

DO NOT OPEN THIS TEST BOOKLET UNTIL YOU ARE ASKED TO DO SO

Test Booklet Series

T. B. C. : VS - 2-21/22

A

TEST BOOKLET
VETERINARY ASSISTANT SURGEON

PAPER - II

Sl. No.

2181

(ANIMAL SCIENCE)

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 (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.

SEAL

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1. In the process of blood coagulation, after the activation of Factor X, there is common pathway for the formation of:
 - (A) Thrombin
 - (B) Prothrombin
 - (C) Thromboplastin
 - (D) Tenase complex
2. After birth, the main site of erythropoiesis is:
 - (A) Liver
 - (B) Bone marrow of long bones
 - (C) Spleen
 - (D) Yolk sac
3. In resting state active sites on actin filament is blocked by:
 - (A) Myosin
 - (B) Tropomyosin
 - (C) Troponin
 - (D) Actin
4. Decrease in the potential difference across the plasma membrane i.e. going to more positive side is called as:
 - (A) Depolarization
 - (B) Repolarization
 - (C) Hyperpolarization
 - (D) Apolarization
5. The bile pigment responsible for yellow colour of urine:
 - (A) Bilirubin
 - (B) Stercolilin
 - (C) Uroverdin
 - (D) Urobilin
6. According to Laplace's Law of alveolar pressure, which of these is true:
 - (A) Pressure \propto Tissue thickness
 - (B) Pressure $\propto 1 / \text{Tissue thickness}$
 - (C) Pressure \propto radius of alveolus
 - (D) Tissue \propto radius of alveolus
7. Colostrum feeding (percentage of body weight) in calf is done at the rate of:
 - (A) 5%
 - (B) 10%
 - (C) 15%
 - (D) 20%

8. A water soluble vitamin which is deficient in the egg :

- (A) Ascorbic acid
- (B) Thiamin
- (C) Cobalamin
- (D) Riboflavin

9. The glial cells which are responsible for myelin formation in peripheral nervous systems are :

- (A) Schwann cells
- (B) Oligodendrites
- (C) Astrocytes
- (D) Microglia

10. The hormone which causes the contraction of gall bladder to empty bile into small intestine :

- (A) Secretin
- (B) Gastrin
- (C) Cholecystokinin
- (D) Enterokinin

11. Maximum portion of CO_2 is transported in the blood in the form of :

- (A) Carbamino haemoglobin
- (B) Glycated haemoglobin

(C) Oxy haemoglobin

(D) Carboxy haemoglobin

12. The amount of Oxygen (ml) that each gram of Haemoglobin can carry is :

- (A) 1.34 ml
- (B) 19.6 ml
- (C) 19.9 ml
- (D) 13.4 ml

13. The effect of carbondioxide and hydrogen ions on the ability of hemoglobin to yield or receive oxygen is known as :

- (A) Haldane effect
- (B) Boyles effect
- (C) Laplace effect
- (D) Bohr effect

14. The proteolytic enzyme which helps in milk digestion by curdling is :

- (A) Gastric lipase
- (B) Rennin
- (C) Renin
- (D) Secretin

15. The amount of blood (litres) that flow through the mammary gland of cow to produce 1 litre of milk is :
- (A) 500
(B) 100
(C) 1500
(D) 1000
16. The production of CO_2 to CH_4 in the rumen ecosystem is in the ratio of :
- (A) 55 : 45
(B) 35 : 65
(C) 45 : 55
(D) 65 : 35
17. Lactation tetany is caused by deficiency of magnesium, but in mares it is caused due to deficiency of :
- (A) P
(B) Ca
(C) Mg
(D) Se
18. Among the following identify the most stressful environment for animals :
- (A) Low temperature and low humidity
(B) Low temperature and high humidity
(C) High temperature and low humidity
(D) High temperature and high humidity
19. Rate of gas (Litre / hour) production in cow during fermentation :
- (A) 30
(B) 5
(C) 10
(D) 1 litre
20. The first IVF buffalo calf in the world developed at NDRI is :
- (A) Garima
(B) Pratham
(C) Mahima
(D) Shreshtha
21. Nodal agency for carrying out livestock census in India :
- (A) IASRI
(B) ICAR
(C) MRI
(D) DADF

