

University of Mosul
College of Veterinary Medicine
Dept.: Pathology and poultry diseases
Class: Competitive examination for Ph.D
degree Candidates
Subject: Veterinary Pathology



Final Examination
Time: 3 Hours
Date: 30/6/2025
Lecturer: Department of Pathology
and Poultry Diseases.

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- Is induced by antigen-antibody complex that produces tissue damage, The antibodies involved in this reaction are IgG, IgM or IgA.
a- Type III hypersensitivity b Type II hypersensitivity
c- Type I hypersensitivity d - Type IV hypersensitivity.
- is an acute contagious disease of small ruminants, particularly sheep and goats. Clinical signs may include fever, necrotic stomatitis, gastroenteritis, and bronchopneumonia.
a- Blue tongue b- contagious ecthyma c- Rinderpest d- Peste des petits ruminants.
- Enlargement of the sheep carpal joint (Hygroma) with purulent exudate is lesions seen in
- a-Babesiosis b- actinobacillosis c- Brucellosis d- Pulmonary adenomatosis
- Ovine progressive pneumonia or maedi-visna, is a chronic disease of sheep due to
- a-Lentiviruses b- Orbivirus c- Morbillivirus d- Poxvirus
- Which Mycoplasma species is primarily associated with infectious sinusitis in turkeys?
A. *Mycoplasma gallisepticum*
B. *Mycoplasma synoviae*
C. *Mycoplasma meleagridis*
D. *Mycoplasma iowae*
- Which of the following avian viruses contains a segmented RNA genome?
A. Infectious bursal disease virus
B. Newcastle disease virus
C. Avian leukosis virus
D. Avian reovirus
- Which of the following best explains the pathogenesis of ascites syndrome in broilers?
A. Chronic viral myocarditis
B. High-altitude hypoxia leading to pulmonary hypertension
C. Renal amyloidosis
D. Bursal atrophy with subsequent *E. coli* septicemia
- Avian leukosis virus primarily induces which type of neoplasia in chickens?
A. Peripheral nerve lymphoma B. Myelocytomatosis C. Osteopetrosis D. Bursal lymphoma
- All the following equine diseases are Pyogenic in nature except
- a- Botriomycosis . b- Glanders . c-Tetanus . d-Strangles.
- All the following names refers to the glanders disease except
- a- Farcy . b-Dourine c-Droes . d- Malleus.
- African horse sickness is a disease caused by
- a- Pestivirus /Togaviridae. b-Lentivirus/Retroviridae. c-Arterivirus/arterioviridae
d-Orbivirus / Reoviridae.

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12. All the following diseases are arthropods (Insect) transmitted except
a-Trypanosomiasis. b-Equine infectious anemia. c-Equine viral arteritis. d-African horse sickness.
13. In the peracute form of African horse sickness animal may die from
a-Respiratory distress. b-Cardiac failure. c-Hepatic failure. d-Renal failure.
14. What is the main pathogenic mechanism in Rinderpest infection?
A. Direct skin invasion by the virus
B. Viral replication in muscle tissue
C. Viral replication in lymphoid tissue causing immunosuppression
D. Stimulation of macrophages to produce IL-2
15. Ulcers are lesions can be seen in horse infected by the following pathogens except
a-*Trypanosoma evansi* . b-*Streptococcus equi* . c-*Burkholderia mallei* d- Lentivirus .
16. In strangles a type of bleeding called purpura hemorrhagica may develop as a result of
a-Streptococcal toxin b- Sensitivity to streptococcal protein . c-Rupture of capillaries.
d-Hepatic damage.
17. Glomerulonephritis induced by deposition of virus -antibody complexes appears after
Infection. a- Lentivirus . b-Orbivirus . c-Arterivirus . d-Rhinovirus
18. Swelling and edema of lymph nodes is a notable sign in the following diseases except
..... a-Equine infectious anemia. b-Epizootic Lymphangitis. c-Glanders. d-Tetanus.
19. Which of the following exudate types is characterized by the presence of abundant neutrophils and pus?
A. Serous inflammation
B. Fibrinous inflammation
C. Purulent inflammation
D. Catarrhal inflammation
20. Which type of vascular response is responsible for increased viscosity of blood during inflammation?
A. Vasodilation
B. Transient vasoconstriction
C. Slowing and stasis of blood flow
D. Endothelial contraction
21. Which of the following components in the exudate forms a physical barrier and contains antibodies?
A. Albumin
B. Water
C. Fibrin
D. Platelets
22. The transcribing enzyme is
a- Ligase b- DNA polymerase c- RNA polymerase d-Amino-acyl transferase
23. The first mRNA codon to specify an amino acid is always
a- TAC b- UAA c- UAG d- AUG.
24. Transcription and translation of a gene composed of 30 nucleotides would form a protein containing no more than

