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Test Booklet Series

**A**

**TEST BOOKLET**  
**SPECIAL RECRUITMENT TO**  
**VETERINARY ASSISTANT SURGEON**  
**PAPER – II**  
**(ANIMAL SCIENCE)**

T. B. C. : VS – 2 – 2018/19

Sl. No. **2021**

Time Allowed : 2½ Hours

Maximum Marks : 400

**: INSTRUCTIONS TO CANDIDATES :**

1. IMMEDIATELY AFTER THE COMMENCEMENT OF THE EXAMINATION, YOU SHOULD CHECK THAT THIS TEST BOOKLET DOES NOT HAVE ANY UNPRINTED OR TORN OR MISSING PAGES OR ITEMS ETC. IF SO, GET IT REPLACED BY A COMPLETE TEST BOOKLET OF THE SAME SERIES ISSUED TO YOU.
2. ENCODE CLEARLY THE TEST BOOKLET SERIES A, B, C OR D, AS THE CASE MAY BE, IN THE APPROPRIATE PLACE IN THE ANSWER SHEET USING BALL POINT PEN (BLUE OR BLACK).
3. You have to enter your Roll No. on the Test Booklet in the Box provided alongside. **DO NOT** write anything else on the Test Booklet.
4. YOU ARE REQUIRED TO FILL UP & DARKEN ROLL NO., TEST BOOKLET / QUESTION BOOKLET SERIES IN THE ANSWER SHEET AS WELL AS FILL UP TEST BOOKLET / QUESTION BOOKLET SERIES AND SERIAL NO. AND ANSWER SHEET SERIAL NO. IN THE ATTENDANCE SHEET CAREFULLY. WRONGLY FILLED UP ANSWER SHEETS ARE LIABLE FOR REJECTION AT THE RISK OF THE CANDIDATE.
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.
8. Before you proceed to mark (darken) in the Answer Sheet the responses 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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# Test Prime

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1. Who is the precursor of acetyl CoA ?  
(A) Butyrate  
(B) Propionate  
(C) Acetate  
(D) None of the above
2. Blood sugar level of a cow suffering from ketosis is round about :  
(A) 80 mg/dl blood  
(B) Less than 40 mg/dl blood  
(C) More than 40 mg/dl blood  
(D) Above than 80 mg/dl blood
3. Maintenance D. M. total requirement of 400 kg crossed breed cows require :  
(A) 5-7 kg  
(B) 8-10 kg  
(C) 11-13 kg  
(D) 13-15 kg
4. T. D. N. term is appropriate with :  
(A) Fat  
(B) Energy  
(C) Protein  
(D) None of the above
5. Which trace element is more critical in swine among the element ?  
(A) Copper  
(B) Manganese  
(C) Zinc  
(D) None of the above
6. Rice straw contains crude protein about :  
(A) 5%  
(B) 3%  
(C) 0%  
(D) None of the above
7. Cotton seed cannot mix in the diet of :  
(A) Pig ration  
(B) Poultry ration  
(C) Goat ration  
(D) None of the above
8. Pre starter broiler ration contain critical methionine :  
(A) 3%  
(B) 2%  
(C) 1.2%  
(D) None of the above
9. Egg albumin is secreted by :  
(A) Infundibulum  
(B) Magnum  
(C) Isthmus  
(D) Uterus
10. Luteinizing Hormone (LH) from the anterior pituitary causes :  
(A) Release of a mature yolk  
(B) Oviduct to develop  
(C) Increase in blood calcium  
(D) Normal laying and secretion of albumen

11. The thyroid hormones affects :  
(A) Metabolic rate of the bird  
(B) Feather growth and colour  
(C) All of the above  
(D) None of the above
12. The tandem method of selection is preferred over independent culling level if :  
(A) Genetic correlations between traits are desirable  
(B) Phenotypic correlations between traits are positive  
(C) No correlations between the traits  
(D) None of the above
13. Family selection of the method of choice for traits with :  
(A) Low heritability  
(B) High heritability  
(C) Expression in one sex only  
(D) Large families
14. Proof that genetic variance exists at the stage of selection limit :  
(A) If there is response to reserve selection  
(B) If the population mean remains constant  
(C) Heritability remains constant  
(D) Reduction in phenotypic variance
15. Which is not the characteristic of the lines chosen for reciprocal recurrent selection ?  
(A) Differ in gene frequency  
(B) High level of performance  
(C) Inbreed  
(D) Good combining ability
16. The superiority of a selection index in multi trait selection largely depends upon the accuracy of estimation of :  
(A) Heritability of the trait  
(B) Relative weights of the traits  
(C) Genetic and phenotypic variance and covariance  
(D) Repeatability of the traits
17. The effective number of parents under pedigree random breeding control populations will be :  
(A)  $1/N_e = 1/4 M + 1/4 F$   
(B)  $1/N_e = 3/16 M + 1/16 F$   
(C)  $1/N_e = 3/32 M + 1/32 F$   
(D)  $1/N_e = 3/32 M + 1/32 F$
18. The goal of the selection can be defined under :  
(A) Artificial selection  
(B) Natural selection  
(C) Both (A) and (B)  
(D) None of the above



