احصاء حيوي

Kafrelsheikh University Date: 8 - 6 - 2022 Time allowed: 2h
Faculty of Aquatic and Fisheries Sciences Third Level
Subject: Applied Statistics Full Mark (50) Final Exam: 2 pages

---

Answer the following questions:

(1)(a) Suppose we have a population consists of the following values: 3, 5, 7. Construct all random samples of size two selected with replacement then find the mean of the sampling distribution of variances.

(b)The effect of three kinds of food was compared on increasing the weight of rats. The increase in weight of the three groups was determined and found to be as follow:

A	6	3	8	7
B	5	3	6	2
C	9	12	11	12

Do the three kinds of food differ significantly from each other given that the significance level is 0.05

F table for $\alpha = 0.05$

d.f.w / d.f.b	1	2	3	4	5	6	7	8	9
2	199.5	19	9.55	6.94	5.79	5.14	4.74	4.46	4.26
3	215.7	19.16	9.28	6.59	5.41	4.76	4.35	4.07	3.86

(c) To investigate the effect of vaccination of laboratory animals against a particular disease. A random sample of 96 animal was constructed. Fifty one of animals were vaccinated and nine of them were got the disease. If the total number of animals got the disease were 26. Test the hypothesis that there is no difference between the vaccinated and unvaccinated groups using 0.1 significance level

d.f.	1	2	3	4	5	6	7	8
$\alpha = 0.1$	2.71	4.61	6.25	7.78	9.24	10.65	12.02	13.36

(2)(a) The MW Soda company sets up "taste tests" in 27 locations around the country in order to determine the public's relative preference for two brands of cola, A and B. In eight locations brand A is preferred over brand B, in 17 locations brand B is preferred over brand A, and in the remaining locations there is indifference. Can we conclude at $\alpha = 0.05$ that preference for two brands are different using p-value. 1/2

(b) A company wishes to determine whether there is a difference between two brands of gasoline, A and B. Table shows the distances traveled per gallon for each brand. Can we conclude at the 0.01 significance level that there is a difference between the brands using p-value.

A	18	15	16	22	14
B	7	11	9	10	13

Z	- 0.05	- 0.04	- 0.03	- 0.02	- 0.01	0.00
-2.6	0.0040	0.0041	0.0043	0.0044	0.0045	0.0047
- 1.6	0.0495	0.0505	0.0516	0.0526	0.0537	0.0548

(c)The following table represent the weights of fertilizer bags sampled from a filling process over a three-hour period.

Sample	Time	Bag 1	Bag 2	Bag 3	Bag 4
1	1 P.M.	48	47.7	49	49.7
2	2 P.M.	50.2	48.1	49.1	49.4
3	3 P.M.	51.1	50.4	48.6	48.7
4	4 P.M.	49.1	48.5	50.8	50.8

(i)Calculate the lower and upper control limits for a 3-sigma mean chart

(ii)Calculate the lower and upper control limits for a 3-sigma range chart.

(iii)Determine whether the filling process is in control based on a sample taken at 5 P.M. that consists of the following weights:49.9, 49.4, 47.4, and 50.7

Factors for 3-Sigma Control Chart Limits

n	A_2	D_3	D_4
3	1.023	0	2.574
4	0.729	0	2.282

(d)Complete the following:

1- Any population constant is called .....

2- Sampling error can be reduced by .....

3- Level of significance (α) value lies between .....

4- The purpose of hypothesis testing is .....

5-When size of samples is increasing then variance of sample means is .....

6- A value that is calculated from sample data and used in hypothesis of the test is called .....

7- Statistical methods that generally require very few assumptions about population distribution are known as .....

Best Wishes, M.M.Khalifa

Kafrelsheikh University
Faculty of Aquatic and Fisheries Sciences
Course: **Behavioural Ecology** (0110122)
Academic level: 3rd year, 2nd semester
Program: Aquaculture

Date: 15/6/2022
Time: 2 hours
Total marks: 50 mark
Academic number:
Student name:

Q. I. (30 mark)

A. Complete the following sentences: (10 marks, 2 for each point)

1- ..... is an increase in behavioural response due to fearful stimuli.

