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Test Booklet Series



T. B. C. : VS - 1 - 2018

**TEST BOOKLET**  
**VETERINARY ASSISTANT SURGEON**  
**PAPER - I**  
**(Veterinary Science)**

Sl. No. 1353

**Time Allowed : 2 $\frac{1}{2}$  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.

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

1. Complex symmetry occurs in :  
(A) Bacteriophage  
(B) TMV  
(C) Influenza virus  
(D) Pox Virus

2. Type of lenses employed in electron microscope :  
(A) Glass  
(B) Quartz  
(C) Optic fiber  
(D) Electromagnetic fields

3. Latency is a typical feature of :  
(A) Adenoviridae  
(B) Herpesviridae  
(C) Para myxoviridae  
(D) Circoviridae

4. Father of microbiology :  
(A) Anton Von Leuwenhoek  
(B) Edward Jenner  
(C) Peter Medawar  
(D) Robert Koch

5. Antiviral activity of interferons is because it inhibits :  
(A) Attachment  
(B) Transcription  
(C) Translation  
(D) Elongation

6. One of the following is NOT a virulence factor of bacteria :  
(A) Capsule

7. CAMP test is employed for differentiation of :  
(A) Staphylococcus species  
(B) Streptococcus species  
(C) Corynebacterium species  
(D) Serratia species

8. One of the following is NOT a property of bacterial plasmid :  
(A) Double stranded  
(B) Circular  
(C) Replicates autonomously  
(D) Essential for survival of bacterium

9. Viral genome are made up of :  
(A) RNA only  
(B) DNA only  
(C) Either RNA or DNA but never both  
(D) Both RNA and DNA

10. McFadyan reaction is employed for diagnosis of :  
(A) Anthrax  
(B) Pasteurellosis  
(C) Blackquarter  
(D) Viral diarrhea

11. The most common medium employed to grow fungi in the laboratory :

- Sabouraud agar
- Blood agar at pH5.6
- Nutrient agar at pH7.6
- Milk agar

12. Type of vaccine with potential for reversion to virulence :

- Killed vaccines
- Live Vectored vaccines
- Attenuated vaccines
- Recombinant vaccines

13. Bacteria that are motile without possessing external flagella :

- Vibrios
- Bacilli
- Streptococci
- Spirochetes

14. Unstained Leptospiral organisms can be seen directly under this type of microscope :

- Bright field
- Fluorescent
- Dark field
- Electron

15. The major immunoglobulin produced during secondary immune response is :

- Ig G
- Ig A

16. Natural active immunity is acquired through :

- Colostrum
- Vaccines
- Infection
- Synthetic antigen

17. The source of complement for CFT is :

- Rabbit serum
- Chicken serum
- Dog serum
- Guinea Pig Serum

18. One of the following is a thermo precipitation test employed if diagnosis :

- Weil Felix reaction
- Ascoli's test
- Anton's reaction
- Coomb's test

19. Liver fluke damage is the predisposing factor for :

- Malignant edema
- Braxy
- Gas gangrene
- Black disease

20. Which one of the following is considered as energy parasite ?

- Rickettsia
- Mycoplasma
- Chlamydia
- Mycobacteria

21. The simple quantitative test used in the diagnosis of *Brucella abortus* infection in cattle :

- Plate agglutination test
- Tube agglutination test
- Coomb's test
- IHA test

22. The specific regions on antigens, against which immune responses are directed, are called :

- Paratopes
- Epitopes
- Idiotypes
- Antitopes

23. Segmented RNA is seen in one of the following viruses :

- Influenza virus
- FMD viruses
- IBR virus
- Newcastle Disease virus

24. Hemorrhagic infarcts are commonly seen in :

- Liver
- Kidneys
- Lungs
- Heart

25. Anaplastic cells show nuclear-cytoplasmic ratio of

- 1 : 1

(B) 1 : 4

(C) 1 : 6

(D) 1 : 12

26. In apoptosis following feature is absent :

- Chromatin condensation
- Formation of cytoplasmic buds
- Cell shrinkage
- Inflammation

27. The type of leucocyte commonly noticed in high numbers in parasitic infections :

- Eosinophil
- Neutrophil
- Basophil
- Lymphocyte

28. The metal involved in wound healing :

- Iron
- Zinc
- Copper
- Cobalt

29. Grey hepatisation of lungs is attributed to :

- WBC infiltration in alveoli
- RBC infiltration in alveoli
- Atelectasis
- Emphysema

30. Type of inflammation NOT seen in the brain :  
(A) Fibrinous  
(B) Catarrhal  
(C) Purulent  
(D) Hemorrhagic

31. In gastric diseases, the type of anemia seen is :  
(A) Microcytic normochromic  
(B) Macrocytic normochromic  
(C) Aplastic anemia  
(D) Normochromic megaloblastic anemia

32. White spotted kidney is characterized by :  
(A) Diffuse interstitial nephritis  
(B) Glomerulonephritis  
(C) Embolic nephritis  
(D) Focal interstitial nephritis

33. The parasite commonly seen in dog heart is :  
(A) Oncocerca armillata  
(B) Strongylus vulgaris  
(C) Spirocerca lupi  
(D) Dirofilaria immitis

34. In ox urinary calculi are commonly seen in :  
(A) Groove of ox penis  
(B) Sigmoid curve  
(C) Urinary bladder  
(D) Renal pelvis

35. Gid in sheep is caused by :  
(A) Setaria digitata  
(B) Taenia echinococcus  
(C) Coenurus cerebralis  
(D) Taenia pissiformis