19. Which one is not a polysaccharides ?  
 (A) Raffinose  
 (B) Dextrins  
 (C) Inulin  
 (D) Cellucose
20. In birds the main end product of protein metabolism are :  
 (A) Uric acid  
 (B) Allantoin  
 (C) Urea nitrogen  
 (D) Nitrate nitrogen
21. Which is not classified as basic amino acid ?  
 (A) Arginine  
 (B) Valine  
 (C) Histidine  
 (D) Lysine
22. Which one of the following is not a saturated fatty acid ?  
 (A) Palmitic acid  
 (B) Arachidic acid  
 (C) Stearic acid  
 (D) Arachidonic acid
23. Which of the following was also considered lately as an essential mineral ?  
 (A) Zinc  
 (B) Cobalt  
 (C) Selenium  
 (D) Chromium
24. Which is non-glycerol based lipid ?  
 (A) Lecithines  
 (B) Cephalines  
 (C) Triolein  
 (D) Steroids
25. Which is the main non-protein nitrogenous component of Berseem herbage ?  
 (A) Ammonia Nitrogen  
 (B) Amide Nitrogen  
 (C) Amino Nitrogen  
 (D) Nitrate Nitrogen
26. Which of the following is essential in prevention of perosis in chicks ?  
 (A) Choline  
 (B) Biotin  
 (C) Folic acid  
 (D) Pantothenic acid
27. Who was the first to unravel the secret of biological reproduction and heredity ?  
 (A) Charles Darwin  
 (B) Thomas Hunt Morgan  
 (C) John Gregor Mendel  
 (D) James D. Watson

28. The mahogany and red colors in cattle represent a good example to illustrate :
- Sex-influenced inheritance
  - Sex-limited inheritance
  - Sex-linked inheritance
  - None of the above
29. The first case of mutation was discovered in :
- Drosophila
  - Garden pea
  - Male lamb
  - Neurospora
30. Recurrent selection is practised to utilize :
- Dominant deviation
  - Additive variance
  - Non-additive variance
  - Environmental variation
31. Selection is effective for those traits which are governed by :
- Additive genes
  - Dominant genes
  - Epistatic genes
  - All of the above
32. Sib selection in cattle is recommended for :
- Sex-linked trait
  - Sex-limited trait
  - Sex-linked trait
  - Sex-influenced trait
33. The epistasis type of gene action is important for growth rate in poultry. Therefore, the type of selection practices is :
- Recurrent Selection
  - Pedigree Selection
  - Reciprocal Recurrent Selection
  - All of the above
34. Manifest effects of a gene refer to :
- Penetrance
  - Expressivity
  - Pleiotropy
  - Epistasis
35. \_\_\_\_\_ to the phenomenon of inbreeding depression is its opposite, 'hybrid vigour' or 'heterosis'.
- Complementary
  - Supplementary
  - Additive
  - Multiplicative
36. The magnitude of inbreeding coefficient of close inbreeding under full-sib mating reaches 0.500 after \_\_\_\_\_ generation.
- 2
  - 3
  - 4
  - 5