2- Feed deprivation should be done before transportation of adult fish by .....hours.

3- .....is the habits and costumes of fish.

4-..... is responsible for the degree and strength of response.

5- ..... is male swimming merry around female and exhibits his brilliant colours.

B. Compare between each of the following: (10 marks, 5 for each point)

1- External and internal stimulus.

2- Sexual maturity in Nile tilapia reared in lakes and ponds.

C. Write short notes on each of the following: (10 marks, 5 for each point)

1- Operant conditioning.

2- Importance of Shelter-seeking behaviour.

Q. II. (20 mark)

A. Answer the following with (√) or (x) and correct the wrong one: (10 marks, 2 for each point)

1. Demersal fish seldom leave sea bed to the center or surface water ( ).
2- Territorial aggression resulted in intersexual selection between females ( ).
3. Behavioural ecology aimed to enhance the survival of fries ( ).
4. Sharks and tuna can control their body temperature ( ).
5. Isolation has no role in expression of inherited behaviour of fish ( ).

B. Please, read the following and answer the questions: (10 marks)

You are admitted to visit an aquarium; the fish showed that some fishes swim in an oblique position with head directed to tank bottom. Some other fishes showed swelling in abdominal region.

1- What is the expected problem? **(4 marks)**

2- Mention the causes of such problem. **(4 marks)**

3- Provide the lines of remedy for such problem. **(2 marks)**

ALL THE BEST

Radi A. Mohamed

KAFRELSHEIKH UNIVERSITY
FACULTY OF AQUATIC AND FISHERIES SCIENCES

جامعة كفر الشيخ
كلية علوم الثروة السمكية والمصايد

Course Name: **Integrated Aquaculture**
Level: **Third Year**

Allowed Time: **2 hours**
Date: ***19 June, 2022***

Final Exam of the Academic Year: 2021-2022

Answer the following questions: (50 Marks)

1- The First Question: (20 Marks)

A. choose the correct answer: (4 Marks)

1. Under Poultry-Fish integrated system, stocking density of chicks is about (500 OR 7500 OR 2500chicks/ha)
2. *In* rice-fish culture, Fish can be stocked at rates of (Less than 0.25 OR 0.25 - 1 OR 3-5 fish/m^2).
3. In aquaponics, the most recommended level of pH for fishes is (5.5-6.5 OR 6.5-7.5 OR 8-9).
4. Hydroponics uses only (1/5 OR 1/10 OR 1/20) of water compared to traditional (soil based) planting.

B. Put (√) in front of the right sentences and (×) in front of the wrong sentence. (8 Marks)

1. Industrial aquaculture of fishes often does NOT cause negative environmental impacts. ( )
2. Under typical aquaponics design, 3.8 L of water can produce between 1.23 kg and 1.45 kg of fish depending on aeration and filtration. ( )
3. Plants cultivated in Hydroponic are susceptible to a disease called "pythium" or " root rot". ( )
4. In aquaponics, NFT Pipes should be sloped approximately 1/30-1/40 for easy drainage. ( )
5. Under aquaponics, to adjust pH water, it is necessary to add a base (e.g. Ca(OH)2 and KOH). ( )
6. *In* rice-fish culture, *trenches* should be about 2.0m deep and at least 0.5 m wide. ( )
7. Duck raising in fish ponds reduces the demand for protein to 2 – 3 % in duck feeds. ( )
8. Each duck voids (excrete) between 325 - 350 gm of dropping per day. ( )

C. Complete the following: (4 Marks)

1. To maximize rice production, the trench area should not be more than .....% of the paddy area.
2. Under fish and frog Integrated system, frog will eat ..... and .....
3. In aquaponics, NFT Pipes for lettuce are usually spaced ..... inches apart with .....-inches between holes in the channel.
4. The most common aquatic organisms suited for rice-fish systems are (list 6 species) ....., ..., ..., ..., and.....