36. 'Panters' is a secondary complication seen in :  
(A) Bluetongue  
(B) Foot and mouth  
(C) Cattle plague  
(D) Hog cholera

37. Button ulcers in intestines and turkey egg appearance of kidneys are pathognomonic lesions seen in :  
(A) Swine fever  
(B) Swine pox  
(C) Swine vesicular exanthema  
(D) Swine erysipelas infection

38. Langhan's type giant cells are the characteristics in :  
(A) Clostridium infections  
(B) Tuberculosis  
(C) Botryomycosis  
(D) All of the above

39. Which of the following lesions is found in chicks infected with velogenic viscerotropic Newcastle disease virus ?  
(A) Haemorrhagic ulcers in small intestines  
(B) Splenomegaly  
(C) Necrotic foci on liver  
(D) Consolidation of both lungs

40. Name the mycotoxin which is hepatotoxic :  
(A) Ochratoxin  
(B) Trichothecenes  
(C) Aflatoxins  
(D) Citrinin

41. Which of the following nutritional deficiency disease is associated with rancidity of poly unsaturated fatty acids ?  
(A) Rickets  
(B) Encephalomalacia  
(C) Curled toe paralysis  
(D) Foot pad dermatitis

42. Characteristic intranuclear inclusions in tracheal epithelial cells are seen in :  
(A) Fowl pox  
(B) ILT  
(C) IBH  
(D) All of these

43. Colisepticemia is characterized by :  
(A) Perihepatitis  
(B) Necrotic hepatitis  
(C) Haemorrhagic liver  
(D) Fatty liver

44. Cecal coccidiosis is caused by :  
(A) Eimeria necatrix  
(B) Eimeria acervulina  
(C) Eimeria tenella  
(D) Eimeria brunetti

45. Anaesthetic action of thiopentone is terminated in a few minutes due to :  
(A) Redistribution  
(B) First pass effect  
(C) Excretion  
(D) Biotransformation

46. In a log dose response relationship, the curve is linear at :  
(A) 20-80 % of response  
(B) 10-90 % of response  
(C) 40-60 % of response  
(D) 45-55 % of response

47. Insulin receptors are categorized as :  
(A) Type III receptors  
(B) Type IV receptors  
(C) Type I receptors  
(D) Type II receptors

48. A muscarinic antagonist (M2) that is used as a patch behind the ear for controlling chemoreceptor trigger zone mediated vomiting is :  
(A) Apomorphine  
(B) Scopolamine  
(C) Prochlorperazine  
(D) Ondansetron

49. The receptors present in the skeletal muscle end plate are :  
(A) Nm receptors  
(B) Nn receptors  
(C) M1 receptors  
(D) M2 receptors

50. One of the following is a potassium sparing diuretic :  
(A) Mannitol  
(B) Clorthiazide  
(C) Amiloride  
(D) Caffeine

51. Action of growth hormone is mediated by :  
(A) Somatomedins  
(B) Somatostatins  
(C) Cyclic GMP  
(D) Phospholipase C

52. An antidote for heparin over dosage is :  
(A) Warfarin  
(B) Protamine  
(C) Pindone  
(D) Atropine

53. One of the following is oral hypoglycaemic agent :  
(A) Insulin  
(B) Gliclazide  
(C) Carbimazole  
(D) Prednisolone

54. One of the following is selective  $\beta 1$  blocker :  
(A) Isoproterenol  
(B) Propranolol  
(C) Atenolol  
(D) Prazosin

55. The determinants of bioavailability are :  
(A) Rheological parameters of blood  
(B) Amount of a substance obtained orally and quantity of intakes  
(C) Extent of absorption and hepatic first-pass effect  
(D) Glomerular filtration rate

56. What is the characteristic of the intramuscular route of drug administration ?  
(A) Only water solutions can be injected  
(B) Oily solutions can be injected  
(C) Opportunity of hypertonic solution injections  
(D) The action develops slower, than by oral administration

57. One of the following is used for the treatment of fasciolosis :  
(A) Lipid soluble  
(B) Water soluble  
(C) Low molecular weight  
(D) High molecular weight

58. Primary stain used in Gram's stain is :  
(A) Triclabendazole  
(B) Praziquantel  
(C) Pyrantel  
(D) Levamisole

59. The glucocorticoid-induced protein that targets phospholipase A2 is :

- (A) Calmodulin
- (B) Mx protein
- (C) Phospholamban
- (D) Annexin 1

60. The central neurotransmitter that is responsible for the short term memory :

- (A) Acetylcholine
- (B) Dopamine
- (C) Nitric oxide
- (D) 5-HT

61. The period between the time of infection of the host and onset of clinical symptoms is called :

- (A) Prepatent period
- (B) Biological incubation period
- (C) Patent period
- (D) Incubation period

62. The nematode egg that transmits "Black head diseases" in turkeys :

- (A) *Ascaridia galli*
- (B) *Gongylonema ingluvicola*
- (C) *Heterakis gallinarum*
- (D) *Syngamus trachea*

63. Faecal egg count method is done by :

- (A) Harada Mori method
- (B) Faecal culture
- (C) McMaster method
- (D) Willis technique

64. The following is called as stable fly :

- (A) *Tabanus striatus*
- (B) *Stomoxys calcitrans*
- (C) *Haematopota chrysops*
- (D) *Musca autumnalis*

65. Sebaceous adenitis/Acne is due to :

- (A) Psoroptic mange
- (B) Sarcoptic mange
- (C) Demodectic mange
- (D) Notodectic mange

66. *Culicoides austeni* act as vector for :

- (A) Yellow fever virus
- (B) Dengue fever virus
- (C) Bluetongue virus
- (D) Rift-valley fever virus

67. Classical vector for *Theileria annulata* is :

- (A) *Boophilus annulatus*
- (B) *Rhipicephalus appendiculatus*
- (C) *Hyalomma anatomicum*
- (D) *Amblyoma intergrum*

68. Hodge's garbage trap is employed to catch :

- (A) *Stomoxys* sp.
- (B) *Tabanus* sp.
- (C) *Musca* sp.
- (D) *Haematobia* sp.