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- a-10 amino acids b- 30 amino acids c- 15 amino acids d- 60 amino acids
25. Which site of the tRNA molecule binds to the mRNA molecule?
a- Anticodon b- Codon c- Amino acid d- 5 prime end
26. Which of the following statements about hyperemia is correct?
A- Active hyperemia involves blood accumulation in veins due to vessel obstruction
B- Passive hyperemia is commonly caused by increased arterial pressure
C- Hyperemia refers to an increased amount of blood in the circulatory system
D- Hyperemia leads to decreased organ size and pale appearance
27. Which of the following statements is TRUE regarding thrombosis?
A- Thrombosis only occurs in veins and is never found in the heart
B- A saddle thrombus is found on the valves of the heart
C- Thrombosis involves the formation of a blood clot within a blood vessel wall
D- Septic thrombus is sterile and contains no microorganisms
28. Which of the following best describes an embolism?
A- The rupture of blood vessels leading to hemorrhage
B- A clot that forms and remains only in the heart
C- The presence of a foreign body in circulation causing vessel obstruction
D- The thinning of blood due to decreased cell components
29. Which of the following best describes ischemia?
A- An increased supply of venous blood to an organ
B- The deficiency of arterial blood supply to a part of an organ
C- A sudden increase in arterial pressure causing vessel rupture
D- Enlargement of the organ due to accumulation of lymph
30. Which of the following best describes an infarction?
A- Excessive bleeding caused by rupture of a vein
B- A triangular area of tissue death caused by lack of blood supply
C- Swelling of tissue due to fluid accumulation
D- Thickening of blood vessel walls without tissue damage.
31. Which of the following best describes shock in the circulatory system?
A- A sudden increase in arterial pressure due to emotional stress
B- A circulatory disturbance marked by decreased blood volume and hemoconcentration
C- The rapid regeneration of blood vessels following injury
D- A localized reaction of tissues to bacterial infection
32. Which of the following histopathological lesions is characteristic of Bovine Viral Diarrhea (BVD)?
A. Fatty degeneration of the liver
B. Erosions of the oral mucosa with lymphoid depletion in intestines
C. Diffuse pulmonary fibrosis
D. Myocardial necrosis

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33. Which of the following statements best describes *Actinomyces* (*Lumpy Jaw*) in cattle?
- A. A contagious viral disease causing oral ulcers
 - B. A chronic infectious disease causing rarefying osteomyelitis of jaw bones
 - C. An acute febrile disease affecting the lungs
 - D. A self-limiting disease of the liver
34. White muscle disease is commonly caused by deficiency of:
- A- Vitamin B1 and zinc
 - B- Vitamin E and selenium
 - C- Iron and calcium
 - D- Vitamin D and copper.
35. The characteristic lesion of Blackleg (Black Quarter) is:
- A. Nodular granulomas of the tongue
 - B. Suppurative osteomyelitis of the jaw
 - C. Emphysematous and crepitating lesions of skeletal muscles
 - D. Fibrotic lesions of the liver
36. There was a dramatic increase in mortality in a flock of 5-week-old broiler chickens. In 10 days, the mortality dropped significantly but many birds in the flock developed torticollis (twisting of the neck). From this case history, which of the following diseases would be the first on your list of rule-outs?
- A-nutritional encephalomalacia
 - B-Newcastle disease
 - C-Marek's disease
 - D-avian influenza.
37. Migratory waterfowl are considered as an important source of infection of poultry with which of the following viral diseases?
- A- avian influenza
 - B- Newcastle disease
 - C- avian encephalomyelitis
 - D- infectious bronchitis.
38. Which virus is known to be immunosuppressive
- A. Avian metapneumovirus
 - B. Avian leukosis virus
 - C. Infectious bronchitis virus
 - D. Chicken anemia virus (CAV).
39. Which of the following animals are also infected by members of the Caliciviridae family?
- a. A-Only cats and dogs
 - b. B-Only birds and reptiles
 - c. C-Rabbits, livestock, reptiles, birds, and amphibians
 - d. D-Only amphibians

