



Please Answer the following questions:

1 - Write on the following:

(12 degrees , 4 of each)

- Defined of radiation and the main factors of preservation of fish by radiation is a difficult challenge.
- What are dioxins and source of dioxons
- Hazard Effects of Lead Metals

2 - In Table compare between the following:

(8 degrees , 4 of each)

- E.coli and clostridium botulinum
- Biomagnification and bioconcentration factor.

3- Choose the correct answer:

(22 degrees , 1 of each)

- Are constituted by the electromagnetic waves at the longer wavelength of the spectrum ranging from near infra-red rays to radio waves.
A-non-Ionizing radiation B-ionizing radiation
- Domestic and wild cats are the only definitive hosts for the intestinal or sexual phase of this organism.
A- Amebiasis B- Toxoplasmosis C-Sarcocystosis
- causes diarrhea in adults and they have been sees only in China.
A-Rota viruses Group A B -Rota viruses Group b
- This mycotoxin has biological properties similar to Patulin
A-Ochratoxin B - Penicillic Acid C -Citrinin
- Under long wave U.V light, it fluoresces lemon yellow.
A-Ochratoxin B - Penicillic Acid C-Citrinin
- This mycotoxin is structurally and biologically related to the aflatoxins
A-Sterigmatocystin B- Fumonisin C- Zearalenone
- Produced as a byproduct in the mining of Zinc and lead
A- tin B- Cadmium C-cobalt
- The pH of fermented food is to for toxin production
A- low B- high
-is transmitted by the fecal -oral route
A- Rota viruses B-Prion C- Hepatitis A D- None of the above
- DDT is example of.....pesticide
A-carbamates b-organophosphates
- chlorinated hydrocarbons have become most hazardous to human health through a process called
A- Bioconcentration Factor B- Biomagnification C- Acceptable Dairy Intakes
D- All the above
- all these bacteria gram positive except
A-Aeromonase B-listeria C-clostridium botulinum
D-staphylococcus aureus
- This toxin causes oesophageal cancer
A-zearalenone B-sambutoxin c-ergots D-fumonisin



14. As dioxins are very difficult to be analyzed, so presence PCBs are indicator for the presence of.....
 A- Heavy Metals B- Glucosinolates C- PCDD
 D- None of the above
15.refer to damage to cells that are not associated with reproduction
 A- Genetic damage B- Somatic damage C- Gamma radiation
 D- Sickness damage
16. cadmium has chemical characteristics similar to-----
 A- Mercury B- Arsenic C- Zinc D- None of the above
17. This virus is more resistant to destruction by chloride than other enteric viruses.....
 A-Rota B- Polio C- Noro
18.is fish poisoning results from the bacterial action on mackerel.
 A-Scombrototoxic B-Cyanobacterial Toxins C-Ciguatoxic
19. this Infection caused by ETEC , are prevalent in infants in tropical countries called.....
 A-Shigella-like disease B-cholera-like syndrome
20. The principal habitat of the organism is the skin, mucous membranes of warm blooded animals.
 A- Aeromonase B-listeria C-clostridium botulinum
 D-staphylococcus aureus
21., is usually associated with consumption of food products , starting from 6 to 15 hours after consumption
 A- diarrhoeal syndrome B- emetic syndrome
22. Is structurally a chlorinated iso-coumarin derivative with an amide bond to phenyl alanine
 A-Ochratoxin B - Penicillic Acid C-Citrinin

4- Put True or False:

(8 degrees , 1 of each)

- 1) At higher doses (up to 100 rem), the cells might not be able to repair the damage. (True – False)
- 2) Short-wavelength radiations have enough energy to cause energy to ionization of molecules, mainly water. (True – False)
- 3) Treatment with MT should begin from the second or third day after the fry are released from maternal care. (True – False)
- 4) In the fish carcass, MT was detectable after only 50 hours of hormone withdrawal (True – False)
- 5) The endotoxin can not be released from the bacterial cell until the bacteria die. (True – False)
- 6) The infectious dose of shigella is high ,of the order of 10⁶ cells (True – False)
- 7) AFB1, is a hydroxylase product of AFM1 (True – False)
- 8) Irradiation has no significant effect on the nutritional value of the macronutrients within foods (proteins, lipids, carbohydrates). (True – False)

Prof. Dr. / Ibrahim Alhawary

Best Wishes



Question (1)

(30 degrees)

- a- Mention major enzymes involved in DNA replication and the function of each enzyme.
- b- What is the problem of telomeres in DNA replication in eukaryotes? How can the cell solve this problem?
- c- Explain the alternative splicing of mRNA
- d- What are the major traits under selection in aquatic animal breeding programmes?