D. Give examples of the aquatic organisms representing the following integrated systems: (4 Marks)
Temporal Integration - Spatial integration - Disease preventing - Overcrowding Preventing system

2. The Second Question: (14 Marks)

A. Definition of the following expressions:
Integrated Aquaculture – Aquaponics **(4 Marks)**

B. What does eutrophication cause? **(4 Marks)**

KAFRELSHEIKH UNIVERSITY
FACULTY OF AQUATIC AND FISHERIES SCIENCES

جامعة كفر الشيخ
كلية علوم الثروة السمكية والمصايد

Course Name: **Integrated Aquaculture**
Level: **Third Year**

Allowed Time: **2 hours**
Date: ***19 June, 2022***

Final Exam of the Academic Year: 2021-2022

Answer the following questions: (50 Marks)

1- The First Question: (20 Marks)

A. choose the correct answer: (4 Marks)

1. Under Poultry-Fish integrated system, stocking density of chicks is about (500 OR 7500 OR 2500chicks/ha)
2. *In* rice-fish culture, Fish can be stocked at rates of (Less than 0.25 OR 0.25 - 1 OR 3-5 fish/m^2).
3. In aquaponics, the most recommended level of pH for fishes is (5.5-6.5 OR 6.5-7.5 OR 8-9).
4. Hydroponics uses only (1/5 OR 1/10 OR 1/20) of water compared to traditional (soil based) planting.

B. Put (√) in front of the right sentences and (×) in front of the wrong sentence. (8 Marks)

1. Industrial aquaculture of fishes often does NOT cause negative environmental impacts. ( )
2. Under typical aquaponics design, 3.8 L of water can produce between 1.23 kg and 1.45 kg of fish depending on aeration and filtration. ( )
3. Plants cultivated in Hydroponic are susceptible to a disease called "pythium" or " root rot". ( )
4. In aquaponics, NFT Pipes should be sloped approximately 1/30-1/40 for easy drainage. ( )
5. Under aquaponics, to adjust pH water, it is necessary to add a base (e.g. Ca(OH)2 and KOH). ( )
6. *In* rice-fish culture, *trenches* should be about 2.0m deep and at least 0.5 m wide. ( )
7. Duck raising in fish ponds reduces the demand for protein to 2 – 3 % in duck feeds. ( )
8. Each duck voids (excrete) between 325 - 350 gm of dropping per day. ( )

C. Complete the following: (4 Marks)

1. To maximize rice production, the trench area should not be more than .....% of the paddy area.
2. Under fish and frog Integrated system, frog will eat ..... and .....
3. In aquaponics, NFT Pipes for lettuce are usually spaced ..... inches apart with .....-inches between holes in the channel.
4. The most common aquatic organisms suited for rice-fish systems are (list 6 species) ....., ..., ..., ..., and.....

D. Give examples of the aquatic organisms representing the following integrated systems: (4 Marks)
Temporal Integration - Spatial integration - Disease preventing - Overcrowding Preventing system

2. The Second Question: (14 Marks)

A. Definition of the following expressions:
Integrated Aquaculture – Aquaponics **(4 Marks)**

B. What does eutrophication cause? **(4 Marks)**

C. Benefits of the deepened areas "trenches" used in rice-fish integrated system. **(2 Marks)**
D. Sketch or draw "El Kram Integration System" **(4 Marks)**

3. The Third Question: (16 Marks)

Aquaponics is a sustainable integrated aquaculture system that is expanding globally due to its eco-friendly nature. Considering that aquaponics is an ideal system, please explain the following.