69. Koch's blue bodies are :  
(A) Sporozoites  
(B) Oocysts  
(C) Macrogametes  
(D) Macroschizonts

70. Red water disease is synonym for :  
(A) Theileriosis  
(B) Babesiosis  
(C) Anaplasmosis  
(D) Toxoplasmosis

71. Amastigote state is present in :  
(A) *Trypanosoma evansi*  
(B) *Trypanosoma equiperdum*  
(C) *Trypanosoma equinum*  
(D) *Leishmania donovani*

72. The laboratory reagent used for sporulation of *Eimeria* species is :  
(A) 1%  $K_2Cr_2O_7$   
(B) 2%  $K_2Cr_2O_7$   
(C) 2.5%  $K_2Cr_2O_7$   
(D) 10%  $K_2Cr_2O_7$

73. Maltese cross is seen in :  
(A) *Babesia bigemina*  
(B) *Babesia cabali*  
(C) *Babesia bovis*  
(D) *Babesia equi*

74. Parasite which causes production of abnormal eggs in poultry is :  
(A) *Raillietina tetragona*

(B) *Ascardia galli*  
(C) *Prosthagonimus ovatus*  
(D) *Subulura brumpti*

75. Neurocysticercosis is due to :  
(A) Eating salads  
(B) Eating uncooked pork  
(C) Both (A) and (B)  
(D) Eating uncooked beef

76. Drug of choice for snaring disease in bullock is :  
(A) Anthiomaline  
(B) Albendazole  
(C) Ivermectin  
(D) Fenbendazole

77. Self cure phenomenon is seen in :  
(A) *Ostertagia ostertagi*  
(B) *Hemonchus contortus*  
(C) *Nematodirus spathiger*  
(D) *Trichostrongylus axei*

78. The fertile life of spermatozoa is longest in :  
(A) Cervix  
(B) Vagina  
(C) Uterus  
(D) Fallopian tube

79. The prognosis for rare leg structural unsoundness in bulls is :  
(A) Good  
(B) Fair  
(C) Poor  
(D) Questionable

80. Bulbo urethral gland is developed from :  
(A) Genital tubercle  
(B) Urogenital sinus  
(C) Genital fold  
(D) Genital swelling

81. Neighing is observed in :  
(A) Bull  
(B) Ram  
(C) Stallion  
(D) Boar

82. Cowper's glands are well developed in :  
(A) Bulls  
(B) Dogs  
(C) Boars  
(D) Stallion

83. The volume of semen ejaculate in stallion is :  
(A) 5 to 6 ml  
(B) 8 to 9 ml  
(C) 15 to 30 ml  
(D) 60 to 100 ml

84. Seminal plasma is slightly alkaline in :  
(A) Bore  
(B) Bull  
(C) Ram  
(D) Buck

85. Twinning is common cause of abortion in :  
(A) Cow  
(B) Ewe  
(C) Mare  
(D) Doe

86. The test used for diagnosis of tubal patency is :  
(A) Rubin's insufflation test  
(B) Cuboni test  
(C) A-Z test  
(D) Rabbit test

87. Posterior presentation is more common in :  
(A) Sow  
(B) Cow  
(C) Doe  
(D) Mare

88. Ventral deviation of head is called :  
(A) Breach presentation  
(B) Vertex presentation  
(C) Dog sitting posture  
(D) Transverse presentation

89. Ideal frequency of semen collection from bulls is :  
(A) Once in a week  
(B) Twice in a week  
(C) Thrice in a week  
(D) Four times a week

90. The average age (months) of attainment of puberty in Ewes is :

- (A) 8-12
- (B) 20
- (C) 22
- (D) 6

91. Optimum breeding age in cows is :

- (A) 10-12 months
- (B) 14-22 months
- (C) 30 months
- (D) 32 months

92. Winking of clitoris is observed in :

- (A) Sow
- (B) Cow
- (C) Mares
- (D) Ewes

93. Raspy, rough, nodular surface of vaginal mucosa is observed in cows affected with :

- (A) Trichomoniasis
- (B) Vibriosis
- (C) Brucellosis
- (D) Leptospirosis

94. Post coital pyometra is observed in :

- (A) Trichomoniasis
- (B) Vibriosis
- (C) Brucellosis
- (D) None of these

95. Leucocytosis with shift to left is observed in bitches affected with :

- (A) Endometritis
- (B) Vaginitis
- (C) Pyometra
- (D) Cervicitis

96. The dose of natural  $PGF_2\alpha$  in the treatment of pyometra in bitches is :

- (A) 1 mg / kg. body weight
- (B) 2 mg / kg. body weight
- (C) 100 micrograms / kg. body weight
- (D) None of these