22. Iodine is absorbed in the body in the form of :
- (A) Iodine itself
 - (B) Iodide
 - (C) Iodate
 - (D) Potassium iodate
23. Immunoglobulin utilised during immune defense against protozoan parasites, helminths and Fasciola :
- (A) IgM
 - (B) IgE
 - (C) IgA
 - (D) IgD
24. The license to slaughter houses in India is issued by :
- (A) Animal Husbandry Department
 - (B) Food Safety and Standards Authority of India (FSSAI)
 - (C) Veterinary Council of India
 - (D) Local Veterinary Officer
25. The nitrogenous base pair present in RNA but absent in DNA :
- (A) Adenine
 - (B) Thiamine
 - (C) Uracil
 - (D) Cytosine
26. National Bureau of Animal Genetic Resources (NBAGR) is situated in :
- (A) Hisar
 - (B) Karnal
 - (C) Anand
 - (D) Meerut
27. Nutritional encephalomalacia (Crazy chick disease) is due to deficiency of :
- (A) Vitamin A
 - (B) Vitamin D
 - (C) Vitamin E
 - (D) Vitamin K
28. Father of Scientific Management :
- (A) F. W. Taylor
 - (B) Wayne F. Cascio
 - (C) Henri Fayol
 - (D) Theo Haimann

29. Skip generation inheritance is seen in :
- (A) Sex-influenced traits
 - (B) Sex-linked traits
 - (C) Sex-limited traits
 - (D) Autosomal inheritance
30. Satiety center is present in which part of hypothalamus :
- (A) Suprachiasmatic nuclei (SCN)
 - (B) Lateral hypothalamic nuclei
 - (C) Paraventricular nucleus
 - (D) Ventral hypothalamic nuclei
31. Goose stepping gait in pigs is due to deficiency of :
- (A) Thiamine
 - (B) Niacin
 - (C) Pantothenic acid
 - (D) Riboflavin
32. Stiff lamb disease (Nutritional myopathy in lambs) is due to the deficiency of :
- (A) Vitamin A and Calcium
 - (B) Vitamin D and Phosphorus
 - (C) Vitamin E and Selenium
 - (D) Vitamin K and Magnesium
33. Who was the first to conduct Artificial Insemination ?
- (A) Lazzaro Spallanzani – Dogs
 - (B) Brownell – Cow
 - (C) Brownell – Dogs
 - (D) Spallanzani – Cow
34. Organ of Jacobson is involved in the sense of :
- (A) Taste
 - (B) Smell
 - (C) Hearing
 - (D) Touch
35. The structure which play an important role during accommodation for near or far vision is :
- (A) Iris
 - (B) Ciliary muscle
 - (C) Pupil
 - (D) Cornea

36. Functional unit of hearing is :
- (A) Organ of Corti
 - (B) Outer ear
 - (C) Middle ear
 - (D) Eustachian tube
37. In birds exchange of gases occur at level of :
- (A) Ventrobronchi
 - (B) Alveoli
 - (C) Parabronchi
 - (D) Dorsobronchi
38. Who is the father of Artificial Intelligence ?
- (A) Alan Turing
 - (B) John McCarthy
 - (C) E. J. Perry
 - (D) Donald Michie
39. Essential mineral for wool growth is :
- (A) Zinc
 - (B) Magnesium
 - (C) Manganese
 - (D) Sulphur
40. The synthesis of lactose in the mammary gland from glucose and galactose by a complex enzyme system which is dependent on :
- (A) Alpha-lactalbumin
 - (B) Beta-lactalbumin
 - (C) Kappa casein
 - (D) Beta globulin
41. Maximum level of dietary lipid in ruminant ration without affecting fibre digestion :
- (A) 5%
 - (B) 10%
 - (C) 15%
 - (D) 20%
42. Wakefulness percentage is highest among the following animals is :
- (A) Cow
 - (B) Dog
 - (C) Horse
 - (D) Monkey

43. When the number of breedable females in a breed is less than 2000, then the status of the animal is said to be :
- (A) Insecure
 - (B) Vulnerable
 - (C) Endangered
 - (D) Critical
44. The gross energy content of unit weight of food less the gross energy content of the faeces resulting from consumption of unit weight of food is termed as :
- (A) Metabolisable energy
 - (B) Net energy
 - (C) Faeces energy
 - (D) Digestible energy
45. One of the following statement regarding food intake in ruminants in tropical countries is false :
- (A) Intake is restricted in late pregnancy
 - (B) Intake increases in lactation
 - (C) Palatability of food plays a major role in feed intake
 - (D) High environmental temperature reduces feed intake
46. The earliest silage additive to be used as a source of sugar and to stimulate fermentation :
- (A) Formalin
 - (B) Molasses
 - (C) Formic acid
 - (D) Protein substances
47. Substances added to food to encourage certain strains of bacteria in the gut at the expense of less desirable ones :
- (A) Antibiotics
 - (B) Pre-biotics
 - (C) Pro-biotics
 - (D) Anti-coagulants
48. The first animal to be domesticated was :
- (A) Goat
 - (B) Cattle
 - (C) Dog
 - (D) Sheep