37. In a statistical hypothesis testing experiment, what type of error is committed by rejecting the null hypothesis when it is true :
- (A) Type-I  
(B) Type-II  
(C) Type-I and Type-II  
(D) None of the above
38. Which of the following has maximum chromosome number ?
- (A) Pig  
(B) Horse  
(C) Camel  
(D) Dog
39. Meat of buffalo is known as :
- (A) Beef  
(B) Carabeef  
(C) Mutton  
(D) Chevron
40. Which animal contribute maximum to the milk production of India ?
- (A) Goat  
(B) Buffalo  
(C) Cow  
(D) Sheep
41. Gestation period of cow and buffalo respectively (in days) are :
- (A) 310 and 282  
(B) 282 and 310  
(C) 336 and 250  
(D) 250 and 336
42. Normal body temperature of cattle is ( $^{\circ}\text{F}$ ) :
- (A) 100.8-102.4  
(B) 100.4-101.7  
(C) 100.9-102  
(D) 101.6-103
43. Which of the following animal has maximum pulse rate ?
- (A) Horse  
(B) Cattle  
(C) Pig  
(D) Dog
44. One ml of ejaculate of bull have how many million of sperms ?
- (A) 1100  
(B) 1300  
(C) 1500  
(D) 1800
45. Silent heat occurs in cow (in days) postpartum is :
- (A) 10-13  
(B) 13-15  
(C) 15-18  
(D) 60
46. Age of sexual maturity in cattle (in years) is :
- (A) 1-2  
(B) 2-8  
(C) 2-3  
(D) 4-5

47. The feed conversion efficiency is maximum in :  
 (A) Cattle  
 (B) Poultry  
 (C) Pig  
 (D) Camel
48. Mixed farming incorporates which of the following ?  
 (A) Crop production  
 (B) Animal production  
 (C) Both of the above  
 (D) Mixed crop production
49. Which river is richest fresh water fishes source in India ?  
 (A) Jamuna  
 (B) Chambal  
 (C) Ganga  
 (D) Narmada
50. Skeleton of foetus is made up of :  
 (A) Bone only  
 (B) Cartilage only  
 (C) Mostly bone  
 (D) Mostly cartilage
51. Which structure is between the bone to bone join ?  
 (A) Ligament  
 (B) Tendon  
 (C) Both (A) and (B)  
 (D) None of the above
52. Which of the following is absorbed in omasum ?  
 (A) Water  
 (B) Volatile fatty acid  
 (C) Both of the above  
 (D) None of the above
53. Which of the following breed of buffalo has maximum milk fat percentage in its milk ?  
 (A) Murrah  
 (B) Jaffarabadi  
 (C) Mehsana  
 (D) Nagpuri
54. Central cattle breeding farm for Thaparkar is located at :  
 (A) Suratgarh  
 (B) Jaisalmer  
 (C) Sirsa  
 (D) Hissar
55. NDRI is situated at :  
 (A) Izzatnagar  
 (B) Karnal  
 (C) Delhi  
 (D) Ludhiana
56. Which method is useful for experimental farm ?  
 (A) Artificial insemination  
 (B) Flock system  
 (C) Pen system  
 (D) Hand system



57. Why close grazing occurs in sheep ?  
 (A) Due to small muzzle  
 (B) Due to split upper lip  
 (C) Both (A) and (B)  
 (D) None of the above
58. How much water is needed for an adult sheep ?  
 (A) 2 litre water / day during winter  
 (B) 3.5-4 litre water / day during summer  
 (C) 2-3 litre water / every 1 kg of dry feed  
 (D) All of the above
59. Goat meat from which breed is more delicious :  
 (A) Black Bengal and Angora Chevon  
 (B) Nubian  
 (C) Chigu and Changthangi  
 (D) Marwari and Beetal
60. Is gestation heat present in goat ?  
 (A) Yes  
 (B) No  
 (C) May be  
 (D) Depend on age
61. Which contributes richness of flavour of milk ?  
 (A) Phospholipid  
 (B) Galactolipid  
 (C) Glycolipid  
 (D) Cholesterol
62. Ham is :  
 (A) Which comes from back and join  
 (B) Which comes from sides  
 (C) Comes from join and sides  
 (D) Comes from rear quarters
63. Nutritional deficiency occur more in which of the following ?  
 (A) Pig  
 (B) Ruminant  
 (C) Both (A) and (B)  
 (D) Camel
64. Fat from pig carcass after it has been tendered is known as :  
 (A) Gammon  
 (B) Lard  
 (C) Ham  
 (D) All of the above
65. Pressure of hand milking should be :  
 (A) 25-40mm of Hg  
 (B) 25-50 mm of Hg  
 (C) 35-40 mm of Hg  
 (D) 35-50 mm of Hg
66. Specific gravity of milk is :  
 (A) 0.94  
 (B) 1  
 (C) 1.030  
 (D) 1.050