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40. Which of the following is the main route of infection for *Mycobacterium bovis* in cattle?
- A. Skin penetration
 - B. Vector-borne transmission
 - C. Inhalation of droplets or ingestion of contaminated materials
 - D. Sexual transmission.
41. What is the most characteristic gross lesion of Tuberculosis in cattle?
- A. Emphysematous muscles
 - B. Edematous tongue
 - C. Caseous tubercles surrounded by fibrous capsules
 - D. Petechial hemorrhages on mucosa.
42. Which of the following is characteristic of interstitial pneumonia?
- A. Suppurative exudate in bronchi
 - B. Thickening of alveolar walls
 - C. Accumulation of fibrin in airways
 - D. Obstruction of bronchioles by parasites
43. A typical gross lesion of fibrinous pneumonia in cattle includes:
- A. Multifocal abscesses
 - B. Red to gray hepatization of lung lobes
 - C. Pulmonary edema and emphysema
 - D. Thick mucoid discharge in airways
44. Pulmonary edema can occur due to all the following *except*:
- A. Left-sided heart failure
 - B. Increased alveolar permeability
 - C. Decreased plasma oncotic pressure
 - D. Bronchial lymph node hyperplasia.
45. Apoptosis is a single cell-initiated, gene-directed cellular, seen in.....
- A) Atrophy. B) removing "Aged" cells C) Hyperplasia. D) Hypertrophy.
46. Hydropic degeneration, swelling of mitochondria, pyknosis and fragmentation of the nucleus, and eventual cell lysis, all these process literally refers to.....
- A) Metaplasia. B) Necrotic cell death. C) Neoplasia. D) Pneumonia.
47. The necrosis of nerve fibers starts from myelin sheath is called
- A) Hydropic degeneration. B) Demyelination. C) Wallerian Degeneration D) Meningitis.
48. The term "hepatization" of the lungs refers to:
- A. Liver metastasis to lung tissue
 - B. Color and consistency change resembling liver



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- C. Granulomatous reaction in lung
D. Formation of fibrotic nodules
49. ----- means the brain is present in the skin sac.
A)Meningoencephalocele. B) Meningocele. C) Hydrocephalus D) Hypoplasia.
50. Defined as brain tissue that protrudes out of the cranial cavity and is not covered by skin.
A) Cytopathology. B) Exencephaly. C) Meningoencephalocoeles. D) Meningoceles.
51. Necrosis of neurons in brain is known as....
a. A)Infarction B) Embolism C) Myelomalacia D) Encephalomalacia.
52. It is inflammation of the cerebral part of brain.
a. A) Salpingitis. B) Meningitis C) Granulation. D) Encephalitis.
53. The necrosis of neurons in white matter is called as
A)Leukoencephalomalacia B)Microscopic lesions. C)Cytopathology. D) Meningocele.
54. Necrosis of neurons in spinal cord is termed as -----.
A) polio encephalomalacia. B) Hydrocephalus. C) Neoplasia. D) Myelomalacia.
55. Acute anemia can lead to ----if more than one third of the blood is lost and not replaced.
A-death B-hypertension C-hypotension D-pale mucous membranes.
56. Liver disease is one of the causes of-----
A-lymphoma B-non-regenerative anemia C-lymphoma D-regenerative anemia.
57. Eosinophilia occurs due to.----
A-parasitic infections B-tissue necrosis C-coagulopathies D-bacterial infections.
58.is one of the microorganisms that causes granulomatous lymphadenitis.
A-Equine herpes virus-1 B-Mycobacterium bovis C-Feline leukemia virus D-Haemonchus spp.
59. Increased hemosiderin deposition suggests presence of.-----
A-acute splenitis B-bone marrow hyperplasia C-Increased erythrocyte destruction
D-Increased erythrocyte half-life.
60.is accumulation of clear to light yellow, watery, serous fluid in the pericardial sac.
A- Hemopericardium B- Hydro pericardium C- Pericarditis D- pneumothorax
61. Generalized dilatation occurs in superficial veins of legs in women called.-----
A- Phlebitis B- Phlebectasia C- Varicosity D- Arteritis
62.is a dilatation of lymph vessels
A- Lymphangitis B- varicosity C- Lymphangiectasia D- lymphosarcoma
63. Rapture of the thoracic duct
A- Phlebitis B- varicosity C- chylothorax D- Hernia
64. Occurs when saprophytic bacteria are introduced into pericardial sac