Question (2)

(20 degrees)

Choose the correct answer:

1- A typical gene contains the information for:

- a- one specific protein
- b- two different proteins
- c- more than two proteins
- d- non of the above

2- The mechanism of replication of DNA discovered by Meselson and Stahl is:

- a- semi-conservative replication
- b- conservative replication
- c- diepersive replication
- d- non of the above

3- Bacteria, with their smaller, circular genomes, typically have:

- a- a single origin of replication
- b- multiple origins of replication
- c- no replication in bacteria
- d- non of the above

4- Shortening of telomeres during replication occur in:

- a- leading strand
- b- lagging strand
- c- both strands of DNA
- d- non of the above

5- The elongation complex is composed of:

- a- RNA polymerase+ template DNA+ the growing RNA.
- b- RNA polymerase+ template DNA +growing DNA



- c- DNA polymerase+ template DNA+ growing RNA
- d- DNA polymerase+ template DNA+ growing DNA

6- Degenerate genetic code means that:

- a- more than one codon can specify the same amino acid. (this a.a. is called **synonymous**).
- b- each amino acid is specified by one codon only
- c- more than one codon can specify the same amino acid. (this a.a. is called non-**synonymous**).
- d- non of the above

7- Silent mutations mean:

- a- base substitutions that result in a new codon that codes for **the same amino acid**.
- b- base substitutions that result in codon that codes for a different amino acid which have the same properties of the wild type protein.
- c- base substitutions that result in completely different amino acid
- d- both a-b

8- Mass selection is simple and works well when:

- a- The heritability is high (> 0.3)
- b- The population is large so that large selection differentials can be employed
- c- the heritability is low (< 0.3)
- d- both a-b


9- High mutation rate in mtDNA than nuclear DNA is due to:

- a- Insufficient DNA repair system
- b- absence of introns
- c- large amount of DNA proteins like histones
- d- both a-b

10- Heteroplasmy in the mitochondria means that:

- a- The presence of more than one type of mtDNA (mutant and wild type) in the same cell
- b- Eukaryotic cell whose copies of mtDNA are all identical
- c- Eukaryotic cell that does not contain any mitochondria
- d- prokaryotic cell with more than one type of mtDNA (mutant and wild type)

Good Luck to all of you

العام الجامعي ٢٠٢٠/٢٠٢١	الفصل الدراسي: الثاني	كلية: علوم الثروة السمكية والمصايد	جامعة: كفر الشيخ	
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الدرجة الكلية للاختبار: درجة ٦٠	زمن الامتحان: ساعتان	اسم المقرر (رمز المقرر): MH	الفرقة: الثانية	

(٣٠) درجة

السؤال الأول

(٢٠) درجة

(أ) ضع علامة صح أو خطأ

- ١- تعتبر لغة الإشارة من وسائل التواصل اللفظي.
- ٢- يقصد بالتواصل بين الفرد وذاته قدرته على إتخاذ القرارات.
- ٣- يعتبر الذكاء من العوامل الأسرية المؤثرة على إكتساب اللغة.
- ٤- يعد الحرمان الأسرى من الأسباب النفسية لإضطرابات النطق والكلام.
- ٥- التدفق النفسي يعنى الاستغراق التام فى الأداء مع الشعور بالتعب.
- ٦- يقصد بالمخاطرة المحسوبة القفز والغوص فى المجهول.
- ٧- الحذف هو عدم نطق بعض الحروف أو حرف واحد من الكلمة.
- ٨- من الوظائف التربوية للغة نقل المعلومات من جيل لآخر.
- ٩- تعد اللججة من أمثلة اضطرابات الصوت.
- ١٠- يواجه الاطفال الذين لا يبدو عليهم الوعى صعوبة فى التواصل .
- ١١- تعد الثقة بالنفس من المتغيرات البيئية المؤثرة فى الاقدام على المخاطرة المحسوبة.
- ١٢- استخدام التكنولوجيا من الوسائل المساعدة على إدارة الوقت.
- ١٣- التلعثم هو التوقف عن نطق الكلمة ثم نطقها دفعة واحدة.
- ١٤- يساعد التواصل الفرد على نقل الأفكار الابتكارية للآخرين.
- ١٥- المستوى الاقتصادى والاجتماعى من العوامل الأسرية المؤثرة على اكتساب اللغة.
- ١٦- من الوظائف النفسية للغة تعبير الفرد عن حاجاته ورغباته.
- ١٧- يقصد بمهارات التواصل التفاعل والتأثر من فرد لآخر ومن جماعة لآخرى.
- ١٨- تعتبر ثقافة المجتمع من العوامل المؤثرة فى الاقدام على المخاطرة المحسوبة.
- ١٩- يعد التفويض من العمليات المسؤولة عن اهدار الوقت.
- ٢٠- تشتمل مكونات اللغة على الأصوات والتراكيب والنحو والمعانى فقط.

