



أعلاف و تغذية الحيوان

فاينل

اللجان الطلابية-كلية الزراعة
الجامعة الأردنية

تابع اللجان
على منصاتها



اللجان الطلابية تتمنى لكم دراسة موفقة

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Q1. Definition

1. Digestion:
2. Absorption:
3. Reversible
4. Omnivores:

Q2. Multiple Choice

1. Which of the following farm animals is an omnivore?
 - a) pig
 - b) chicken
 - c) Turkey
 - d) All

2. One of the following farm animals is not a monogastric?

- a) Horse
- b) sheep
- c) Rabbit
- d) None

3. Microbial digestion can occur in the:

- a) Rumen
- b) Colon
- c) Cecum
- d) All

4. The enzyme secreted in the saliva of certain farm animals is:

- a) Lipase
- b) Sucrase
- c) Amylase

d) Salivase

5. In the monogastric stomach, HCl is secreted (يفرز) from the:

a) Parietal cells

b) Chief cells

c) Gastric cells

d) Peptic cells

6. Which of the following is not a zymogen (inactive enzyme)?

a) Pepsinogen

b) Chymotrypsinogen

c) Proelastase

d) Trypsin

7. One of the following components (مكونات) is found in the gastric juice:

a) HCl

b) water / Pepsinogen

c) Intrinsic factor / Water d) All

8. Partially digested (مهضوم جزئياً) feed leaving the stomach is termed:

- a) Lime
- b) chyme
- c) chime
- d) Dime

9. Which of the following farm animals does not have a gall bladder?

- a) Horse
- b) Cow
- c) Chicken
- d) Goat

10. In the digestive system, bile is stored in the:

- a) Spleen
- b) Pancreas

- c) Liver
- d) Gall bladder

11. The function of bile secretion is to:

- a) activate lipase
- b) Digest lipids
- c) emulsify fat
- d) All

12. Which of the following enzymes is not secreted by intestinal villi?

- a) Trypsin
- b) Maltase
- c) Lactase
- d) Sucrase

13. In the chicken digestive system, feed is temporally (مؤقتاً) stored in the:

- a) Mouth
- b) Crop
- c) Gizzard
- d) Proventriculus

14. Which of the following types of digestion occurs in the rumen?

- a) Chemical
- b) Microbial
- c) Mechanical
- d) None

15. The small intestine is made up of:

- a) Ileum
- b) Duodenum
- c) Jejunum

d) All

16. Acinar cells in the exocrine portion

(الجزء غير الصماء) of the pancreas secrete:

a) Water

b) Electrolytes

c) Digestive enzymes

d) Insulin

17. Chymotrypsinogen is converted into chymotrypsin by the enzyme:

a) Enterokinase

b) Pancreozymin

c) Elastase

d) Trypsin

18. In the chicken digestive system, mechanical digestion occurs in the:

a) Gizzard

b) Ventriculus

c) Gastric mill d) All

19. After digestion, nutrients can be absorbed via:

a) Active Transport

b) Diffusion

c) Pinocytosis

d) All

20. The largest compartment (جزء) of the ruminant compound stomach is the:

a) Omasum

b) Rumen

c) Abomasum

d) Reticulum

21. Microbial fermentation in the rumen yields:

a) Ammonia

b) Volatile fatty acids

c) Vitamins d) All

22. ... of fermentation produced in rumen is:

- a) Methane
- b) Nitrogen
- c) Hydrogen
- d) Helium

23. ... compartment with a honeycomb structure is:

- c) Omasum
- d) Rumen

24. Rumen pH is normally maintained at:

- a) 5.5 – 6.5
- b) 7.0 – 7.5
- c) 2.4 – 3.5
- d) 8.6 – 9.9

25. Microorganisms that usually reside (تعيش) in the rumen include:

- a) Bacteria
- b) Protozoa
- c) Fungi
- d) All

26. In ruminants, all unsaturated fatty acids are hydrogenated in the:

- a) Omasum
- b) Reticulum
- c) Rumen
- d) Abomasum

27. In animal metabolism, the major biological fuel (الوقود الحيوي) is:

- a) Glucose
- b) Fructose

c) Lactose d) None

28. The principle source (المصدر الرئيس) of energy for ruminants in the liver is:

- a) Propionate
- b) Acetate
- c) Butyrate
- d) Glycogen

29. In nitrogen metabolism in ruminants, ammonia can be:

- a) Recycled in saliva
- b) Excreted as urea
- c) Used for protein
- d) All

30. In the cell, citric acid cycle occurs in the:

- a) Cytoplasm
- b) Cell membrane
- c) Mitochondria

d) Nucleus

31. The end product of glycolysis is:

a) pyruvate

b) Acetyl CoA

c) lactate

d) oxalacetate

32. During heavy metabolic activity, glucose is converted to lactate in the:

a) Muscles

b) liver

c) Brain

d) kidneys

33. In chickens, the common chamber for the digestive, respiratory, and urinary tracts is termed:

a) cloaca

b) Cola

c) Koala d) not listed

34. The process of generating glucose from non-carbohydrate sources is termed:

- a) Glycogenolysis
- b) Glycogenesis
- c) Gluconeogenesis
- d) Glycolysis

35. The complete oxidation (الأكسدة الكاملة) of one molecule of glucose produces:

- a) CO_2
- b) H_2O
- c) ATP
- d) All

36. Step one of the Krebs cycle is the reaction of acetyl-CoA with oxaloacetate to generate?

- a) Malate

b) Fumarate

c) citrate

d) Succinate

37. which of the following Krebs cycle metabolic intermediates contains 5 carbons?