- A- Hemopericardium B- Hydro pericardium C- Gangrenous pericarditis
D- suppurative pericarditis
65. To maintain cell number homeostasis in organ systems that have regenerative capacity
A-Necrosis B- apoptosis C- hyperplasia D- degeneration.
66.is a process that usually affects groups of cells in contrast to single isolate
cells as observed in apoptosis.
A-Degeneration B- Necrosis C- Inflammations D- program cell death.
67.Refers to excessive secretion of saliva resulting in an abnormal accumulation in the
mouth.
a-Ptyalism b- Caries c- Palatoschisis d- Parasitism
68. What is true about Canine Distemper Virus (CDV)?
A-CDV is a double-stranded DNA virus that affects only domestic dogs.
B-CDV primarily replicates in the gastrointestinal tract and does not impact the nervous system.
C-CDV is a single-stranded, negative-sense RNA virus of the Morbillivirus genus that affects
various animals including dogs and large cats.
D-CDV causes mild respiratory symptoms and has low mortality, especially in puppies.
69. What is a true characteristic of Canine Coronavirus (CCoV)?
A-It primarily affects the respiratory system and causes coughing and nasal discharge.
B-It is a highly contagious intestinal illness, mostly subclinical but can cause severe symptoms in
puppies.
C-It belongs to the Paramyxoviridae family and infects only dogs.
D-It has a short incubation period of 7-14 days and dogs are non-contagious after recovery.
70. Thrombosis of intestinal arteries is very common in horses due to larvae.
a- Sarcocystosis b- Haemonchosis c- Ostertagiosis d-
Strongylosis.
71. Intestinal volvulus is
a-Telescoping a portion of intestine to another
b-Twisting of intestine
c-Displacement of intestine through foramen
d- gangrenous of intestine.
72. Which of the following is TRUE regarding leptospirosis?
a. A-It is a viral disease that exclusively affects rodents and poses no risk to humans or pets.
b. B-Leptospirosis is easily diagnosed and treated due to reliable and widespread testing
methods.
c. C-Dogs can act as secondary hosts, shedding the Leptospira bacteria into the environment
for extended periods.
d. D-There is no concern about antimicrobial resistance in leptospirosis treatment.

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73. Epulis is ----- of the gum
a-Fibroma b- Adenocarcinoma c- Papiloma d-fibrosarcoma.
74. Occurred when the injuries in the wall of esophagus were invaded by saprophytic organisms , it is mostly seen in areas of esophageal obstruction.
a-Parasitic esophagitis b- Fibrinous esophagitis
c- Gangrenous esophagitis d- Gangrenous stomatitis.
75. Which of the following statements is TRUE regarding recent findings on Feline Calicivirus (FCV)?
A-Antibody testing alone is sufficient for protecting cats against FCV.
B-Survivin overexpression enhances FCV infection through increased fJAMI expression.
C-Differences in amino acid sequences of the FCV capsid protein are associated with virulent systemic disease variants.
D-FCV is no longer a major cause of feline respiratory disease due to recent vaccine developments.
76. Which of the following is TRUE regarding feline diabetes?
A-It only affects female cats and is usually diagnosed before age five.
B-Type II diabetes is common in overweight male cats aged 10–13 and presents with signs like increased thirst and urination.
C-Feline diabetes is caused by a viral infection and rarely affects indoor cats.
D-Most diabetic cats gain weight rapidly and become less hungry over time.
77.occurs due to release pancreatic enzymes in to the pancreatic parenchyma and adjacent tissues.
a- chronic pancreatitis b-acute pancreatitis c- Cholecystitis d- Cholangitis.
78. it is mostly seen in areas of esophageal obstruction.
a-Parasitic esophagitis b- Fibrinous esophagitis
c- Gangrenous esophagitis d- Gangrenous stomatitis.
79. Which of the following statements about DNA is TRUE?
A-DNA is a single-stranded molecule composed of amino acids.
B-DNA contains the bases adenine, uracil, guanine, and cytosine.
C-The strands of DNA run in the same direction and pair A with C and T with G.
D-DNA is a double-stranded molecule with complementary base pairing and anti-parallel strands.
80. Which of the following statements is TRUE about RNA?
A-RNA is double-stranded like DNA and contains the base thymine.
B-RNA uses adenine, cytosine, guanine, and uracil as its nitrogenous bases.
C-RNA is more stable than DNA due to its lack of reactive groups.
D-RNA is produced during translation using a DNA polymerase enzyme.
81. Which of the following definitions is correct regarding genetic terminology?