(١٠) درجات

(ب) اذكر أهمية التواصل ؟

Please answer the following questions:

First question :- Put a True or False by the statements with error correction (20 Marks)

- 1- The body is now known to need more than 50 nutrients for normal growth and maintenance ().
- 2- For aquaculture to contribute more to the world's food supply, production must be intensified ().
- 3- The caloric value of dressed fish is more than of beef or pork. ().
- 4- Lipid being the most expensive major feed component. ().
- 5- Primary production in chemically fertilized fish ponds was 4 times greater than in unfertilized ponds. ().
- 6- The abundance of plankton is good as long as the transparency is less than 80 cm. ().
- 7- The minerals are conveniently divided into organic and inorganic material. ().
- 8- Proteins may have up to 25 different basic units (amino acids). ().
- 9- Dietary free amino acids are more rapidly assimilated in fish than protein-bound amino acids ().
- 10- Carbohydrates are the most energy rich of all classes of nutrients. ().
- 11- The concentration of n-6 PUFA in the tissues of fish is generally high ().
- 12- Marine fish appear to have a greater requirement for HUFA's than freshwater species. ().
- 13- When two to ten monosaccharide units are linked together they form polysaccharide ().
- 14- Vitamins are required by the animal body in trace amounts. ().
- 15- Vitamin K is required for the maintenance of normal blood coagulation. ().
- 16- Cobalt is an essential component of the respiratory pigments haemoglobin and myoglobin. ().
- 17- Excess energy is dissipated as heat. ().
- 18- Small fish and shrimp require a higher feeding rate compare with larger animals. ().
- 19- Vitamin C is required for normal vision. ().
- 20- Dietary cobalt availability and absorption is reduced in the presence of high dietary intakes of iodine ().

Second question: Complete the following sentences: (21 marks):

- 1- Energy requirements are for fish than most terrestrial's
- 2- Detritus feeders feed mainly on at the bottom of the pond
- 3- Different types of food used in fish ponds includes & &
- 4- Secondary feed refers to
- 5- Zooplankton refers to
- 6- Supplementary feedstuffs are available in two forms: and
- 7- Plant cell walls are made up of
- 8- Proteins may be classified into & & proteins.
- 9- Only of amino acids are commonly found in proteins.
- 10- Amino acids may be divided into two groups and
- 11- Lipids may be classified into basic groups.
- 12- Fat deposits of most animals in the form of
- 13- The main storage carbohydrate of animals is
- 14- The intestinal cellulase activity of fish from resident bacteria is
- 15- Water-soluble vitamins toxicities are
- 16- Use of hormones is limited because of and
- 17- The essential mineral elements are usually classified into and
- 18- Dietary zinc availability and absorption is reduced in the presence of
- 19- Copper is readily absorbed from the
- 20- Probiotics are
- 21- Popular binders includes

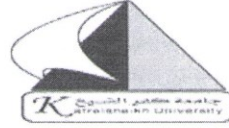
Third question: Choose only three (9 marks).

- A. Animal nutrition today is multidisciplinaryexplain?
- B. At present there is no quantitative information on the dietary EAA requirements of shrimp, why?
- C. The ability of carnivorous fish species to hydrolyze or digest complex carbohydrates is limited. Explain?
- D. What are different types of feed additives can be added to fish diets?