a) Succinyl-CoA

b) isocitrate

c) α -ketoglutarate

d) pyruvate

38. The number of ATP moles yielded by 1 mole of NADH in the electron transport chain is?

a) 3.0

b) 2.5

c) 3.5

d) 2.0

39. All metabolic pathways in the body eventually converge on (تلتقي في):

- a) Krebs cycle
- b) TCA cycle
- c) citric acid cycle
- d) All

40. The breakdown or degradation of fatty acids is termed:

- a) Alpha-oxidation
- b) Beta-oxidation
- c) Gamma-oxidation
- d) Delta-oxidation

41. In poultry, the end product of nitrogen metabolism is:

- a) uric acid
- b) urea

c) Ammonia d) All

42. In farm animals, mechanisms that control of voluntary feed intake operate at:

a) Metabolic level

b) Digestive level

c) External level

d) All

43. A potent stimulant (محفز قوي) of feed intake in the hypothalamus of farm animals is:

a) Neuropeptide z

b) Neuropeptide y

c) Neuropeptide x

d) Neuropeptide w

44. In the rumen, all polyunsaturated fatty acids are hydrogenated to yield?

a) stearic acid

- b) palmitic acid
- c) oleic acid
- d) Linoletic acid

45. In the chicken digestive system, pepsin is secreted from the:

- a) cloaca
- b) crop
- c) Gizzard
- d) proventriculus

46. which essential amino acid is a metabolic intermediate in the urea cycle?

- a) Lysine
- b) Methionine
- c) Arginine
- d) valine

47. The major amino acid available for transamination reactions is:

- a) Glutamate
- b) Alanine
- c) Aspartate
- d) proline

48. The protein that transports fatty acyl-CoA into mitochondria prior to fatty acid catabolism is:

- a) Carnitine
- b) Carotene
- c) Keratin
- d) Karoline

49. Which vitamin deficiency, impairs (يعطل) propionate metabolism in liver of ruminants?

- a) B₅
- b) B₆
- c) B₁₂
- d) B₂₄

50. The pentose pathway is used to produce NADPH in:

- a) Adipose tissue
- b) Mammary glands
- c) Liver
- d) All

51. The major organ for amino acid metabolism is:

- a) Kidneys
- b) liver
- c) Heart

Q3. Match the Mineral with its deficiency disease in farm animals by writing the correct number in brackets in the second column:

- | | |
|-----------------|--------------------------------|
| * 1. Magnesium | A. Perosis |
| * 2. Calcium | B. Anemia |
| * 3. Molybdenum | C. White Muscle Disease |
| * 4. Cobalt | D. Steely Wool |
| * 5. Iron | E. Frizzled Feathers |
| * 6. Copper | F. Grass Tetany |
| * 7. Selenium | G. Goiter |
| * 8. Sodium | H. Reduced Insulin Sensitivity |
| * 9. Chromium | I. B ₁₂ Deficiency |
| * 10. Iodine | J. Milk Fever |
| * 11. Zinc | |
| * 12. Manganese | |

* 13. Fluorine

Q4. Describe the four levels of protein structure (8P).

Q5. جاب عن هداول الجداول

Enzyme	Substrate	End Product	Location of action
Digestion in Monogastric Animals			
• Digestion in the small intestine: يمكن يحمي بالمعيار			
Substrate	Enzymes	End product	
Feed proteins, peptides Peptides and dipeptides	1. Pancreatic juice: Trypsin, Chymotrypsin, Carboxy peptidase, elastase 2. Intestinal mucosa: Amino peptidases, dipeptidase, tripeptidase	amino acids	صلى بالانعام
Feed starches, Glycogen Dextrin Maltose, Dextrin, Lactose Sucrose	1. Pancreatic juice: α-amylases 2. Intestinal mucosa: α-Glucosidase (maltase) Oligo-1,6 glucosidase (Isomaltase) β-Galactosidase (lactase) β-Fructofuranosidase (sucrase)	simple sugars (glucose)	

Carboxy	poly Peptides	AA	pancreas
Digestion in Monogastric Animals			
• Digestion in the small intestine:			
Substrate	Enzymes	End product	
Feed fiber	-	No digestion	
Feed lipids Triacylglycerols, Cholesterol esters Lecithens and cephalins DNA, RNA Nucleosides	1. Pancreatic juice: lipases 2. Intestinal mucosa and pancreatic juice: Cholesterol esterase Phospholipase A₂ DNase, RNase 3. Intestinal mucosa: Nucleosidase	fatty acids, glycerol	
Non protein nitrogen (NPN)	-	No digestion	

Q5. Describe the two oxidative decarboxylation steps in the Krebs cycle citing the enzymes that catalyze each reaction and molecules generated (you can use a diagram to illustrate each step).

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glucose as source of energy
شو بصير فيه.

Q6. Why is niacin used in dairy cow rations, especially during the transition period?

Q7. What are the general functions of minerals?

Q8. Calculate the total number of moles of ATP released from complete catabolism of the fatty acid Myristic acid (C14:0). Show all your calculations to get full credit (5P).

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