49. Early weaning is difficult in buffalo calf

due to :

- (A) Agonist behaviour
- (B) Low maternal instinct
- (C) High maternal instinct
- (D) Calf needs more milk

50. NDF stands for :

- (A) Non Degradable Fibre
- (B) Neutral Detergent Fibre
- (C) Non Digestible Fibre
- (D) Nitrogen Digestible Fibre

51. The environmental temperature range between the lower and upper critical temperature, in which the animal does not need to increase or decrease its heat production, is termed as :

- (A) Upper Critical Temperature
- (B) Lower Critical Temperature
- (C) Thermo Neutral Zone
- (D) Lethal Temperature

52. Deficiency of this mineral reduces spermatozoa production in male animals :

- (A) Calcium
- (B) Potassium

(C) Magnesium

(D) Zinc

53. Who has been conferred the Padma Shri in the field of Animal Husbandry for the conservation of indigenous Vechur Cattle ?

- (A) S. Ayyapan
- (B) M. L. Madan
- (C) Sosamma Iype
- (D) Sanghamitra Bandhopadhyay

54. The immunoglobulin present in saliva is :

- (A) IgA
- (B) IgD
- (C) IgE
- (D) IgM

55. The protein fraction of cow's milk is dominated by :

- (A) Casein
- (B) Beta - lactoglobulin
- (C) Alpha - lactalbumin
- (D) Immunoglobulin

56. The number of minutes required to kill a known population of micro-organisms in a given food under specified conditions :

(A) Z value

(B) F value

(C) D value

(D) L_D value

57. As the age of the cow increases, one of the following statement is true with regard to its milk composition :

(A) Fat percentage increases

(B) SNF percentage increases

(C) Protein percentage decreases

(D) Lactose percentage increases

58. The first case of COVID in animals in India was reported in :

(A) Bengal Tiger

(B) Asiatic Lion

(C) Gir Cattle

(D) Labrador Dog

59. The rate of enzyme action is influenced by which of the following factors (i) Substrate concentration (ii) Enzyme concentration (iii) Temperature (iv) Environment :

(A) (i) and (ii)

(B) (iii) and (iv)

(C) (i) and (iii)

(D) All of (i), (ii), (iii) and (iv)

60. The protein polysaccharide complex which hardens in the presence of hydrochloric acid and produced in the gizzard of birds is :

(A) Insoluble Mucus

(B) Koillin

(C) Soluble Mucus

(D) Keratin

61. Based on the regulation of body temperature, camel can be classified as :

(A) Poikilotherm

(B) Ectotherm

(C) Endotherm

(D) Heterotherm

62. The term used to describe young ones of rabbit which require intense parental care till they are able to move out of their nest :
- (A) Nidifugous
 - (B) Nidicolous
 - (C) Precocial
 - (D) Uniparous
63. One of the following is a dual purpose cattle breed of Odisha :
- (A) Binjharपुरi
 - (B) Sindhi
 - (C) Kalahandi
 - (D) Ongole
64. A salt water tolerant buffalo breed of Odisha :
- (A) Kujang
 - (B) Kalahandi
 - (C) Chilika
 - (D) Arni
65. Parts of brain responsible for memory, learning, intelligence and thinking is :
- (A) Medulla oblongata
 - (B) Cerebellum
 - (C) Cerebrum
 - (D) Spinal cord
66. The temperament of a cow which is considered to be an ideal milker is normally :
- (A) Docile
 - (B) Restless
 - (C) Nervous
 - (D) Aggressive
67. Carabeef is the meat which is obtained from :
- (A) Cattle
 - (B) Sheep
 - (C) Swamp Buffalo
 - (D) Camel
68. The wool obtained from mature Bolangir sheep breed is :
- (A) Fine wool
 - (B) Crossbred wool
 - (C) Carpet wool
 - (D) Lamb wool
69. Animals that can survive unfavourable phases by entering a prolonged phase of dormancy called :
- (A) Torpor
 - (B) Aestivation
 - (C) Hibernation
 - (D) Partial Dormancy