67. Which is the most heat tolerate exotic breed of cattle ?  
 (A) H. F.  
 (B) Jersey  
 (C) Ayreshire  
 (D) Brown Swiss
68. The factor responsible for initiating cell division is :  
 (A) Cytoplasmic index  
 (B) DNA  
 (C) Karyoplasmic index  
 (D) Nucleus
69. Crossing over takes place between :  
 (A) Sister chromatid  
 (B) Non-sister chromatid  
 (C) Chromosome  
 (D) Chromonema
70. The type of cell division which takes place only once in cell lifetime, is called :  
 (A) Amitosis  
 (B) Meiosis  
 (C) Mitosis  
 (D) Free cell division
71. Crossing over takes place in :  
 (A) Mitosis  
 (B) Meiosis I  
 (C) Meiosis II  
 (D) All of the above
72. What happens in crossing over ?  
 (A) Duplication of chromosome  
 (B) Linkage in chromosome  
 (C) Minimization in genetic material  
 (D) Exchange of genetic material
73. Role of mutation in evolution is :  
 (A) Reproductive isolation  
 (B) Genetic variation  
 (C) Genetic drift  
 (D) None of the above
74. Which is a tetrasomic condition ?  
 (A)  $2n - 1$   
 (B)  $2n + 1 + 1$   
 (C)  $2n + 2$   
 (D)  $2n + 3$
75. Mutation induced by 5-Bromouracil are :  
 (A) Transversional mutation  
 (B) Transitional mutation  
 (C) Frame shift mutation  
 (D) Backward mutation
76. Enzyme useful in genetic engineering is :  
 (A) Lipase  
 (B) DNA ase  
 (C) Restriction endonuclease  
 (D) Amylase

77. Daughter of colour blind father and normal mother marries a normal person. Colour blindness in the family shall be :  
 (A) 50% sons  
 (B) 50% daughter  
 (C) 50% offspring  
 (D) 50% son and 50% daughter
78. Sum total of genes in population is :  
 (A) Genotype  
 (B) Phenotype  
 (C) Karyotype  
 (D) Gene pool
79. The enzyme which combines with a non-protein prosthetic group to form a functional enzyme is called :  
 (A) Coenzyme  
 (B) Proenzyme  
 (C) Holoenzyme  
 (D) Apoenzyme
80. Chromosome which do not have centromere is called :  
 (A) Monocentric  
 (B) Diacentric  
 (C) Acentric  
 (D) Polycentric
81. Diagrammatic representation of the karyotype is called :  
 (A) Cladogram  
 (B) Cryptogram  
 (C) Idiogram  
 (D) All of the above
82. Mitosis can occur in which of the following ?  
 (A) Haploid cells  
 (B) Diploid cells  
 (C) Polyploid cells  
 (D) All of the above
83. The minimum number of chiasmata in a pair is :  
 (A) One  
 (B) Two  
 (C) Three  
 (D) Four
84. During karyokinesis the chromosome exhibit minimum coiling at which phase ?  
 (A) Prophase  
 (B) Metaphase  
 (C) Anaphase  
 (D) Interphase
85. Drones are :  
 (A) Sterile males  
 (B) Sterile females  
 (C) Fertile females  
 (D) Fertile males
86. Which excretory material is least toxic ?  
 (A) Ammonia  
 (B) Urea  
 (C) Uric Acid  
 (D) Trimethyl amine oxide

87. The variance ratio in case of 'F' test is \_\_\_\_\_ than one.
- (A) Less  
(B) More  
(C) Equal  
(D) None of the above
88. Most efficient form of breeding is :
- (A) Inbreeding  
(B) Out-breeding  
(C) Both of the above  
(D) None of the above
89. Inbreeding coefficient is a measure of increase of :
- (A) Homozygosity  
(B) Heterozygosity  
(C) Both (A) and (B)  
(D) None of the above
90. Breeding system by which a few pure breed sires can rather quickly transform a nondescript population into the purebred is called :
- (A) Cross-breeding  
(B) Live breeding  
(C) Out crossing  
(D) Grading up
91. Who described the operon concept in *E. coli* ?
- (A) Mendel, Darwin  
(B) Hugo de Varies, Muller  
(C) Miller, Muller  
(D) Francis Jacob and Jacques Monod
92. H. J. Muller reported that the X-rays induces :
- (A) Selection  
(B) Mutation  
(C) Migration  
(D) Aberration
93. Common wheat with 42 chromosomes is :
- (A) Tetraploid  
(B) Triploid  
(C) Octaploid  
(D) Hexaploid
94. The sex chromosomes of females and males are respectively :
- (A) XX in females and XY or (XO) in males  
(B) XY in females and XX in males  
(C) XO in females and XX in males  
(D) XX in females and XX in males
95. Dr. Hargobind Khurana has been awarded Nobel Prize for research on :
- (A) Oral contraceptives  
(B) Hormones  
(C) Genetic code  
(D) Immunology
96. Name the breed of poultry with black meat :
- (A) Aseel  
(B) Tellichery  
(C) Kadaknath  
(D) All of the above

