


Kafrelsheikh university  
Faculty of Aquaculture and fisheries sciences.  
Aquaculture department

Exam of Aquatic botany  
Second term  
Time :2hr  
Date:6/6/2021



علم النبات حيا

C.C.I

(1): Write briefly on the followings: (20 degree)

- 1- Function of coralline algae.
- 2- Heterocyst.
- 3- Forms of green algae.
- 4- The red algae have the ability to survive at a greater depth than other algae. (give reasons)

(2): Correct the underline words: (20 degree)

- 1-. Cyanobacteria devoid from chlorophyl which differentiate it from the true algae.
- 2- The leaves of floating plants lack of waxy material and this help it to absorb co<sub>2</sub>.
- 3-Algae are microorganisms that floating in water (not attached on the bottom), and can perform photosynthesis.
- 4- Epizoic algae are a type of algae can be found in highly saline water.
- 5- Euglena is considering a good source for extraction of alginic acid.
- 6- the green algae reserve their food in form of protein.
- 7- Coenobial thallus is irregular arrangement of cells varying in number, shape and size.
- 8- Phototrophic algae are a type of algae can grow by photosynthesis and also on other organic material.
- 9- Chlorella is a motile green alga, rotates during swimming. So, it called rolling algae.
- 10- The members of green algae are commonly called Kelps.

(3) With drawing only explain the life cycle of Diatoms (10 degree)

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GOOD LUCK

فلك وعلم احياء مزارع  
ع.ع.ا

(1): How to differentiate briefly between: (15 degree)

- 1- Weather and climate.
- 2- Alcohol and Mercury thermometer.
- 3- Aviation meteorology and agrometeorology.

(2): Choose the correct answer: (20 degree)

- 1- .....is the mass of water vapor per cubic meter of air.  
a-Specific humidity  
b- Absolute humidity.  
c- Relative humidity  
d-Minimum humidity.
  - 2- When the mercury of thermometer raises, mercury of barometer .....  
a-Raises  
b-Not affected  
c-Falls  
d-None of them.
  - 3-Water temperature affect fish reproduction through its effect on .....  
a-Rate of ovulation  
b- Egg size  
c-Milt production  
d- All of them
  - 4- The mixing of nutrients between the surface and deep water is called.....  
a-Biological pump  
b-Algal bloom  
c- Net production  
d- None of them
  - 5- when the air is holding half the water it could hold, its Relative Humidity is .....  
a-100%  
b-50%.  
c-zero %  
d- half %.
  - 6- .....is the average of daily mean temperature during the month.  
a-Max temperature  
b-Min temperature  
c-Daily mean temperature  
d-Monthly mean temperature.
  - 7- .....is one of greenhouse gases contribute in acid rain.  
a-Argon  
b-Nitrogen  
c-Nitrous oxide  
d- carbon dioxide
  - 8- .....is the layer of the atmosphere which affected by friction.  
a-Planetary Boundary Layer  
b- Free atmospheric layer  
c-Ozone layer  
d- None of them
  - 9- If the Max temperature in a day is 35 °C and the Min temperature is 25 °C. The daily mean temperature will be.....  
a-30 °C  
b-60 °C  
c-10 °C  
d-32 °C
  - 10- The atmospheric pressure is measured by.....  
a-Hygrometer  
b- Barometer  
c-Anemometer  
d-Thermometer.
- 3- Discuss briefly each of the following: (15 degree)
- a- Effect of Altitude on Temperature, Pressure and precipitation.
  - b- Relationship between high water temperature and zinc toxicity.

**Please answer the following questions:**

❖ **First question -: Put a True or False by the statements with error correction (15 Marks)**

- 1- Fish is used to refer to multiple species of fish. ( )
- 2- Carolus Linnaeus use Seventeen different taxonomic orders ( )
- 3- In vertebrates there are six pairs of the cerebral nerves at least ( )
- 4- In fresh water fishes: the kidney produce large amount of diluted urine ( )
- 5- Lampreys live in the seas and give birth in fresh water ( )
- 6- Ichthyology is the branch of ecology devoted to the study of fish. ( )
- 7- Fishes are segmented and segmentation is external. ( )
- 8- Scales are exothermal in origin. ( )
- 9- Teeth are well developed in carnivorous fishes. ( )
- 10- Operculum is present only in bony fishes. ( )
- 11- Big air bladder found in cartilaginous fish. ( )
- 12- Tilapia fish start in mortality below 15 ° C. ( )
- 13- The mucus on the skin of catfish decreases the resistance to diseases. ( )
- 14- The mirror carp is the result of a mating between Scaly carp and Leathery carp. ( )
- 15- Maximum speed is the speed, which fish used in the long- Trip. ( )

❖ **Second question :Complete the following sentences: (15 marks):**

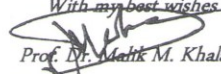
- 1- Fish body is covered with ..... and .....
- 2- ..... type of circulatory system is found in fishes.
- 3- First gill slit of cartilaginous fish is .....
- 4- Fertilization in cartilaginous fish is .....
- 5- Breeding carp started in ..... since 2000 BC.
- 6- Division of fish according to specifications to anatomical includes ..... and ..... fish.
- 7- ..... is the original home of most kinds of tilapia.
- 8- Catfish used as a way to ..... on the random breeding of tilapia.
- 9- Mullet fish can be successfully bred in farms ..... or ..... or ..... water.
- 10- ..... fin of great significance in the swim fish during high speed.
- 11- Positive movement is a movement that carried out the fish as a result of its ..... effort.
- 12- Reasons for migration divided into Migration for ....., ..... and .....
- 13- Fish that live their life span in the sea and migrate to the rivers for spawning like .....
- 14- Migration food divided to .....and .....migration
- 15- Potadromous Fish: Fishes whose migrations occur .....