70. The size of ruminoreticulum to abomasum at birth in a calf is approximately (in percentage) :
- (A) 69 : 23
 (B) 50 : 50
 (C) 31 : 61
 (D) 80 : 20
71. The system of binomial nomenclature for classification of living organisms was devised by :
- (A) Caroleus Linnaeus
 (B) Charles Darwin
 (C) Clutton Brock
 (D) Gregor Mendel
72. The condition in which a single gene influences more than one trait is referred to as :
- (A) Polyploidy
 (B) Multiple alleles
 (C) Phenocopy
 (D) Pleiotropy
73. The behaviour shown by a pup when seeking and responding to mother dog's care :
- (A) Epimeletic behaviour
 (B) Et-epimeletic behaviour
 (C) Eliminative behaviour
 (D) Allelomimetic behaviour
74. Which is the state animal of Odisha (Internet) ?
- (A) Sambar Deer
 (B) Chital
 (C) Sika Deer
 (D) Barasingha
75. Poultry eggs which weigh 60 g and above are graded as :
- (A) Small
 (B) Medium
 (C) Large
 (D) Extra large
76. Which of the following is a "Goitrogenic agent" ?
- (A) Gossypol
 (B) Glucosinolate
 (C) Mimosine
 (D) All of these
77. Increase in nutrition of ewes around 2 weeks prior to the onset of breeding season is termed :
- (A) Flushing
 (B) Step up
 (C) Kindling
 (D) Flavouring

78. One of the following is not a concept of Rapid Rural Appraisal used to understand the farmers problems at their farm :
- (A) Triangulation
 (B) Learning from the community
 (C) On the spot analysis and presentation
 (D) Rigid and not open to modification
79. Participatory Rural Appraisal shifts the initiative :
- (A) From Outsiders to locals
 (B) From Locals to outsiders
 (C) Within the locals
 (D) Restricts it to outsiders
80. What % of the dietary true protein escapes ruminal digestion ?
- (A) 30
 (B) 40
 (C) 50
 (D) 60
81. One of the following immunoglobulin is a pentamer :
- (A) IgG
 (B) IgA
 (C) IgM
 (D) IgD
82. Which of the following is gluconeogenic volatile fatty acid ?
- (A) Acetate
 (B) Propionate
 (C) Butyrate
 (D) Valerate
83. The Hutch system is used for housing of :
- (A) Dry Sow
 (B) Breeding Bull
 (C) Rabbits
 (D) Pony
84. Enzymes which catalyse the transfer of hydrogen, oxygen or electrons from one molecule to another are termed :
- (A) Isomerases
 (B) Lyases
 (C) Oxidoreductases
 (D) Hydrolases

85. With regard to RBCs from an animal with iron deficiency anaemia as compared to RBCs from normal animal :
- RBC from iron deficient animal can tolerate higher hypotonic solutions
 - RBC from normal animal can tolerate higher hypotonic solution
 - The tolerance to hypotonic solution is same for the RBC of both the animals
 - RBC of iron deficient animal hemolyse faster than the RBC of normal animal
86. Which of the following statement is true ?
- Bos indicus** have more sweat glands than **Bos Taurus**
 - Bos Taurus** can regulate temperature better than **Bos indicus**
 - Bos indicus** are less heat tolerant than **Bos Taurus**
 - Bos indicus** dissipate lesser amount of heat by evaporation than **Bos Taurus**
87. Meat from sheep which is between the age of one month to one year is termed :
- Mutton
 - Veal
 - Chevon
 - Lamb
88. Which one of the following has most cofactors per 100g reduced during its metabolism ?
- Carbohydrate
 - Protein
 - Fat
 - Vitamins
89. The urine of a dog which suffers from icterus due to obstructive jaundice would show :
- Dark yellow colour
 - Red colour
 - More urobilinogen in urine
 - No urobilinogen in urine
90. The state bird of Odisha is (Internet) :
- Coracias benghalensis**
 - Coracias garrulous**
 - Upupa epops**
 - Meropes apiaster**

91. The chemical nature of most of the plant material eaten by herbivores is :
- (A) Protein
 - (B) Vitamin
 - (C) Fat
 - (D) Carbohydrate
92. Which is the major site for de novo fatty acid synthesis in the animal body ?
- (A) Skeletal Muscle
 - (B) Spleen
 - (C) Heart
 - (D) Liver
93. Deamination of cytosine of the nucleotide leads to the formation of :
- (A) Thymine
 - (B) Guanine
 - (C) Uracil
 - (D) Adenine
94. Raw white of egg contains the protein :
- (A) Biotin
 - (B) Choline
 - (C) Avidin
 - (D) Thiamine
95. The deficiency of which of the following minerals would interfere with melanin production causing loss of hair colour :
- (A) Iodine
 - (B) Copper
 - (C) Iron
 - (D) Selenium
96. Which mineral is the most common cause of toxicoses in domestic animal ?
- (A) Lead
 - (B) Copper
 - (C) Zinc
 - (D) Mercury
97. Curing is best adapted to meat which has high content of :
- (A) Protein
 - (B) Fat
 - (C) Connective tissue
 - (D) Carbohydrate
98. Which gas is commonly employed or preferred for packaging of food ?
- (A) Nitrogen
 - (B) Oxygen
 - (C) Hydrogen
 - (D) Methane