A. Advantages of Aquaponics. **(4 Marks)**
B. Sketch or draw "the Aquaponics system design." **(5 Marks)**
C. Give examples (at least six species) of both Fish and Plants succeeded in Aquaponics. **(3 Marks)**
D. Explain with examples the three methods for producing vegetable crops in aquaponics. **(4 Marks)**

Best wishes,
Dr. Mohamed Abdel-Rahim
Dr. Asmaa El-Nokrashy

Kafr El-Sheikh University
Faculty of Aquatic and Fisheries Sciences
Department of Aquaculture
Subject: Nutrition of Aquatic Animals
Time Allowed: 2 hours

KSU
Kafrelsheikh University
جامعة كفر الشيخ

Full marks: 50
Date: 12/6/2022
Level: Three
Pages: one
Code: 0110111

Final exam during academic year 2021/2022

Please answer the following questions:

First question -: Put a True or False by the statements with error correction (17 Marks)

1- Energy requirements are lower for fish than most terrestrial's. ( ).
2- Carnivores' fish, because of their feeding habit, require a lower protein level in their diet. ( ).
3- Phytoplankton is small size and long life cycle. ( ).
4- Micronutrients can be used directly as metabolic fuels. ( ).
5- Fat deposits of most animals in the form of triglycerides. ( ).
6- Marine fish appear to have a greater requirement for HUFA's than freshwater species. ( ).
7- The concentration of n-6 PUFA in the tissues of fish is generally low. ( ).
8- Water-soluble vitamins toxicities are unlikely. ( ).
9- Nicotinic acid plays an important role in the synthesis of fatty acids and cholesterol. ( ).
10- Sodium is the main monovalent ion of intracellular fluids. ( ).
11- Mineral deficiencies may drop under intensive culture conditions. ( ).
12- The metabolic rate of small fish and shrimp is lowering than that of large animals. ( ).
13- Particle sizes of dry ingredients during manufacture should be more 500·µm. ( ).
14- In expander chamber the temperature can exceed 120°C. ( ).
15- Open feed formulas exist for a limited number of species ( ).
16- The feed must be with fines or dust. ( ).
17- Manual feeding is suitable for large-scale commercial fish farms. ( ).

Second question: Complete the following sentences: (18 marks):

1- For aquaculture to contribute more to the world's food supply - .Production must be ……
2- Natural food found naturally in the ……
3- At least ……/1000 l water, there is enough zooplankton available to feed your fish.
4- Over …… different amino acids have been isolated from biological materials.
5- Globular proteins Include all ……, …… and …… proteins.
6- When two to ten monosaccharide units are linked together they form an ……
7- The intestinal cellulase activity of fish from resident bacteria is ……
8- Zinc plays a vital role in ……, ……, and …… metabolism.
9- Excess energy is dissipated as ……
10- Energy requirements of fish and shrimp …… with increasing water flow.
11- Most carotenoids are colorful ……, ……, and …… pigments
12- Use of hormones is …… because of consumer sensitivity and government restrictions.
13- Wet feeds generally contain ……% moisture
14- A …… mixer is most commonly used in the production of fish feeds.
15- The dry feeds can be broadly divided into ……, …… and …… pellet types.
16- Unidentified growth factors are often observed in …… by-products.
17- A pellets size of about …… the gape of the mouth is advised.
18- Always feed fish at the same …… and …… .

Third question: Choose only three (9 marks).

A. The feeding habits of fish are reflected in their digestive anatomy (Explain)?
B. The availability and utilization of dietary trace elements in fish or shrimp is dependent upon (Explain)?
C. Feeding fish correctly means?
D. What are golden rules in feeding Fish?

Fourth question: Explained by only drawing with writing data (6 marks).

1- Generalized view of nitrogen balance in fish?
2- Feed formulation methods

With our best wishes
Prof. Dr. Malik M. Khalafalla

Kafr El-Sheikh University
Faculty of Fisheries and Aquaculture Science
Third Level Students

Date: 22/6/2022
Time of exam: 2 hours
Score: 50
Analytical Chemistry

Answer the following questions

Question No. I **(Score 10)**

i) Determine the molarity (*M*) and normality (*N*) of 60% of sulfuric acid (H_2SO_4), the density is 1.52 g/cm^3? – If 200 ml of these solutions are diluted to give 0.7*M* and 0.5 N solutions; what is the volume of the resulting diluted solution? S = 32, O = 16, H = 1

ii) What are the classes of the salts derived from acids and alkalis? Give examples