97. Double humped camels are found in :  
(A) Rajasthan  
(B) Gujarat  
(C) Ladakh  
(D) All of the above
98. Pashmina is obtained from :  
(A) Angora rabbit  
(B) Angora goat  
(C) Karakul sheep  
(D) None of the above
99. Pregnancy feeding allowance in cow should start after :  
(A) 6 months  
(B) 8 months  
(C) 3 months  
(D) None of the above
100. The human liver cannot produce :  
(A) Starch  
(B) Glucose  
(C) Glycogen  
(D) None of the above
101. TCA cycle is operative in :  
(A) Mitochondria  
(B) Microsomes  
(C) Cytosol  
(D) None of the above
102. Phosphorylase A converts :  
(A) Glucose to fructose  
(B) Fructose to glucose  
(C) Glycogen to glucose 1-p  
(D) None of the above
103. Increased NADPH will favour the formation of :  
(A) Saturated fatty acids  
(B) Unsaturated fatty acids  
(C) None of the above  
(D) All of the above
104. Starch is hydrolysed by :  
(A) Amylase  
(B) Phosphorylase  
(C) Hexokinase  
(D) None of the above
105. Testosterone is secreted by :  
(A) Germinal epithelium  
(B) Interstitial cells  
(C) Sertoli cells  
(D) None of the above
106. Castration of the male calf causes total loss of :  
(A) Erection  
(B) Ejaculation  
(C) Sexual desire  
(D) All of the above



107. A small amount of progesterone is required for the :  
 (A) Maintenance of corpus luteum  
 (B) Noncontractile condition of the uterus  
 (C) Ovulation  
 (D) None of the above
108. In case of rodents the hormone that is responsible for maintenance of corpus luteum is :  
 (A) Follicle stimulating hormone  
 (B) Luteinizing hormone  
 (C) L. T. H.  
 (D) None of the above
109. In the development of under estrogen takes part in causing :  
 (A) Tubular development  
 (B) Alveolar development  
 (C) Development of milk cistern  
 (D) None of the above
110. Clinical significance of vagus nerve increase and prostaglandin fibre is :  
 (A) Motor  
 (B) Sensory  
 (C) Mixed  
 (D) None of the above
111. Signs of persistent oestrus at frequent but irregular intervals lead to :  
 (A) Nymphomania  
 (B) Split oestrus  
 (C) None of the above  
 (D) All of the above
112. Ketone bodies include which of the following ?  
 (A) Aceto-acetic acid  
 (B) Acetone  
 (C) Beta hydroxybutyric acid  
 (D) All of the above
113. The quality of glomerular filtrate formed each minute in all the nephrons of both the kidneys is called :  
 (A) GF  
 (B) GFR  
 (C) FGC  
 (D) None of the above
114. The hormones are chemically or steroid in nature :  
 (A) Protein  
 (B) Fat  
 (C) Vitamins  
 (D) Sterol
115. Amino acids which are not synthesized in the body are known as :  
 (A) Non-essential  
 (B) Essential  
 (C) Both (A) and (B)  
 (D) None of the above

116. The principal function of colon is \_\_\_\_\_ of water and electrolytes from the chime.
- (A) Absorption  
(B) Excretion  
(C) Both (A) and (B)  
(D) None of the above
117. Secretions of seminal vesicles :
- (A) Is alkaline  
(B) Is of no importance to reproduction  
(C) Is mucoid  
(D) None of the above
118. Which of the following is not an anticoagulant ?
- (A) Heparin  
(B) Sodium oxalate  
(C) Calcium chloride  
(D) EDTA
119. Ovulation can occur at ovulation fossa in which of the following species ?
- (A) Ewe  
(B) Cow  
(C) Horse  
(D) None of these
120. Sodium pump decreases the concentration of sodium ions inside the nerve fiber to :
- (A) 5m Eq/l  
(B) 10m Eq/l  
(C) 142m Eq/l  
(D) 150m Eq/l
121. Successful embryo development in the recipients is dependent :
- (A) On the age and stage of embryonic development at the time of transfer  
(B) On the uterine environment of the recipient only  
(C) On the level of maternal plasma estrogen  
(D) All of the above
122. In the parturition process :
- (A) The oxytocin increase is followed by prostaglandin increase  
(B) The oxytocin increase is preceded by prostaglandin increase  
(C) Oxytocin and prostaglandin act simultaneously  
(D) None of the above
123. The hypothalamus contains centre which can :
- (A) Increase the rate of heat loss  
(B) Decrease the rate of heat production  
(C) Decrease the rate of heat loss  
(D) All of the above
124. Cold stress increases the hormonal output of :
- (A) Adrenal medulla  
(B) Adrenal cortex  
(C) Thyroid  
(D) All of the above