99. With regard to the use of carbon dioxide for Modified Atmosphere Packaging, one of the following statements is not true :
- (A) The food will turn sour
 - (B) It inhibits anaerobic bacteria growth
 - (C) It can diffuse through packaging films
 - (D) It can result in packaging collapse
100. Which statement is correct with regard to the tenderness of meat ?
- (A) More the maturity of connective tissue, more is the tenderness
 - (B) Older animals meat have more tenderness
 - (C) Fresh cut meat are less tender than meat that is cut at later stage
 - (D) Rate of rigor development affects meat tenderness
101. Gross Energy (in percentage) loss in methane production is :
- (A) 7 - 9
 - (B) 10 - 12
 - (C) 3 - 4
 - (D) 40 - 50
102. While considering the carcass traits in swine, heritability is highest for :
- (A) Loin length
 - (B) Back fat thickness
 - (C) Belly thickness
 - (D) Fatty tissue content in carcass
103. The chief acid produced during silage making :
- (A) Lactic acid
 - (B) Butyric Acid
 - (C) HCl
 - (D) Acetic Acid
104. Brine, which can be used to merinate fish and meat, is a concentrated solution of :
- (A) Sodium sulphate
 - (B) Calcium chloride
 - (C) Sodium chloride
 - (D) Sodium bromide

105. Consider two aqueous solutions of one litre having (i) 1g of protein with molecular mass of 50000 Da (ii) 1g of protein with molecular mass of 4,00,000 Da. Which of the following statement is true with regard to these solutions :
- (A) Osmotic Pressure of (ii) is greater than that of (i)
 - (B) Osmotic Pressure of (i) is greater than that of (ii)
 - (C) Both have equal Osmotic Pressure
 - (D) Osmotic Pressure in the solutions may vary depending on the temperature
106. Chevon is preferred to chicken and pork due to :
- (A) Low fat content
 - (B) High energy content
 - (C) More cholesterol content
 - (D) Less iron content
107. Which animal is the source of Veal ?
- (A) Swamp Buffalo
 - (B) Adult cattle
 - (C) Cattle below 4 months age
 - (D) Goat below 2 months of age
108. Which of the following element contains maximum percentage of animal body weight ?
- (A) Nitrogen
 - (B) Hydrogen
 - (C) Iron
 - (D) Oxygen
109. Lyophilisation of food is also referred to as :
- (A) Smoking
 - (B) Curing
 - (C) Freeze drying
 - (D) Moist heating
110. Which animal spends the greatest amount of time sleeping ?
- (A) Horse
 - (B) Cow
 - (C) Sheep
 - (D) Cat
111. The chromosomes with the centromere near one end are called :
- (A) Acrocentric
 - (B) Telocentric
 - (C) Metacentric
 - (D) Submetacentric

112. Carcass of goat can be differentiated from that of sheep :
- Meat is dark red and coarse
 - Meat is pale red
 - Meat is fine in texture
 - Thorax is barrel shaped
113. The primary constituent of a sheep carcass is :
- Skin
 - Bones
 - Fat
 - Meat
114. The contribution of livestock sector to the total Gross Value Added (GVA) of India in the fiscal year 2018-19 :
- 7.50%
 - 4.11%
 - 25.6%
 - 2.00%
115. As per the census of 2018-19 the per capita (gms/day) consumption of milk in Odisha is :
- 145
 - 1181
 - 322
 - 1087
116. Intra-class correlation between repeated measurements of the same individual is a measure of :
- Genetic correlation
 - Heritability
 - Phenotypic correlation
 - Repeatability
117. An important body enzyme dependent on Biotin, which serves as prosthetic group of several enzymes :
- Pyruvate dehydrogenase
 - Pyruvate carboxylase
 - Lactate dehydrogenase
 - Glutamate decarboxylase
118. Which of the following variances is fully transmitted to the next generation ?
- Dominance variance
 - Epistatic variance
 - Additive genetic variance
 - Phenotypic variance

119. One of the following feeding regimen causes acute lactic acidosis in ruminants :
- (A) Low grain rations
 - (B) High grain rations
 - (C) Abruptly switching from high grain ration to hay
 - (D) Feeding only hay
120. The flavour that develops due to lipid oxidation of pre-cooked frozen meat :
- (A) Smoked
 - (B) Burnt
 - (C) Warmed Over
 - (D) Frozen
121. A small published booklet of 4-8 pages containing information which useful to farmers and extension workers :
- (A) Flash card
 - (B) Leaflet
 - (C) Folder
 - (D) Bulletin
122. In white meat as compared to red meat there is :
- (A) Myoglobin content is higher
 - (B) Leaner source of protein
 - (C) Has higher fat content
 - (D) More content of vitamins
123. The direction of change in the allelic frequencies cannot be predicted in :
- (A) Mutation
 - (B) Migration
 - (C) Selection
 - (D) Genetic drift
124. Parents having A and AB blood groups will not produce children having :
- (A) A blood group
 - (B) B blood group
 - (C) O blood group
 - (D) AB blood group
125. The probability that provides lines of demarcation between acceptance and rejection regions of null hypothesis is known as :
- (A) Confidence coefficient
 - (B) Power of test
 - (C) Level of significance
 - (D) Confidence interval