97. The number of graafian follicles in cows during estrus is :

- (A) One
- (B) Two
- (C) Three
- (D) Four

98. The average number of follicular waves in cows are :

- (A) One
- (B) Two
- (C) Three
- (D) Six

99. Theca cells are stimulated by :

- (A) FSH
- (B) LH
- (C) Estradiol
- (D) Prolactin

100. The time of ovulation in cows is :

- (A) 6 to 10 hours after the end of estrum
- (B) 12 to 14 hours after the end of estrum
- (C) 6 to 10 hours before the end of estrum
- (D) 12 to 14 hours before the end of estrum

101. The flushing medium used for embryo collection is :

- (A) TCM 199
- (B) Normal saline
- (C) Dulbecco's phosphate buffer saline
- (D) None of these

102. In embryo transfer technology, the embryos are collected after (in days) artificial insemination :

- (A) 2-3 days
- (B) 4-5 days
- (C) 6-8 days
- (D) 10-12 days

103. Hermaphroditism is common in :

- (A) Mares
- (B) Cows
- (C) Goats
- (D) Bitches

104. The dose of LH for treating the cow affected with follicular cyst is :

- (A) 1000 IU
- (B) 1500 IU
- (C) 2000-3000 IU
- (D) 3000-5000 IU

105. Silent estrus is commonly observed in :

- (A) Cows
- (B) Buffaloes
- (C) Mares
- (D) Bitches

106. The hormone responsible for preparing the uterine mucosa for implantation is :

- (A) FSH
- (B) LH
- (C) Progesterone
- (D) Estogen

107. One of the following is NOT a estrus detection aid :

- (A) Teaser animal
- (B) Ferguson's reflex
- (C) Standing reflux
- (D) Visual observation

108. Eutocia is :

- (A) Normal parturition
- (B) Difficulty in parturition
- (C) Abortion
- (D) Embryonic mortality

109. The type of placenta in cattle is :

- (A) Zonary type
- (B) Discoid type
- (C) Diffused type
- (D) Cotyledonary type

110. In cattle, high milk yielders suffer from the following disease due to parathyroid insufficiency :

- (A) Ketosis
- (B) Parturient paresis
- (C) Lactation Tetany
- (D) Eclampsia

111. The drug preferred in the treatment of immature amphistomiasis is :

- (A) Praziquantel
- (B) Albendazole
- (C) Oxylozanide
- (D) Rafoxanide

112. After the death of animal, blood oozing out from natural orifices is a pathognomonic sign of the following disease :

- (A) Tetanus
- (B) Enterotoxaemia
- (C) Anthrax
- (D) Bluetongue

113. Dehydration can be assessed clinically in animals by :

- (A) Packed cell volume
- (B) Skin fold test

114. The disease state compounded of toxemia, hyperthermia and presence of large number of infectious micro organisms in the blood stream is :

- (A) Fever
- (B) Bacteremia
- (C) Toxemia
- (D) Septicemia

115. Sign of recurrent tympany and gruel like faces in cattle is seen in the following ruminal dysfunction :

- (A) Acid Indigestion
- (B) Alkaline Indigestion
- (C) Vagal Indigestion
- (D) Non-penetrating foreign body syndrome

116. Drug of choice in goat suffering with acid indigestion is :

- (A) Sodium bicarbonate
- (B) Sodium chloride
- (C) Sodium sulfate
- (D) Magnesium sulphate

117. Grunting in cattle, which is usually expiratory is due to :

- (A) Acute local peritonitis
- (B) Chronic local peritonitis
- (C) Acute diffuse peritonitis
- (D) Traumatic pericarditis

118. The major clinical finding of pneumonia in early state is :  
(A) Polypnea  
(B) Dyspnea  
(C) Fever  
(D) Abnormal Lung Sounds

119. Therapy of choice in bronchopneumonia of cattle is :  
(A) Oxygen  
(B) Respiratory stimulants  
(C) Bronchodilators  
(D) Antibiotics

120. Slab sided abdomen is seen in cattle suffering with :  
(A) Left abomasal displacement  
(B) Right abomasal displacement  
(C) Anterior abomasal displacement  
(D) Vagal indigestion

121. Excess molybdenum in diet of cattle causes :  
(A) Bronchitis  
(B) Gastritis  
(C) Rhinitis  
(D) Enteritis

122. Choose the mineral deficiency that causes chronic inappetance in cattle :  
(A) Copper  
(B) Cobalt  
(C) Zinc  
(D) Iron

123. Nyctalopia and xerophthalmia seen in hypo-vitaminosis A is due to :  
(A) Regeneration of visual purple  
(B) Degeneration of visual purple  
(C) Increased CSF pressure  
(D) Atrophy of epithelial cells

124. The therapeutic dose of vitamin A in hypovitaminosis A (per kg body weight) is :  
(A) 40 IU  
(B) 44 IU  
(C) 400 IU  
(D) 440 IU

125. The drug of choice in cattle suffering with postpartum haemoglobinuria is :  
(A) Calcium borogluconate  
(B) Magnesium sulphate  
(C) Sodium acid phosphate  
(D) Copper sulphate

126. Petechial haemorrhages of mucous membranes is a common finding seen in cattle suffering from :  
(A) Haemorrhagic septicemia  
(B) Anaplasmosis  
(C) Trypanosomiasis  
(D) Babesiosis

127. Intravascular hemolysis of RBC is a common finding in :  
(A) Babesiosis  
(B) Trypanosomiasis  
(C) Anaplasmosis  
(D) All the above

128. Drug of choice for tapeworm infestation in sheep is :  
(A) Albendazole  
(B) Praziquantel  
(C) Levamisole  
(D) Rafoxanide