Question No. II **(Score 10)**

i) Define the neutralization curves and draw the titration curves of the following titrations: a) Strong acid and strong alkali; b) Strong acid and weak alkali; c) Weak acid and strong alkali; d) Weak acid and weak alkali. Give example for each neutralization reaction and write the balance equations and define the suitable indicator for each case.

ii) Write the balanced chemical equations describe the direct EDTA titration for determination of metal ion (M^{n+})

Question No. III **(Score 10)**

i) How does the acidic buffer solution work?

ii) Write the balanced chemical equations describe Mohr's method for determination of chloride ion. Why Mohr's method should carried out in a neutral solution only? How to overcome these difficulties?

iii) For an aqueous solution of a salt derived from weak acid and weak base, what is the pH of this solution?

iv) What is the pH of the aqueous solution of NaCl? Give reasons fro your answer.

Question IV:Choose the most correct answer number from the following: (Score 10)

1- The solution which contains one mole of solute in one liter of solution is: a) Normal solution b) Molar solution c) Standard solution d) none of the above

2 - A process in which the excess of a standard solution used to consume an analyte is determined by titration with a second standard solution is known as: a) Back titration b) Direct titration c) Replacement titration d) none of the above

3 - The number indicates the amount of solute per unit volume or weight of solution for the true solution is: a) Mole fraction b) Mole c) Concentration d) All of the above

4 - The solution contains accurately known concentration and usually present in burette is: a) Normal solution b) Molar solution c) Standard solution d) none of the above

5 - A process in which the titrant is added to analyte until the end point is observed is known as: a) Back titration b) direct titration
c) Replacement titration d) none of the above

6 - The molecular weight of the substance, element or compound, expressed in grams is:
a) Mole fraction b) Mole c) Concentration d) All of the above

7 - The thing to be analyzed; the component(s) of a sample that are to be determined is
a) Titrant b) Indicator c) Analyte d) True solution

8 - The solution contains accurately known concentration and usually present in burette is:
a) Secondary standard b) Titrant c) Analyte d) a or c

9 - The acid is capable of donating more than 1 proton is known as:
a) Diprotic b) polyprotic c) strong acid d) weak acid

10 - The point in a titration when the amount of added standard reagent is exactly equivalent to the amount of analyte is: a) End point b) Equivalent point
c) Neutralization point d) a or c

Question V: Complete the following : **(Score 10)**

1- The number indicates the amount of solute per unit volume or weight of solution for the true solution is .....

2- The number of grams of solute per 100 grams of solution is .....

3- The chemical substance which often added to the analyte solution to produce an observable physical change at or near the equivalence point is.....

4- The solution contains one gram equivalent of solute contained one liter of solution is ....

5- 1meleliter (ml) = cm^3; and one liter = cm^3 = ml).

6- The number of grams of solute per 100 grams of solution is.....

7- The ability of the buffer solution to resists the changes in the pH of the medium due to addition small quantities of acid or alkali is .....

8 - An aqueous solution of 1:2 HCl means that, this solution contains one volume of concentrated HCl and.....

9- A substance which, when dissolved in water, undergoes dissociation with the formation of hydroxide ions is .....

10 - The point in a titration at which an observable physical change signals the equivalence point is .....

Good luck
Prof. Dr. A. M. Ramadan

KAFRELSHEIKH UNIVERSITY
FACULTY OF AQUATIC AND
FISHERIES SCIENCES

جامعة كفر الشيخ
كلية علوم الثروة السمكية
والمصايد

Course Name: **Marine Aquaculture**
Level: **Third Year**

Allowed Time: **2 hours**
Date: ***26 June 2022***

Final Exam of the Academic Year: 2021-2022

Answer the following questions: (50 Marks)

1- The First Question: (16 Marks)

A. Put (√) in front of the right sentences and (×) in front of the wrong sentence.

1. For cages, Stoppers are very important, because it helps in case of strong waves. (…….)
2. Color retardation in Red tilapia is NOT a dis-Advantages of this species. (…….)
3. If the average diameter of eggs for marine fishes ranges 525-550 microns, you can stimulate spawning with hormones? (…….)
4. Spawning Hormones incorporated on cholesterol or Cellulose is the most efficient method for seabream hatchery. (…….)
5. MS222 is NOT toxic to eggs and milt. (…….)