126. Which of the following genetic effects is responsible for the general combining ability of a line ?
- (A) Dominance effect
 (B) Over-dominance effect
 (C) Additive effect
 (D) Epistatic effect
127. The allelic interaction in which one of the two alleles is more expressed in the heterozygotes is :
- (A) Co-dominance
 (B) Incomplete dominance
 (C) Dominance
 (D) Over-dominance
128. Hardy-Weinberg equilibrium is not attained in a single generation of random mating in case of :
- (A) Sex-linked genes
 (B) Multiple alleles
 (C) Two autosomal alleles
 (D) Polyploids
129. The effect or influence of mother's genotype on the phenotype of her offspring independent of the genotype of the offspring is :
- (A) Reciprocal effect
 (B) Maternal effect
 (C) Extra nuclear effect
 (D) Direct effect
130. Total egg production in India during the year 2020 (in billions) :
- (A) 16
 (B) 25
 (C) 208
 (D) 114
131. In a diploid population proportion of heterozygotes never exceeds :
- (A) 0.10
 (B) 0.25
 (C) 0.50
 (D) 0.75
132. The approximate area covered between $\mu + s$ under a normal distribution curve is :
- (A) 68%
 (B) 95%
 (C) 99%
 (D) 34%

133. The mating of F_1 to the homozygous recessive parent is called :
- (A) In crossing
(B) Back crossing
(C) Test crossing
(D) Rotational crossing
134. A phenomenon in which the activity of a gene is increased or decreased according to the number of copies of that gene in the cell ?
- (A) Fitness
(B) Dosage compensation
(C) Expressivity
(D) Prepotency
135. The term mountain oysters refer to cooked :
- (A) Testicle of lambs
(B) Kidneys of calf
(C) Brain of goats
(D) Pancreas of birds
136. Which of the following errors is reduced by increasing the number of offspring in the progeny test ?
- (A) Systematic errors
(B) Non-sampling errors
(C) Errors of Mendelian sampling
(D) Type – II errors
137. How many genetically different germ cells are produced by two pairs of chromosomes ?
- (A) 1
(B) 4
(C) 2
(D) 8
138. A dominant expression that depends on the sex of the individual is called :
- (A) Simple dominance
(B) Co-dominance
(C) Sex-influenced dominance
(D) Sex-linked dominance
139. If there are 3 alleles for the trait in a population, the total number of genotypes occurring in the population will be :
- (A) 3
(B) 4
(C) 5
(D) 6

140. With regard to MGNREGA which of these statements is not correct :

- (A) Employment is provided to one person per family
- (B) Employment is provided for a minimum of 100 days in a year
- (C) Government provides loan to women at low interest rates
- (D) At least one third of the beneficiaries have to be women

141. The stage of cell division in which the chromosomes are most discrete and arranged in an equatorial plate ?

- (A) Prophase
- (B) Anaphase
- (C) Metaphase
- (D) Telophase

142. In a di-hybrid cross involving $AaBb \times AaBb$, the fraction of progeny that will be homozygous for all four genes will be :

- (A) $\frac{1}{4}$
- (B) $\frac{1}{16}$
- (C) $\frac{1}{2}$
- (D) $\frac{3}{4}$

143. In which of the following distributions the variance is always less than the mean ?

- (A) Normal distribution
- (B) Poisson distribution
- (C) Binomial distribution
- (D) Hyper geometric distribution

144. Motivation is a process of :

- (A) Enhancing the skill of individuals by spring them through the examples of various success stories
- (B) Initiating a conscious and purposeful action
- (C) To motivate laggards to get something extraordinary
- (D) All of these

145. Which of the following indicates Blue Revolution in India ?

- (A) Floriculture
- (B) Pisciculture
- (C) Sericulture
- (D) Horticulture

146. Estimate of the average correlation between genotype and phenotype measures :

- (A) Heritability
- (B) Repeatability
- (C) Genetic correlation
- (D) Selection differential

147. Which of the following species pairs possess equal number of chromosomes ?

- (A) River buffalo and cattle
- (B) Cattle and goat
- (C) Sheep and goat
- (D) Dog and poultry

148. Which one of the following was developed by ICAR in 1974 to provide need based and skill oriented vocational training to farmers and extension workers ?