129. Drug of choice for theileriosis in crossbred cows is :  
(A) Oxytetracycline  
(B) Quinapyramine sulphate  
(C) Diaminazine aceturate  
(D) Buparvaquone

130. Animals that are considered resistant to tuberculosis are :  
(A) Cattle  
(B) Goat  
(C) Pig  
(D) Sheep

131. Acarodermatitis in animals is caused by :  
(A) Ascaris  
(B) Ticks and Mites  
(C) Bacteria  
(D) Fungi

132. Pups affected with canine parvo virus die due to :  
(A) Dehydration  
(B) Dehydration and Enteritis  
(C) Dehydration and gastritis  
(D) Dehydration and myocarditis

133. One of the following is an example of wormian (sutural) bones :  
(A) Interfrontale  
(B) Parietal  
(C) Interchondral  
(D) Sphenoid

134. Acromion process is at the level of glenoid cavity in the scapula of :  
(A) Ox  
(B) Sheep  
(C) Horse  
(D) Dog

135. A bone which develops in a tendon of a muscle is called as :  
(A) Os cardis  
(B) Sesamoid  
(C) Sutural  
(D) Splint

136. The following large metatarsal bone of horse is called as 'Canon' bone :  
(A) 1<sup>st</sup>  
(B) 2<sup>nd</sup>  
(C) 3<sup>rd</sup>  
(D) 4<sup>th</sup>

137. Costal facets are located on the following vertebra(e) :  
(A) Atlas  
(B) 5<sup>th</sup> cervical  
(C) 1<sup>st</sup> to 13<sup>th</sup> dorsal  
(D) Lumbar

138. 'Keel' is a prominent bony prominence in the sternum of the following animal :  
(A) Fowl  
(B) Sheep  
(C) Horse  
(D) Ox

139. The following muscle replaces 'ventral longitudinal ligament' in 'neck' region :  
(A) Longus colli  
(B) Longissimus dorsi  
(C) Serratus ventralis  
(D) Complexus

140. Large quadrilateral shaped muscle of the hip and thigh is :  
(A) Quadriceps femoris  
(B) Biceps brachii  
(C) Sartorius  
(D) Biceps femoris

141. The apex of heart is located entirely in :  
(A) Right atrium  
(B) Left atrium  
(C) Right ventricle  
(D) Left ventricle

142. 'Circle of Willis' is formed from branches of emergent arteries which arise from :  
(A) Internal maxillary  
(B) Rete mirabile cerebri

143. Femoral artery gives the following branch in femoral canal :  
(A) Tibial  
(B) Popliteal  
(C) Deep femoral  
(D) Saphenous

144. The nerve which supplies gustatory fibres to posterior 1/3 of tongue is :  
(A) VII cranial  
(B) IX cranial  
(C) X cranial  
(D) XII cranial

145. Large venous trunk which drains blood from stomach and intestines is :  
(A) Portal  
(B) Iliac  
(C) Gastric  
(D) Post mesenteric

146. Recurrent laryngeal nerve is the branch of this cranial nerve :  
(A) XII  
(B) X  
(C) IX  
(D) XI

147. Part of intestine which is 'festoon' like in appearance :  
(A) Duodenum  
(B) Jejunum  
(C) Caecum  
(D) Colon

148. Complete tracheal rings are seen in :  
(A) Sheep  
(B) Fowl  
(C) Goat  
(D) Dog

149. 'Area cribrosa' is a feature seen in the kidney of the following animal :  
(A) Ox  
(B) Horse  
(C) Dog  
(D) Fowl

150. The accessory sex gland present in dog is :  
(A) Zygomatic  
(B) Seminal vesicles  
(C) Prostate  
(D) Cowper's

151. Sigmoid flexure of the penis is 'post scrotal' in one of the following :  
(A) Bull  
(B) Stallion  
(C) Dog  
(D) Boar

152. Ovary is in the form of a cluster of spherical shapes (grapes) in :  
(A) Hen  
(B) Cock  
(C) Rabbit  
(D) Sow

153. Lens of eye develops from the following germ layer :  
(A) Neural ectoderm  
(B) Facial ectoderm  
(C) Endoderm  
(D) Mesoderm

154. The following structure develops into vertebra :  
(A) Myotome  
(B) Nephrotome  
(C) Sclerotome  
(D) Darmatome

155. The cells which produce bile in liver are called as :  
(A) Hepatoblasts  
(B) Steatoblasts  
(C) Odontoblasts  
(D) Kupffer cells

156. Supporting cells of seminiferous tubules are called as :  
(A) Sertoli  
(B) Kupffer  
(C) Betz  
(D) Stave

157. One of the following is NOT correct about atropine sulphate actions :  
(A) Reduces Salivation  
(B) Reduces Bronchial Secretions  
(C) Reduces Heart Rate  
(D) Reduces intestinal motility

158. Diffusion Hypoxia may be associated with the use of :

- (A) Halothane
- (B) Isoflurane
- (C) Nitrous Oxide
- (D) Any inhalation anaesthetic

159. Xylazine causes bradycardia and II degree AV Block. This can be prevented by premedication with :

- (A) Yohimbine
- (B) Diazepam
- (C) Atropine
- (D) Ketamine

160. A wound with irregular torn edges is termed as :

- (A) Lacerated Wound
- (B) Penetrating Wound
- (C) Perforating Wound
- (D) Gun Shot Wound

161. The lower chain fatty acids present in milk has inhibitory effect on these bacteria :

- (A) Clostridium sp.
- (B) Lactobacillus sp.
- (C) Bacillus sp.
- (D) Bifidobacterium sp.