125. Which hormones when excessively secreted results in alkalosis ?  
 (A) Growth hormone  
 (B) Cortisol  
 (C) Aldosterone  
 (D) Anti-diuretic hormones
126. The commonly used drug that can be employed to super ovulate mare :  
 (A) PMSG  
 (B) Equine follicle stimulating hormone  
 (C) Equine chorionic gonadotropin  
 (D) Stilboesterol
127. The inhibin is secreted from cell of :  
 (A) Leydig  
 (B) Sertoli  
 (C) Epididymis  
 (D) None of the above
128. The endocrine glands are :  
 (A) 7  
 (B) 65  
 (C) 6  
 (D) 25
129. Pancreatic trypsinogen is converted to Trypsin by which of the following enzyme mainly present in the duodenal juice ?  
 (A) Pancreozymine  
 (B) Peptidase  
 (C) Enterokinase  
 (D) Carbonic anhydrase
130. Oxytocin synthesis occurs in which of the following structures of the brain ?  
 (A) Basal ganglia  
 (B) Hypothalamus  
 (C) Medulla oblongata  
 (D) Cerebellum
131.  $\text{Na}^+$  is retained under the influence of :  
 (A) Aldosterone  
 (B) Anti-diuretic hormone  
 (C) Oxytocin  
 (D) All of the above
132. Urine of cattle is of what nature ?  
 (A) Acidic  
 (B) Basic  
 (C) Neutral  
 (D) None of the above
133. Which part of ruminant stomach is known as pouch ?  
 (A) Rumen  
 (B) Reticulum  
 (C) Omasum  
 (D) Abomasum
134. Length of rumen papilla is :  
 (A) 1 cm  
 (B) 10 cm  
 (C) 1 m  
 (D) 20 cm

135.  $Nb_4O_8$  have Iron is :  
 (A)  $Fe^{++}$   
 (B)  $Fe^{+++}$   
 (C) Both (A) and (B)  
 (D) None of the above
136. Respiratory pressure of  $O_2$  in arterial blood is :  
 (A) 48 mm Hg  
 (B) 46 mm Hg  
 (C) 40 mm Hg  
 (D) 50 mm Hg
137. RBC membrane impermeable to which of the following ?  
 (A) Cation  
 (B) Anion  
 (C) Both (A) and (B)  
 (D) None of the above
138. Which of the following is the rate of respiration in cow ?  
 (A) 12  
 (B) 36  
 (C) 26  
 (D) 30
139. Clinical condition of bluishness of skin and mucosa is known as :  
 (A) Bluinosis  
 (B) Cyanosis  
 (C) Blackness  
 (D) All of the above
140. Renal blood flow is controlled by juxta glomerular cells through :  
 (A) Rennin angeotensin system  
 (B) Prostaglandins of medulla  
 (C) Epinephrine  
 (D) All of the above
141. Percentage of  $CH_4$  in rumen is :  
 (A) 7  
 (B) 65  
 (C) 6  
 (D) 25
142. Percentage of  $CO_2$  in rumen is :  
 (A) 7  
 (B) 65  
 (C) 6  
 (D) 25
143. Total protozoa ( $\times 10^6$ ) in buffalo is which of the following ?  
 (A) 1-2  
 (B) 2-11  
 (C) 3-20  
 (D) 1.5-8
144. Types of bacteria in rumen is which of the following ?  
 (A) Gram-veccoci  
 (B) Non-spore formation  
 (C) Anaerobes  
 (D) All of the above

