride
 - (B) Nicin
 - (C) Niacin
 - (D) Penicillin
190. As per ISI standards, the total count in pasteurised milk should be :
- (A) Less than 2 lakh / ml
 - (B) Less than 30000 / ml
 - (C) Less than 50000 / ml
 - (D) Less than 1 lakh / ml
191. Freezing point of goat milk is :
- (A) -0.575°C
 - (B) -0.565°C
 - (C) -0.555°C
 - (D) -0.586°C
192. Which is the Government agency implementing AGMARK ?
- (A) Directorate of Marketing and Inspection
 - (B) CCFS
 - (C) Bureau of Indian Standards
 - (D) ICAR
193. The characteristic flavour of yoghurt is due to :
- (A) Sodium acetate
 - (B) Acetaldehyde
 - (C) Mono sodium glutamate
 - (D) Sodium citrate
194. Ultimate pH of normal red meat is :
- (A) 4.8 – 5.0
 - (B) 5.4 – 5.6
 - (C) 6.0 – 6.2
 - (D) 6.8 – 7.0
195. Casings prepared from large intestines of buffalo and pigs :
- (A) Weasand
 - (B) Runners
 - (C) Middles
 - (D) Rounds
196. Which of the following standards apply to international trade ?
- (A) FPO
 - (B) FDA
 - (C) BIS
 - (D) Codex alimentarius

197. As per meat and food products order, no meat products shall contain monosodium glutamate in excess of :

- (A) 0.01%
- (B) 0.1%
- (C) 1%
- (D) 10%

198. Test for finding the mixing of cow and buffalo milk is :

- (A) COB test
- (B) Baudouin test
- (C) Alizarin test
- (D) Hansa test

199. The microbial organism used as an indicator for selecting pasteurization time-temperature combination :

- (A) *Listeria monocytogenes*
- (B) *Coxiella burnetti*
- (C) *Mycobacterium tuberculosis*
- (D) *Salmonella typhi*

200. Which one of the following tissue / organ has to be mandatorily incised during the post-mortem meat inspection ?

- (A) Oesophagus
- (B) Internal iliac lymph node
- (C) Masseter muscle
- (D) Renal lymph node

SPACE FOR ROUGH WORK

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