162. Dry Gangrene affects :

- (A) Intestines
- (B) Extremities
- (C) Muscles
- (D) Lungs

163. A double row of Lembert sutures is called :

- (A) Cushing Suture
- (B) Czerny Sutures
- (C) Connell Sutures
- (D) Reinforced Sutures

164. Persistent vomiting causes :

- (A) Simple Dehydration
- (B) Severe Dehydration
- (C) Dehydration with Acidosis
- (D) Dehydration with Alkalosis

165. The speed of a local anaesthetic solution in tissues can be safely increased by :

- (A) Addition of Hyaluronidase enzyme to the local anaesthetic solution
- (B) Addition of Adrenaline to the local anaesthetic solution
- (C) Addition of Atropine sulphate to the local anaesthetic solution
- (D) Increasing the concentration of the local anaesthetic solution

166. Vesicle formation is seen in this kind of burn injuries :

- (A) First degree
- (B) Second degree
- (C) Third degree
- (D) Charring

167. Pentobarbitone sodium is a :

- (A) Ultrashort acting barbiturate
- (B) Short acting barbiturate
- (C) Medium acting barbiturate
- (D) Long acting barbiturate

168. Pentazocine is a :

- (A) Non-narcotic analgesic
- (B) Narcotic analgesic
- (C) Sedative
- (D) Anaesthetic

169. Escape of blood from the blood vessels is termed as :

- (A) Hematoma
- (B) Hemorrhage
- (C) Hemangioma
- (D) Purpura

170. The upper lip and external nares on the corresponding side are desensitized by :

- (A) Supra Orbital Nerve Block
- (B) Infra Orbital Nerve Block
- (C) Local Infiltration
- (D) Mandibular Nerve Block

171. A drug induced state of deep sleep accompanied by analgesia is termed as :

- (A) Hypnosis
- (B) Narcosis
- (C) Genetal anaesthesia
- (D) Sedation

172. Dentigerous cyst is seen in the horses in :

- (A) Oral Cavity
- (B) Pharynx
- (C) Temporal Region
- (D) Mandibular Region

173. Extra chromic cat gut gets absorbed in approximately :

- (A) 10 days
- (B) 15 days
- (C) 20 days
- (D) 40 days

174. A fracture accompanied by a break in the continuity of the skin is termed as :

- (A) Simple fracture
- (B) Compound fracture
- (C) Complicated fracture
- (D) Double fracture

175. The site of injection for cranial epidural analgesia is :

- (A) Sacro-coccygeal space
- (B) I and II Intercoccygeal space
- (C) Lumbo-sacral space
- (D) Intervertebral foramen

176. For topical anaesthesia of cornea, lignocaine is instilled into the eye at a concentration of :

- (A) 1%
- (B) 2%
- (C) 3%
- (D) 4%

177. Forecast regarding the chances of recovery from a disease is termed as :  
(A) Diagnosis  
(B) Differential Diagnosis  
(C) Prognosis  
(D) Sequela

178. The filament in cathode of X-ray tube is made up of tungsten. Focal spot in anode is made up of :  
(A) Tungsten  
(B) Lead  
(C) Copper  
(D) Molybdenum

179. Morphine is contraindicated in :  
(A) Felines  
(B) Canines  
(C) Caprines  
(D) All animal species

180. Hematosalpinx means bleeding into :  
(A) Fallopian Tube  
(B) Uterus  
(C) Horns of the Uterus  
(D) Cervix

181. A linear accelerator machine is required to perform :  
(A) Ultrasonography  
(B) Radiography  
(C) Radiotherapy  
(D) Nuclear Scintigraphy

182. Trichiasis is abnormal deviation of the :  
(A) Eye lid  
(B) Eye lash  
(C) Eye ball  
(D) Pupil

183. Operation performed for chronic otitis externa :  
(A) Operation for Haematoma  
(B) Otoplasty  
(C) Zepp's Operation  
(D) Ear Cropping

184. A gamma camera is required to perform this diagnostic procedure :  
(A) Ultrasonography  
(B) Radiography  
(C) Physiotherapy  
(D) Nuclear Scintigraphy

185. Atropine sulphate as a premedicant in dogs is used at the dose rate of :  
(A) 0.02 mg / kg bw  
(B) 0.2 mg / kg bw  
(C) 2 mg / kg bw  
(D) 20 mg / dog

186. Drawer sign in dogs is associated with the disease of :  
(A) Elbow joint  
(B) Carpal joint  
(C) Hip joint  
(D) Stifle joint

187. Buttress foot is seen as a sequelae of:  
(A) Pyramidal disease  
(B) Navicular disease  
(C) Laminitis  
(D) Monday Morning disease

188. Exostosis of Phalanges is called :  
(A) Ring bone  
(B) Bobba bone  
(C) Side bone  
(D) Splint bone

189. Ossification of the lateral cartilage in horses is termed as :  
(A) Ring bone  
(B) Bobba bone  
(C) Side bone  
(D) Splint bone

190. Haematoma means :  
(A) Collection of blood in a body cavity  
(B) Collection of blood in an abnormal cavity  
(C) Formation of Pus in an abnormal cavity  
(D) Spontaneous Bleeding

191. The standards provided by BIS for milk and milk products are :  
(A) Optional  
(B) Mandatory  
(C) Safety levels  
(D) Academic