B. Choose the correct answer:

1. In the design of marine cages, the acreage of marine cages should be (50% OR 25% OR less than 10%) of total farming area.
2. Average Fecundity of Grey mullet (*Mugil cephalus*) (250,000 OR 500,000 OR 1,000,000)
3. Gilthead seabream broodstocks with weights (less than 600 grams OR 600-800 OR more than 1,000 grams), can be considered as females (mostly).
4. Biomass of marine fish broodstocks during the transportation should be (0.5 -1 kg, OR 1-1.5 kg OR 3-4 kg / 1 m^3 of water).
5. During maturation and spawning months (inside the spawning season), broodstocks must feed on dry feed at (0.5%, OR 1.0% OR 5%)

C. Complete the following:

1. The scientific name of Gilthead Sea Bream is (……) and the common English name of (*Argyrosomus regius*) is (……).
2. Water temperature in the transportation tanks should be maintained between …… °c, but not more than …….. °c.
3. The best concentration of the Anesthetic products, such as Clove oil is …… ml / liter of water, while MS-222 is …… mg / liter of water.

4. Asynchronous broodstocks characterizes with Continual development and spawning of oocytes, such as ……., while the example of Synchronous spawning is (……..).
5. The best velocity of water Current for marine fish cages is …… cm/s.

2- The Second Question: (18 Marks)

Write short notes on the following points:

A. The advantages and disadvantages for one species of the following fishes (**Choose only one species**):
(1) Red tilapia; (2) Spinefoot Rabbitfish (*Siganus rivulatus*)

B. Departments of marine fish hatchery?

C. Describe briefly the Stages of Anaesthesia.

D. Write brief (Short) notes on **stages 2** and **5** of the ovarian development of marine fishes.

E. Advantages of hormonal induced spawning.

3. The Third Question: (16 Marks)

Intensive mariculture in cages is one of the most profitable and environmentally friendly aquaculture methods, explain the following points based on previous statement:

1. The definition of **inshore** and **offshore** Aquaculture.
2. The advantages of intensive mariculture in cages.
3. The main components of marine floating cages.
4. The advantages of using high density polyethylene (**HDPE**) in pipes and brackets.

Best wishes
Dr. Mohamed Abdel-Rahim

Kafrelsheikh University
Faculty of Aquatic and Fisheries Science
Department of Fish processingand biotechnology
Subject: Food-Borne Diseases/Toxicology.
Time Allowed: 2 hr.
Code: .....

Full marks: 50
Date 5/6/2022
Pages (2)

Answer the following questions:

1- Defined the following: *(10 degrees, 5 of each)*

a) **Incubation period and their length:**

b) **Human diseases due to Aeromonas hydrophila infection**

2- In Table Compare between: *(15 degrees, 5 of each)*

a) **Somatic and Genetic damage radiation.**

b) **Types of Marine Biotoxins**

c) **Escherichia Coli and Bacillus cereus food poisoning.**

3- Complete the following: *(10 degree 0.5* **For each)**

A. **Ideal detergent and chemical sanitizer characterized by: 1- .....2- ..... 3-.....4- .....5- .....**

B. **Growth and toxin production by C. botulinum in foods is influenced by several factors : 1- .....2-.....3-.....4-.....5- .....**

C. **Major categories Chlorinated pesticides: 1- .....2- .....3- .....**

D. **Antinutritive factors are: 1- .....2- .....3- .....**

E. **Salmonellae reach food in many different ways: 1-.....2-.....**

F. **Rota viruses recognized as an important cause of food borne illness and classified into: 1- .....2-.....**

4- Choose the correct answer: *(15 degrees, 1 of each)*

1- **The preservation of fish is a difficult challenge because of three main factors:**
   a) Psychrophilic bacteria may be present.
   b) Many fish oils are saturated and are easily oxidized.
   c) Typical fish lipds are not as stable as red meat proteins.