With our best wishes


Prof. Dr. Malik M. Khalafalla

**KAFRELSHEIKH UNIVERSITY
FACULTY OF AQUATIC AND
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جامعة كفر الشيخ
كلية علوم الثروة السمكية
والمصايد

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

Allowed Time: **2 hours**
Date: **23 June 2020**

Final Exam of the Academic Year: 2020-2021

Answer the following questions: (50 Degrees)

1. The First Question (22):

A. Put (✓) in front of the correct sentences and (×) in front of the wrong sentence. (13 Degrees)

1. Color retardation in Red tilapia is one of the disadvantages of this species. (.....)
2. Groupers can Live in a wide range of salinity from 5 -75ppt. (.....)
3. Nylon Surround nets are the best types of fishing nets for catching broodstocks. (.....)
4. MS222 is toxic to eggs and milt. (.....)
5. Cannula" is used to discriminate between Male and Female broodstocks. (.....)
6. The average Fecundity of Grey mullet (*Mugil cephalus*) is 300,000 eggs/kg/Female. (.....)
7. The acreage of marine cages should be 50% of the total farming area. (.....)
8. During maturation and spawning months (inside the spawning season), broodstocks must feed on dry feed at 20% of body weight. (.....)
9. If the average diameter of eggs for sea bass ranges 525-550 microns, you can stimulate spawning with hormones? (.....)
10. Stoppers are very important in marine cages because it helps in case of strong waves. (.....)
11. Expanded Polystyrene (EPS) is used as a filling material in marine cages because it is very light in weight. (.....)
12. The direction of marine cages should be corresponding to the direction of sea current. (.....)
13. Seabream broodstocks with weights more than 1,500 grams should be considered as females (mostly). (.....)

B. Complete the following: (9 Degrees)

1. The scientific name of ----- is *Sparus Aurata*, and the common Arabic name is ---
-----).
2. The Arabic name of meagre is -----, while the scientific name of European sea bass
is -----.
3. Water temperature in the transportation tanks should be maintained between ----- °c, but not
more than ----- °c.
4. The best concentration of the Anesthetic products, such as Clove oil, is ----- ml/liter of water,
while MS-222 is ----- mg/liter of water.

5. To eradicate the external parasites on the broodstocks, Dipterex can be used at a concentration of ppm for one hour, while Nitrofurazone should be used at ppm for 24 hours.
6. Asynchronous broodstocks characterize with continual development and spawning of oocytes, such as, while the example of Group synchronous is (.....).
7. The best velocity of water Current for marine fish cages is cm/s.
8. The best Stocking density of marine flatfishes in cages is fish/m².
9. The best age of maturity for marine fishes such as mullet, sea bass, and sea bream is years.

2. The Second Question (15 Degrees):

Write short notes on the following points:

1. The advantages and disadvantages for one species of the following fishes (Choose only one species): (1) Meagre (*Argyrosomus regius*); (2) Grey mullet (*Mugil cephalus*)
2. The stages of anesthesia.
3. Write brief (Short) notes on stage 5 of the ovarian development of marine fishes.
4. Advantages of hormonal-induced spawning.
5. What are the problems that fish fry with no or undeveloped swim bladder will suffer from?

3. The Third Question (13 Degrees):

Marine aquaculture in cages is one of the most profitable, safest, and less risky aquaculture systems; based on the previous statement, clarify the following points:

1. The definition of **inshore** and **offshore** aquaculture.
2. The advantages of intensive mariculture in cages.
3. The main components of marine floating fish cages.
4. What are the advantages of using **HDPE** in pipes and brackets of marine fish cages?.

With my best wishes
Dr. Mohamed Abdel-Rahim



Answer the following questions

Question No. I:

(Score 10)

- i) Define the following terms: Concentration – Analyte – Molar solution – Acid – base indicator - standard solution
- ii) 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 0.7M and 0.5 N solutions; what is the volume of the resulting diluted solution?

Question No. II

(Score 15)

- i) What is difference between the strong acid and weak acid?
- ii) What is your view on the salt hydrolysis?
- iii) Define the back titration and clarify when Back titration is necessary?
- iv) How does the buffer solution work?

Question No. III

(Score 15)

- i) Write the balance chemical reactions describe:
 - a) Mohr's method
 - b) Back-titration by EDTA
- c) Direct EDTA titration for determination of metal ion (M^{n+})
- ii) What are the classes of the salts derived from acids and alkalis? Give example in each case.
- iii) What is the Displacement Titration? Give example from your current study
- iv) For an aqueous solution of a salt derived from weak acid and weak base, what is the pH of this solution?

Question No. IV

(Score 10)

- Define the neutralization curves and draw the titration curves of the following titrations:
- i) Strong acid and strong alkali
 - ii) Strong acid and weak alkali
 - iii) Weak acid and strong alkali
 - iv) Weak acid and weak alkali
- Give an example for each neutralization reaction with writing the balance chemical equations and from each curve determine the suitable indicator.

Good luck
Prof. Dr. A. M. Ramadan