- (A) SAUs
- (B) ATMA
- (C) KVK
- (D) ICMR

149. The major cation of the fluid inside the cell is :

- (A) Sodium
- (B) Chloride
- (C) Potassium
- (D) Bicarbonate

150. Which one of the following is not a stage of adoption ?

- (A) Diffusion
- (B) Motivation
- (C) Innovation
- (D) Experiment

151. A 3-tier Panchayati Raj System is recommended for a population :

- (A) Less than 10 lakhs
- (B) Between 10-15 lakhs
- (C) Over 20 lakhs
- (D) Less than 5 lakhs

152. Non allelic dominance is known as :

- (A) Over-dominance
- (B) Co-dominance
- (C) Partial dominance
- (D) Epistasis

153. With regard to Panchayati Raj, one of the statement is not correct :

- (A) Mahatma Gandhi advocated it as the foundation of India's Political System
- (B) It would be a centralized form of government
- (C) Each village would be responsible for its own affairs
- (D) It would aid in social justice

154. In the cell, digestive enzymes are mostly found in :

- (A) Lysosome
- (B) Ribosome
- (C) Vacuoles
- (D) Mitochondria

155. Farm management is an :

- (A) Inter farm science
- (B) Intra farm science
- (C) Inter regional farm science
- (D) International farm science

156. A measure of the intensity of natural selection action on the genotypes in the population :

- (A) Intensity of selection
- (B) Relative fitness

(C) Survival of the fittest

(D) Selection coefficient

157. The criss-cross pattern of inheritance is seen in :

- (A) Sex limited trait
- (B) Sex linked trait
- (C) Sex influence trait
- (D) None of these

158. Which of the following economic principles helps a farmer to allocate his limited resources to two different enterprises ?

- (A) Law of equi-marginal returns
- (B) Law of variable proportions
- (C) Law of comparative advantage
- (D) Principles of fixed and variable cost

159. Payment made to labour for assistance to production is termed :

- (A) Wage
- (B) Rent
- (C) Capital
- (D) Income

160. Surfactant (dipalmitoylphosphatidylcholine) is secreted by :
- (A) Type I alveoli cell
 - (B) Goblet cell
 - (C) Type II alveoli cell
 - (D) Mast cells
161. Respiratory centres inhibits inspiration to prevent further inflation in case of :
- (A) Deflation reflex
 - (B) Ferguson's reflex
 - (C) Hering Breuer inflation reflex
 - (D) Conditioned reflex
162. PCO_2 in alveoli is :
- (A) 50 mm Hg
 - (B) 40 mm Hg
 - (C) 90 mm Hg
 - (D) 45 mm Hg
163. Who is the father of Evergreen Revolution in India ?
- (A) Verghese Kurien
 - (B) R. S. Paroda
 - (C) M. S. Swaminathan
 - (D) Saumya Swaminathan
164. When marginal product is zero, the total product is :
- (A) At highest level
 - (B) At minimum level
 - (C) At same level
 - (D) Zero
165. A carbohydrate commonly known as dextrose :
- (A) Glucose
 - (B) Galactose
 - (C) D-Glucose
 - (D) Sucrose
166. The number of molecules of ATP produced by the total oxidation of acetyl CoA in TCA cycle is :
- (A) 08
 - (B) 10
 - (C) 12
 - (D) 16
167. Sulphur containing amino acid is :
- (A) Leucine
 - (B) Methionine
 - (C) Valine
 - (D) Asparagine

168. The principle of learning by seeing and doing is employed in :

- (A) Demonstration
- (B) Adoption
- (C) Innovation
- (D) Motivation

169. The inbreeding coefficient of full-sib mating is :

- (A) 0.500
- (B) 0.250
- (C) 0.125
- (D) 0.750

170. The process of determination of wages, rent, interest and profit is called :

- (A) Production
- (B) Distribution
- (C) Consumption
- (D) Exemption

171. The gain in body weight (gm) per gm of protein ingested is known as :

- (A) Net protein utilization
- (B) Digestibility coefficient
- (C) Biological value of protein
- (D) Protein efficiency ratio

172. The number of molecules of ATP produced by the total oxidation of acetyl CoA in TCA cycle is :

- (A) 8
- (B) 10
- (C) 12
- (D) 16

173. Maximum quantity of sodium is excreted through :

- (A) Sweat
- (B) Saliva
- (C) Feces
- (D) Urine

174. In dogs, metabolic alkalosis can occur when :

- (A) Renal failure
- (B) Recurrent vomiting
- (C) Excessive use of carbonic anhydrase inhibitors
- (D) Severe diarrhoea