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- A-A *codon* refers to a single nucleotide that determines the entire gene expression pattern.
B-A *locus* is a random stretch of DNA unrelated to gene function.
C-A *wild type* is the naturally occurring gene sequence typically found at a particular locus.
D-A *gene* is composed of proteins that instruct DNA how to replicate.
82. Which of the following best explains redundancy in the genetic code?
A-Each amino acid is coded by only one codon to maintain precision.
B-The third base of a codon can vary without changing the amino acid it codes for, providing resilience against mutations.
C-All codons with the same first base code for the same amino acid.
D-Codons that contain cytosine (C) do not contribute to protein synthesis.
83. Is a general atrophy involving all cells of the body it is associated with gradate change in normal activity and aging.
a. A-Physiological atrophy b- pressure c- senile atrophy d- neurotrophic atrophy.
84. Is a pathological process observed when one of a pair of organs is lost, the other is increases in size.
a-Physiological atrophy b- adaptive hypertrophy c- physiological hypertrophy d-dysplasia.
85. It means loss of normal architecture orientation of cells.
a-Dysplasia b- metaplasia c- atresia d- hyperplasia.
86. It means transformation of one type of tissue to another type of the same germ layer.
a. Hyperplasia b- hypertrophy c- dysplasia d- metaplasia.
87. Means absence or closure of normal opening.
a. Agenesis b- atresia c- aplasia d- hypoplasia.
88. Ecchymotic hemorrhage is a term for surface hemorrhage ranges from
a-1-2 mm in diameter . b- ≥ 3 mm in diameter . c- $\geq 1-2$ cm in diameter. d- ≥ 15 cm in diameter.
89. When a blood vessel is obstructed with thrombotic material carried by the blood stream , it is
a-Infarction. b-Embolism . c-Thromboembolism . d-Fibrocartilaginous embolism.
90. White infarctions occur in some organs that have no
a-Collateral circulation. b-Radical circulation . c-Microcirculation . d-lymphatic drainage.
91. Continuous losing of blood from injury may result in Shock .
a-Cardiogenic . b-Maldistribution . c-Hypovolemic . d-Undifferentiated.
92. A refractory state of circulatory control with inability to control the clinical disease is
a-Non progressive shock . b-Progressive shock . c-Irreversible shock . d-Endotoxic shock.
93. Abnormal accumulation of excess fluid in interstitial tissue spaces or in body cavities is
a-Hemorrhage . b-Hydrothorax . c-Edema . d-Transudate.

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94. Increase blood flow to the stomach and intestines during digestion is
a-Local congestion . b-Physiologic Hyperemia . c-Generalized congestion . d-
Pathological Hyperemia.
95. The pathological form of hemostasis where a clot forms within a vessel which is not injured is
a-Thrombosis . b-Postmortem clotting . c-Hemostasis . d-Embolism.
96. The special enzymes are released during necrosis from
a- Lysosomes b- Vacuoles c- Cytoplasm d- Golgi bodies.
97. Liquefactive necrosis is seen in?
a. Heart b. Brain c. Lung d. Spleen.
98. Which of the following statements best describes atelectasis?
A. Overexpansion of alveoli due to airway obstruction
B. Collapse of alveoli due to airway obstruction or compression
C. Inflammation of the alveoli due to bacterial infection
D. Enlargement of alveoli due to chronic bronchitis.
99. Which of the following is true about acute inflammation?
A. It involves only vascular changes
B. It is a chronic response to injury
C. It includes both vascular and cellular responses.
D. It does not involve immune cells.
100. What does autophagy refer to?
A. The cell eating external material
B. The cell committing suicide
C. The cell being killed by something outside its control.
D. The cell eating its own internal contents.

Good Luck
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