2- **Minimization, prevention and Degradation of aflatoxin occure by :**
   d) This can be achieved by bad manufactory practices (GMP)
   e) Heating of food product for 1 hr. at 45-65 oC affects 68% reduction.
   f) Anti ammoniation is used for the detoxification of aflatoxin B1 in feedstuffs.
   a) courage consumption of left-overs

3- **One of the following is type of potential Food Poisoning**
   a) Various Gram-posative bacilli Proteus
   b) Various Gram-negative bacilli including Proteus and Citrobacter
   c) living bacteria bacteria grow and multiply in the food produce a toxin

4- **One from the following act as a sources for the PCB contamination of fish.**
   a) Industrial and municipal discharges, agricultural practices, and storm water runoff can all deposit harmful substances directly into the water.
   b) Fish can also absorb inorganic chemicals from the water, suspended sediments, and their food.
   c) indirect ingestion of sewage sludge adhering to plants, ingestion of contaminated soil when grazing

5- **Ciguatera poisoning**
   a) This poisoning occurs from the ingestion of fish that feed natural food
   b) This poisoning occurs from the ingestion of fish that feed on herbivorous
   c) This poisoning occurs from the ingestion of fish that feed on artificial food

Kafrelsheikh University
Faculty of Aquatic and Fisheries Science
Department of Fish processingand biotechnology
Subject: Food-Borne Diseases/Toxicology.
Time Allowed: 2 hr.
Code: .....

Full marks: 50
Date 5/6/2022
Pages (2)

6- Shigella-like disease.

a) Is Infection caused by Shigella organisms
b) **Is** Infection caused by Enteroinvasive E. coli (EIEC)
c) Is Infection caused by Shigella food poisoning

7- To avoid poisoning by , Scombrotoxic Fish poisoning

a) fish must be adequately chilled, immediately after catching
d) fish must be adequately cooked, immediately after catching
e) fish must be adequately kept above 5°C until cooked immediately after catching.

8- In Food infection The bacteria grow and multiply

a) in the intestinal tract but they don't produce a toxin outside the bacterial cell.
b) in the food but they don't produce a toxin outside the bacterial cell.
c) in food the intestinal tract but they don't produce a toxin outside the bacterial cell.

9- Marine biotoxins are?

a) Artificially occurring chemicals, caused by certain types of toxic algae that accumulate in fish and shellfish.
b) Naturally occurring chemicals, caused by certain types of toxic algae that accumulate in fish and shellfish.
c) Naturally occurring organic, caused by certain types of toxic algae that accumulate in fish and shellfish.

10- Domestic and wild cats are the only definitive hosts for the intestinal or sexual phase of .....

a) Toxoplasma gondii
b) Sarcocystis hominis
c) Cyclospora cayetanensis

11- One from the following act as non essential metals of surface water systems are:

a) Cobalt , iron
b) copper , Manganese
c) Cadmium , Arsenic

12- Dioxins are?

a) mixtures of chlorinated biphenyls with varying percentages of chlorine.
b) group of organic chemicals which contain 210 chlorinated dibenzo-p-dioxins and chlorinated dibenzofurans
c) biological, chemical or physical agents in food that may have an adverse health effect

13- One of these is a characteristic of PCPS:

a) low solubility in water
b) high flammability
c) UnStable chemically

14- Is an anti mineral as well as an anti protein, It forms insoluble chelates with many essential metals, such as iron, and binds to amino acid moieties in proteins, especially to lysine

a) Glucosinolates
b) Gossypol
c) Phytic acid

15- -Biochemicals used to disrupt the mating behaviour of insects.

a) Pheromones
b) Fumigants
c) Pesticides

Prof. Dr. / Ibrahim Alhawary

Best Wishes