175. Which of these is not a principle of veterinary extension education ?

- (A) Principle of adaptability
- (B) Principle of leadership
- (C) Principle of interest and need
- (D) Principle of formal education

176. The amount of feed an animal needs to maintain its body mass and composition without any weight loss or gain :

- (A) Balanced ration
- (B) Ideal ration
- (C) Maintenance ration
- (D) Production ration

177. One of the following is an excellent source of energy for dairy cattle :

- (A) Hay
- (B) Straw
- (C) Green grass
- (D) Silage

178. For the absorption of vitamin B₁₂ in the terminal ileum, one of the following is needed :

- (A) Gastric Intrinsic Factor
- (B) Extrinsic factor
- (C) Vitamin C
- (D) Folic acid

179. Increase in the concentration of one of these elements will increase heart beat :

- (A) Sodium
- (B) Potassium

- (C) Calcium
- (D) Magnesium

180. Which one of the following is not a source of Vitamin C ?

- (A) Guava
- (B) Egg
- (C) Lemon
- (D) Potato

181. Lamb carcass (less than one year age) is usually graded as :

- (A) Prime, Choice, Good, Utility
- (B) Prime, Good, Cull, Utility
- (C) Choice, Very good, Good, Discard
- (D) Choice, Good, Discard, Cull

182. One of the following is the primary source of energy in a ruminant animal :

- (A) Glucose
- (B) Fat
- (C) Volatile fatty acid
- (D) Protein

183. Optimizing feed digestibility and availability in ruminants will :

- (A) Increase methane production
- (B) Increase nitrogen expulsion
- (C) Reduce Carbon dioxide expulsion
- (D) Reduce methane production

184. One of the following is not a principle of economics :

- (A) Opportunity cost
- (B) Principle of involuntary returns
- (C) Law of diminishing returns
- (D) Rational people think at margin

185. One of the following best describes an Emu egg :

- (A) Thick shelled green colour weighing around 600 grams
- (B) Thin shelled brown colour weighing around 50-60 grams
- (C) Thick shelled green colour weighing around 50-60 grams
- (D) Thin shelled white colour weighing around 600 grams

186. Long term average condition of the meteorological variables in a given region is termed as :

- (A) Season
- (B) Climate
- (C) Weather
- (D) Temperature

187. One of the following is not a spontaneous ovulatory :

- (A) Cat
- (B) Monkey
- (C) Dog
- (D) Elephant

188. If more is demanded at the same price, it is :

- (A) Decrease in demand
- (B) Extension in demand
- (C) Contraction in demand
- (D) Increase in demand

189. The rule that states that the animals in tropical climates are smaller than those in temperate climates :

- (A) Gloger's rule
- (B) Bergman's rule
- (C) Wilson's rule
- (D) Allen's rule

190. One of the following is not a component of farm business :

- (A) Capital
- (B) Environment
- (C) Land
- (D) Management

191. The domestic animal having high tolerance to both heat and cold :

- (A) Cattle
- (B) Dog
- (C) Sheep
- (D) Camel

192. To transform dairying into an instrument for development of rural people in India, NDDDB was established in the year :

- (A) 1965
- (B) 1982
- (C) 1947
- (D) 1951

193. Non muscular parts of carcass of beef, mutton or pork which are either consumed as food or used to in production of other food :

- (A) Offal
- (B) Waste

(C) Viscera

(D) Offense

194. The dressing percentage in broiler chicken is usually around :

- (A) 20 – 30 %
- (B) 40 – 50 %
- (C) 90 – 100 %
- (D) 60 – 75 %

195. Carcass yield is high in pork because :

- (A) More fat percentage
- (B) Bones are denser
- (C) Skin and feet remain on the carcass
- (D) Pigs are heavier in size

196. An apex development bank set up by the Government of India to facilitate credit flow for development of agriculture and cottage industries :

- (A) IDBI
- (B) NABARD
- (C) IDFC
- (D) RBI

197. One of the following is a source of vegetable protein used for feeding buffaloes :

- (A) De oiled rice barn
- (B) Tallow
- (C) Groundnut oil
- (D) Groundnut oil cake

198. In a Ram, DNA can be estimated from all of the following except :

- (A) WBC
- (B) RBC
- (C) Semen
- (D) Root of hair follicles

199. The rule that states that in warm blooded animals the relative size of

the extremities are shorter in cooler parts of the ecological range than in warmer part :

- (A) Allen's rule
- (B) Gloger's rule
- (C) Bergman's rule
- (D) Wilson's rule

200. One of the following is used to estimate heat stress using both ambient temperature and relative humidity :

- (A) Temperature Humidity Index
- (B) Optimal Temperature Index
- (C) Thermo Neutral Index
- (D) Growth Index



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