Question 1

Read the passage below and answer the question.

（著作権の関係上，公開できません）

[Source: Medical Physiology, third edition, ELSEVIER, 2017.]

Question.

Choose the most appropriate word or phrase from the four choices for each blank. Write the corresponding letter (a – d) on your answer sheet.

(1)	a. fragility	b. volume	c. metabolism	d. potential
(2)	a. protein	b. fluid	c. fat	d. carbohydrate
(3)	a. hypofunction	b. hyperpolarization	c. hyperosmolality	d. alkalosis
(4)	a. swelling	b. shrinkage	c. differentiation	d. growth
(5)	a. ileus	b. slenderness	c. intracerebral hemorrhage	d. obesity
(6)	a. H_2O	b. glucose	c. K^+	d. Ca^{2+}
(7)	a. edema	b. calcification	c. abscess	d. diabetes
(8)	a. ischemia	b. contusion	c. swelling	d. activation
(9)	a. brainstem	b. intestine	c. spinal cord	d. liver
(10)	a. speedily	b. roughly	c. slowly	d. dramatically

Question 2

Read the passage below and see Figure 1. Choose the most appropriate word or phrase from the four choices and write the corresponding letter (a – d) on your answer sheet.

（著作権の関係上，公開できません）

[Source: HM Elsheikha and NA Khan (editors). 2011. Essentials of Veterinary Parasitology (with partial modification) pp.82-83.]

Question 2-1.
Choose the most appropriate word from the four choices for each blank and write the corresponding letter (a – d) on your answer sheet.

(1) a.one-host	b. two-host	c. three-host	d. four-host
(2) a. fish	b. snail	c. crab	d. aquatic insect
(3) a. bile duct	b. liver	c. intestinal tract	d. brain
(4) a. miracidia (miracidium)	b. cercariae	c. metacercarial cyst	d. adult
(5) a. miracidia (miracidium)	b. cercariae	c. metacercarial cyst	d. adult
(6) a. miracidia (miracidium)	b. cercariae	c. metacercarial cyst	d. adult
(7) a. bile duct	b. liver	c. intestinal tract	d. brain
(8) a. bile duct	b. liver	c. intestinal tract	d. brain

Question 2-2.
Select three of appropriate answers to control fasciolosis caused by *Fasciola* spp.

A. Use molluscicides to reduce the number of intermediate host snails.
B. Keep livestock in the barn to prevent eating grass with infectious metacercarial cyst.
C. Use completely dried-out straw for bedding material.
D. Use insect repellent to avoid blood sucking insects.
E. Use praziquantel for killing parasites.

（著作権の関係上，公開できません）

[Source: HSM Carter.2022 J. Dairy Sci. 105:9982–9994]

Question 3-1. Read each passage and choose the best word from the choices for each blank.

(1)	a. sweat	b. paralysis	c. cough	d. dehydration
(2)	a. calf	b. meat	c. milk	d. labor
(3)	a. gastrointestinal	b. muscle	c. vascular	d. kidney
(4)	a. immunocompromised	b. nephropathy disorder	c. hepatic impairment	d. cardiopulmonary
(5)	a. Eimeria subspherical	b. Escherichia coli	c. Cryptosporidium parvum	d. Rotavirus

Question 3-2.　Which is an ineffective method to prevent diarrhea in calves?

1. Ensure that all newborn calves receive colostrum.
2. Consider a vaccination program for your cow herd.
3. Maintain a clean calving area.
4. When using milk replacer, feed calves all the milk they want.
5. Maintain adequate protein, energy, and micronutrients for the dam (mother cow) during gestation.

Question 3-3. Which is not a useful method for pathophysiological diagnosis in calves with diarrhea?

1. Observation of clinical signs.
2. Isolation of specific pathogens in fresh feces or on postmortem examination.
3. Blood biochemical, blood gas, and hematologic analysis.
4. Postmortem examination of intestinal mucosa.
5. X-ray examination of thorax.

Question 4
Read and answer the questions in the following sentences describing the mechanism of action of organophosphate (OP) insecticides and carbamate (CM) insecticides.

（著作権の関係上，公開できません）

[Source: RC Gupta (editor).2012. Veterinary Toxicology, 2nd edition (partial modification) pp. 577- 580.]

Q. 4-1　Choose the word that fits the blank.

(1)	a: Acetylcholinesterase (AChE)	b: Alkaline phosphatase (ALP)	c: Alanine aminotransferase (ALT)	d: Phospholipase A1
(2)	a: Acetylcholine (ACh)	b: Phosphate	c: Glutamic acid	d: Phosphatidylcholine
(3)	a: reversible	b: irreversible		
(4)	a: reversible	b: irreversible		

Q. 4-2　On your answer sheet, write T if the statement is true or F if the statement is false according to the article.

(1) [1] is a serine hydrolase and catalyzes the degradation of [2] by acyl-transfer.
(2) The half-life of [2] is longer when [1] is inhibited by OP than when it is inhibited by CM.
(3) The half-life of [2] is ~150 μsec when [1] is inhibited by CM.
(4) Phosphorylated [1] is highly stable and further methylation of the phosphorylated groups produces 'aging' enzyme.

Q. 4-3 On your answer sheet, write T if the following statement describing the treatment for OP and CM poisoning is correct or F if the statement is false

(1) Administration of 2-PAM and atropine is effective for CM poisoning.
(2) Administration of 2-PAM and atropine is effective for OP poisoning.