192. As per BIS standards, the SPC counts of pasteurised milk (per ml) :  
(A) 10000  
(B) 40000  
(C) 30000  
(D) 35000

193. The pathogenic organisms that contaminate milk from milkers and milk handlers :  
(A) *S. agalactiae*  
(B) *S. aureus*  
(C) *Bacillus* sp.  
(D) *Micrococci*

194. Microbial inhibitor used in detergent solution for cleaning of aluminium surfaces :  
(A) Sodium sulphate  
(B) Sodium metasilicate  
(C) Sodium hydroxide  
(D) Sodium carbonate

195. During decomposition of meat, a pronounced repulsive odour and an alkaline reaction takes place due to liberation of :  
(A)  $\text{CO}_2$   
(B)  $\text{NH}_3$   
(C)  $\text{H}_2\text{S}$   
(D)  $\text{CH}_4$

196. Captive bolt system of stunning is less effective in :

- (A) Cattle
- (B) Sheep
- (C) Pigs
- (D) Goats

197. Food animals that are highly susceptible to transportation stress are :

- (A) Cattle
- (B) Sheep
- (C) Pig
- (D) Goat

198. The air pollution surrounding electric power plant is due to :

- (A)  $\text{CO}_2$

(B)  $\text{SO}_2$

(C)  $\text{H}_2\text{S}$

(D) CO

199. The microorganism commonly used in the preparation of biopesticide :

- (A) *Bacillus subtilis*
- (B) *B. thuringiensis*
- (C) *B. cereus*
- (D) *B. stearothermophilus*

200. The chemical used for regeneration of zeolite :

- (A)  $\text{NaCl}$
- (B)  $\text{Na}_2\text{SO}_4$
- (C)  $\text{Na}_2\text{CO}_3$
- (D)  $\text{NaHCO}_3$

**SPACE FOR ROUGH WORK**



AC – 1A/6 (110)

( 23 ) Veterinary Assistant Surgeon (Paper – I)

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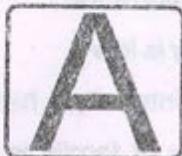


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**TEST BOOKLET**

VETERINARY ASSISTANT SURGEON SI. No.

**2233**

**PAPER - II**

**(Animal Science)**

**Time Allowed : 2½ Hours**

**Maximum Marks : 400**

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1. Pullet is female of :  
(A) Turkey  
(B) Duck  
(C) Chicken  
(D) Quail

2. Perosis is caused due to deficiency of :  
(A) Calcium  
(B) Phosphorus  
(C) Manganese  
(D) Iron

3. Average egg weight (g) of quail is which of the following :  
(A) 10  
(B) 15  
(C) 20  
(D) 25

4. The main source of energy of the developing embryo drives during last phase of development is from which of the following :  
(A) Yolk sac  
(B) Carbohydrate  
(C) Fat  
(D) All of the above

5. Maize is deficient in the following amino acids :  
(A) Methionine and lysine  
(B) Methionine and Arginine  
(C) Lysine and Arginine  
(D) Lysine and Tryptophan

6. In idealistic population the family selection cannot be better than the individual selection if the :  
(A) Heritability is low  
(B) Selection intensity is high  
(C) Heritability of family is larger than the individual basis  
(D) None of the above

7. Ranikhet vaccination can be done by the following route :  
(A) Intra muscular  
(B) Intra peritoneal  
(C) Subcutaneous  
(D) All of the above

8. Rank of India in egg production is :  
(A) 8<sup>th</sup>  
(B) 6<sup>th</sup>  
(C) 5<sup>th</sup>  
(D) 4<sup>th</sup>

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 is 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) Inbred
- (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 population will be :

- (A)  $1/Ne = 1/4 M + 1/4 F$
- (B)  $1/Ne = 3/16 M + 1/16 F$
- (C)  $1/Ne = 3/32 M + 1/32 F$
- (D)  $1/Ne = 3/32 M + 1/32 F$

18. The goal of the selection can be defined under :

- (A) Artificial selection
- (B) Natural selection
- (C) Both artificial and the natural selection
- (D) None of the above

19. Which one is not polysaccharides ?  
(A) Raffinose  
(B) Dextrins  
(C) Inulin  
(D) Cellulose

20. In birds the main end product of protein metabolism are :  
(A) Uric acid  
(B) Allatoin  
(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) Steroides

25. Which is the main non-protein nitrogenous components 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 :  
(A) Sex-influenced inheritance  
(B) Sex-limited inheritance  
(C) Sex-linked inheritance  
(D) None of these

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-influenced trait
- None of the above

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

(C) Reciprocal Recurrent Selection  
 (D) All of these

34. Manifold 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 :

- Type-I
- Type-II
- Type-I and Type-II
- None of the above

(5)

(Turn over)

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) Chevon

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 has how many million of sperms ?  
(A) 1100  
(B) 1300  
(C) 1500  
(D) 1800

45. Silent heat occurs in cow (in days) postpartum :  
(A) 10 – 13  
(B) 13 – 15  
(C) 15 – 18  
(D) 60

46. Age of sexual maturity in cattle (in years) :  
(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 fish's source in India ?  
(A) Jamuna  
(B) Chambal  
(C) Ganga  
(D) Narmada

50. Skeleton of fetus 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 joint ?  
(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 occur 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 needed for an adult sheep ?  
(A) 2 litter 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

63. Nutritional deficiency occurs 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 – 40 mm 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) Jersy  
(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 Cromatid  
(B) Non-sister cromatid  
(C) Cromosome  
(D) Cromonema

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 chromosomes  
(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 these