145. A muscle possess higher water holding capacity in :  
 (A) Rigor state  
 (B) Pre-rigor state  
 (C) Post-rigor state  
 (D) Any of the above
146. When collagen is heated in the water to 80°C :  
 (A) Collagen remains insoluble  
 (B) Collagen begins to be converted into gelatine  
 (C) Collagen fibres gets only shortened  
 (D) Any of the above
147. Most aluminium foil used is known to be dead soft which has good folding characteristics which belongs to :  
 (A) "O" temper  
 (B) "H-12" temper  
 (C) "H-14" temper  
 (D) All of the above
148. As per PFA standards, the maximum limit for added diacetyl content in deshi butter is :  
 (A) 3 ppm  
 (B) 5 ppm  
 (C) 2 ppm  
 (D) Nil
149. The permitted antioxidant in ghee is :  
 (A) BHA  
 (B) BHT  
 (C) NDGA  
 (D) Ethyl gallate
150. Salmonellosis is an example for which of the following ?  
 (A) Infectious type of food poisoning  
 (B) Non-infectious type of food poisoning  
 (C) Chemical food poisoning  
 (D) None of the above
151. Protein content of white meat is :  
 (A) Lesser than red meat  
 (B) Higher than red meat  
 (C) Equal than red meat  
 (D) No comparison with red meat
152. Which is firm meat ?  
 (A) Pork  
 (B) Chevon  
 (C) Mutton  
 (D) Chicken
153. Maximum fat present in which meat ?  
 (A) Carabeef  
 (B) Beef  
 (C) Pork  
 (D) Rabbit



154. Which is maximum SPC for pasteurized milk ?  
 (A) 0 / ml  
 (B) 100 / ml  
 (C) 30,000 / ml  
 (D) 1 lac / ml
155. Acid treatment of collagen produce :  
 (A) Collagen  
 (B) Elastin  
 (C) Gelatine  
 (D) Reticulin
156. Which meat has cherry red colour ?  
 (A) Mutton  
 (B) Pork  
 (C) Chevon  
 (D) Beef
157. Brown colour of meat is due to :  
 (A) Oxyhaemoglobin  
 (B) Oxymyoglobin  
 (C) Methmyoglobin  
 (D) All of these
158. Meat is more firm :  
 (A) In older animal  
 (B) During chilling  
 (C) Both (A) and (B)  
 (D) In younger animal
159. Shelf life of vacuum packaging cuts for lambs is :  
 (A) 10 days  
 (B) 2 weeks  
 (C) 3 weeks  
 (D) 8-10 weeks
160. Curing solution known as :  
 (A) Salt pater  
 (B) Salt  
 (C) Pickle  
 (D) All of these
161. Which is bacterial in smoking ?  
 (A) Hcho  
 (B) Phenol  
 (C) Both (A) and (B)  
 (D) Saw dust/hard wood
162. Which heat is more effective ?  
 (A) Moist  
 (B) Dry  
 (C) Mixture  
 (D) 60 : 40 combination
163. Extra chromosomal piece is known as :  
 (A) Cosmid  
 (B) Episome  
 (C) Plasmid  
 (D) Bacteriophage
164. In polymerase chain reaction which of the following is required essentially ?  
 (A) DNA ligase  
 (B) DNA primer  
 (C) DNA polymerase  
 (D) None of the above

165. Antibodies that recognize only one epitope and derived from a single clone is called :  
 (A) Polyclonal antibodies  
 (B) Monoclonal antibodies  
 (C) Monovalent antibodies  
 (D) Bivalent antibodies
166. The initiation codon for translation in prokaryotes is :  
 (A) UGA  
 (B) AUG  
 (C) GAU  
 (D) UUA
167. ELISA test essentially required which of the following ?  
 (A) Antigen, antibody and conjugate  
 (B) Antigen, antibody, substrate and ELISA plate  
 (C) Antigen, antibody, conjugate, substrate and ELISA plate  
 (D) Antigen, antibody and ELISA plate
168. Who associated with Hybridoma Technology ?  
 (A) Saiki  
 (B) Butler and Chase  
 (C) Zinkernagel and Doherty  
 (D) Kohler and Milstein
169. Number of base pair units in a single turn of DNA is :  
 (A) 4  
 (B) 6  
 (C) 8  
 (D) 10
170. At pH, the direction of glutamic acid in electrophoresis is towards :  
 (A) Cathode  
 (B) Anode  
 (C) No migration  
 (D) Both cathode and anode
171. The pH of a buffer to be used for the separation of Lysine and Histidine in cation exchange column is :  
 (A) 2  
 (B) 4  
 (C) 8  
 (D) 12
172. The metabolism of amino acid is initiated by :  
 (A) Deamination  
 (B) Hydrogenation  
 (C) Amination  
 (D) None of the above
173. In the Watson-Crick model for the DNA the distance between the 1' carbons on the deoxyribose moieties of A + T or G + C were :  
 (A) 1.1 nm  
 (B) 2.1 nm  
 (C) 3.1 nm  
 (D) Different always

174. In polymerase chain reaction, number of oligonucleotide primers used are :  
(A) One  
(B) Five  
(C) Four  
(D) Two
175. The lethal gene ratio is :  
(A) 8 : 1  
(B) 2 : 1  
(C) 4 : 1  
(D) 1 : 1
176. The fragments of DNA attached to an RNA initiator component was discovered by :  
(A) Watson and Crick  
(B) Okazaki  
(C) Peterson  
(D) Nelson
177. The carbon atom at position 4 and 5 and the nitrogen atom at the position 7 of purine base are supplied from :  
(A) Valine  
(B) Alanine  
(C) Glycine  
(D) Serine
178. In protein synthesis 'start' signal is made by codon :  
(A) UAG  
(B) UAA  
(C) UGA  
(D) AUG
179. Small molecule contaminants from a protein can be removed by :  
(A) Filtration  
(B) Dialysis  
(C) Solvolysis  
(D) Solvent partition
180. Which of the following is an amino acid without chiral centre ?  
(A) Glycine  
(B) Serine  
(C) Threonine  
(D) Tryptophan
181. Community Development Programme were introduced in India for rural development :  
(A) In early 40's  
(B) In early 50's  
(C) In early 60's  
(D) In early 70's
182. New name of V. L. W. is :  
(A) V. L. O.  
(B) V. D. O.  
(C) R. D. O.  
(D) None of the above
183. For long term requirement the farmers do not depend upon :  
(A) Government  
(B) Land Development Banks  
(C) The Money Lenders  
(D) Cooperative Credit Societies

184. The development plans of a district and coordination of activities of a Panchayat Samiti is responsible to which of the following ?
- (A) Gram Pradhan  
(B) Pramukh  
(C) Zila Parishad  
(D) Block Development Officer
185. Rural Development Programme should be formed to meet :
- (A) Short term changes  
(B) Emergent situation  
(C) Long term changes  
(D) All of the above
186. The First Agricultural University of India is :
- (A) P. A. U., Ludhiana (Punjab)  
(B) H. A. U., Hissar (Haryana)  
(C) A. P. A. U., Hyderabad (AP)  
(D) B. B. P. U. A & T., Patnagar (UP)
187. A good extension programme should be :
- (A) Flexible  
(B) Rigid  
(C) Both (A) and (B)  
(D) None of the above
188. The idea of having a village guide in each village for introducing new skills among the rural people was introduced by :
- (A) R. N. Tagore  
(B) B. P. Pant  
(C) Mahatma Gandhi  
(D) F. L. Braynew
189. Special Livestock Production Programme was initiated in :
- (A) 1974-75  
(B) 1979-80  
(C) 1978-79  
(D) 1981-82
190. The national level body for policy formulation of rural development programme in our country is :
- (A) National Development Council  
(B) Planning Commission  
(C) Price Commission  
(D) None of the above
191. TV includes :
- (A) Audio and visual both devices  
(B) Visual device  
(C) Audio device  
(D) Not known, it is complicated item
192. Family of one male with many wives is known as :
- (A) Polyandrous family  
(B) Polygynous family  
(C) Both (A) and (B)  
(D) None of the above

193. Ancestral property inheritance from male to male is property of which family ?  
 (A) Nuclear family  
 (B) Combined family  
 (C) Patrilineal family  
 (D) Matrilineal family
194. Collection of more than one set of people to solve a joint problem is known as :  
 (A) Client system  
 (B) Cooperative system  
 (C) Cumulative system  
 (D) Social system
195. Process by which individual maintain contract with its environment :  
 (A) Fidelity  
 (B) Perception  
 (C) Feedback  
 (D) Communication gap
196. Determine the suitability of new practice in prevailing situation is :  
 (A) Adaptive trial  
 (B) Mini kit trial  
 (C) Determining trial  
 (D) Both (A) and (B)
197. Decision not to adopt an innovation is known as :  
 (A) Implementation  
 (B) Rejection  
 (C) Persuasion  
 (D) Predictability
198. Written form of extension teaching methods does not include which of the following ?  
 (A) Bulletin  
 (B) Leaflet  
 (C) Pamphlet  
 (D) Blackboard
199. Traditional people oriented to past and never accept an innovation are known as :  
 (A) Innovation  
 (B) Adaptor  
 (C) Rejector  
 (D) Laggard
200. Operation flood was started in :  
 (A) 1970  
 (B) 1978  
 (C) 1986  
 (D) 1969

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**SPACE FOR ROUGH WORK**