74. Which is a tetrasomic condition ?  
(A)  $2n - 1$   
(B)  $2n + 1 + 1$   
(C)  $2n + 2$   
(D)  $2n + 3$

75. Mutation induced by S-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) DNase  
(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% son  
(B) 50% daughter  
(C) 50% off springs  
(D) 50% son and 50% daughter

78. Sum total of genes in a 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 : (B) Mutation  
(A) In-breeding (C) Migration  
(B) Out-breeding (D) Aberration  
(C) Both of the above  
(D) None of the above

89. In-breeding coefficient is a measure of increase of : (A) Tetraploid  
(B) Triploid  
(C) Octaploid  
(D) Hexaploid  
(A) Homozygosity  
(B) Heterozygosity  
(C) Both of the above  
(D) None of the above

90. Breeding system by which a few pure breed sires can rather quickly transform a non-descript population into the purebred is called : (A) XX in females and XY or (XO) in males  
(B) XY in females XX in males  
(C) XO in females XX in males  
(D) XX in females and XX in males  
(A) Cross breeding  
(B) Live breeding  
(C) Out crossing  
(D) Grading up

91. Who described the operon concept in E. coli ? (A) Oral contraceptives  
(B) Hormones  
(C) Genetic code  
(D) Immunology  
(A) Mendel, Darwin  
(B) Hugo de Vries, Muller  
(C) Miller, Muller  
(D) Francis Jacob and Jacques Monod

92. H. J. Muller reported that the X-rays induces : (A) Selection  
(B) Tellichery  
(C) Kadaknath  
(D) All of these

93. Common wheat with 42 chromosomes is : (A) Aseel  
(B) Migration  
(C) Both of the above  
(D) None of the above

94. The sex chromosomes of females and males are respectively : (A) XX in females and XY or (XO) in males  
(B) XY in females XX in males  
(C) XO in females 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 these

97. Double humped camels are found in :  
(A) Rajasthan  
(B) Gujrat  
(C) Ladakh  
(D) All of these

98. Pashmina is obtained from :  
(A) Angora rabbit  
(B) Angora goat  
(C) Karakul sheep  
(D) None of these

99. Pregnancy feeding allowance in cow should start after :  
(A) 6 months  
(B) 8 months  
(C) 3 months  
(D) None of these

100. The human liver cannot produce :  
(A) Starch  
(B) Glycose  
(C) Glycogen  
(D) None of these

101. TCA cycle is operative in :  
(A) Mitochondria  
(B) Microsomes  
(C) Cytosol  
(D) None of these

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 these

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) Non-contractile 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 uterus 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 fibres 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

113. The quantity 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) Vitaminous
- (D) Sterol

115. Amino acids which are not synthesized in the body are known as :

- (A) Non-essential
- (B) Essential
- (C) Both of the above
- (D) None of the above

116. The principal function of colon is \_\_\_\_\_ of water and electrolytes from the chyme.

- (A) Absorption
- (B) Excretion
- (C) Both of the above
- (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 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) 5 m Eq/1
- (B) 10m Eq/1
- (C) 142mEq/1
- (D) 150mEq/1

121. Successful embryo development in the recipient 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 superovulate 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) Ductless
- (B) Not
- (C) True
- (D) False

129. Pancreatic trypsinogen is converted to trypsin by the following enzyme mainly present in the duodenal juice :

- (A) Pancreozyme
- (B) Peptidase
- (C) Enterokinase
- (D) Carbonic anhydrase

130. Oxytocin synthesis occurs in 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 these

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) 1m
- (D) 20 cm

135.  $\text{Hb}_4\text{O}_3$  have Iron in :

- (A)  $\text{Fe}^{++}$
- (B)  $\text{Fe}^{+++}$
- (C) Both (A) and (B)
- (D) None of these

136. Respiratory pressure of  $\text{O}_2$  in arterial blood is :

- (A) 48 mm Hg
- (B) 46 mm Hg
- (C) 40 mmHg
- (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 these

138. Which of the following is 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 Juxtaglomerular cells through :

- (A) Renin angiotensin system
- (B) Prostaglandins of medulla
- (C) Epinephrine
- (D) All of the above

141. Percentage of  $\text{CH}_4$  in rumen is :

- (A) 7
- (B) 65
- (C) 6
- (D) 25

142. Percentage of  $\text{CO}_2$  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 – ve cocci
- (B) Non-spore formation
- (C) Anaerobes
- (D) All of the above

145. A muscle possesses 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 gelatin
- (C) Collagen fibers get 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 butte 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 to 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) Gelatin  
(D) Reticulin

156. Which meat has cherry red color ?  
(A) Mutton  
(B) Pork  
(C) Chevron  
(D) Beef

157. Brown color 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 peter  
(B) Salt  
(C) Pickle  
(D) All of these

161. Which is bactericidal 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 epitaph 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 rest essentially required 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 Milestein

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 migration of glutamic acid in electrophoresis is towards :

- (A) Cathod
- (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 is :

(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 these

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 responsibilities of 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 (A.P.)
- (D) B.B.P.U.A. and T. Pantnagar (UP)

187. A good extension programme should be :

- (A) Flexible
- (B) Rigid
- (C) Both of the above
- (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 only
- (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 of the above  
(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) Co-operative system  
(C) Commutative system  
(D) Social system

195. Process by which individual maintains contact 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) Black board

199. Traditional people oriented to past and never accept an innovation are known as :  
(A) Innovation  
(B) Adaptor  
(C) Rejecter  
(D) Laggard

200. Operation flood II was started in :  
(A) 1970  
(B) 1978  
(C) 1986  
(D) 1969

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