❖ **Third question: (12 marks).**

- 1- Fish farms specifications?
- 2- Most important types of Carp fish?
- 3- In recent years, attention seemed marine fish breeding, why?
- 4- Scientists put some theories to explain migration, explain?

❖ **Fourth question: Explained by only drawing with writing data (8 marks).**

- 1- Different kind of vertebrate?
- 2- Basic Fish tail shapes?

With my best wishes  
  
Prof. Dr. Mahk M. Khalafalla

مؤكدا نام ١١١

جامعة كفر الشيخ - كلية علوم الثروة السمكية والمصايد

المستوى الأول - مادة : حقوق إنسان ومواطنة

٢٠٢١ / ٦ / ١٦ م

.....

سؤال الشفهي ( أجب في نفس الورقة )

اسم الطالب :

رقم الجلوس :

س : اذكر أثرين فقط من آثار الفساد

ج :

١ -

٢ -

15. The molecular formula of nonane is:  
a.  $C_8H_{18}$ .                      b.  $C_9H_{20}$ .                      c.  $C_{10}H_{22}$ .                      d. none of the above.
16. The general formula of alkyl groups is:  
a.  $C_nH_{2n+1}$ .                      b.  $C_nH_{2n-1}$ .                      c.  $C_nH_{2n}$ .                      d. none the above.
17. The IUPAC name for the formula  $CH_3CH_2CH_2CH_2CH(CH_3)CH_3$  is:  
a. isopropyl propane.                      b. 4-methylpentane.                      c. 2-methylpentane.                      d. none the above.
18. Treatment of  $CH_3CH_2CH(Br)CH_3$  with  $Zn/H^+$  gives:  
a.  $CH_3CH_2CH_2CH_3$ .                      b.  $CH_3CH_2CH(OH)CH_3$ .                      c.  $CH_3CH_2CH=CH_2$ .                      d. none the above.
19. The IUPAC name for the formula  $CH_3CH_2C(CH_3)=CH_2$  is:  
a. 3-methylbutene.                      b. 2-methylbutene.                      c. isopentene.                      d. none the above.
20. Treatment of  $CH_3CH_2CHCH_2Br$  with  $KOH/EtOH$  gives:  
a.  $CH_3CH_2CH_2CH_2OH$ .                      b.  $CH_3CH_2CH_2CH_3$ .                      c.  $CH_3CH_2CH=CH_2$ .                      d. none the above.
21. Treatment of  $(CH_3)_2C=CHCH_3$  with  $HI$  gives:  
a. 2-iodo-2-methylbutane.                      b. 3-iodo-3-methylbutane.                      c. 2-iodo-3-methylbutane.                      d. none the above.
22. The IUPAC name for the formula  $(CH_3)_2CHC\equiv CH$  is:  
a. 2-methyl-1-butyne.                      b. 3-methyl-1-butyne.                      c. isopropyl acetylene.                      d. none the above.
23. Treatment of acetic acid with Ethanol/c.  $H_2SO_4$  gives:  
a. ethyl formate.                      b. ethyl acetate.                      c. methyl propionate.                      d. none the above.
24. Treatment of acetaldehyde with  $Zn/Hg/HCl$  gives:  
a. ethyne.                      b. ethene.                      c. ethane.                      d. none the above.
25. Treatment of sodium benzoate with  $NaOH/CaO/heat$  gives:  
a. benzene +  $Na_2CO_3$ .                      b. benzoin +  $Na_2CO_3$ .                      c. benzane +  $Na_2CO_3$ .                      d. none the above.

*Good Luck*

Kafrelsheikh University  
Faculty of Aquatic and Fisheries Sciences  
Course: **principles of aquaculture**  
Academic level: 1<sup>st</sup> year, 2<sup>nd</sup> semester  
Program: Aquaculture



Date: 23/6/ 2021  
Time: 2 hours  
Total marks: 50 mark  
Academic number:  
Student name:

**Q1- Complete the following sentences: (20 marks, 2 for each point)**

- 1- The pond should be dried before restocking for ..... days.
- 2- Silver carb is suffering from consumer rejection due to .....
- 3- ..... is used for fertilisation of stocked pond in rate of 20-30kg/ha.
- 4- .....pond is constructed in the deeper and lower area of the farm.
- 5- .....is the process of marine fish harvest depending on population dynamics.
- 6- Highly alkaline water should be treated with .....for proper aquaculture.
- 7- In case of porous soil, pond bottom may be treated with.....
- 8- ..... is the main source of infection in the primary infection source.
- 9- Embankment slope of loamy silt soil dyke is .....
- 10- .....is process of removing decomposed materials and feed remnant from pond bottom.

**Q2. A. Answer the following with (v) or (x): (20 marks, 2 for each point)**

1. Duck- fish integrated system provides fish with phosphorus ( ).
2. Rotenone is used for eradication of undesirable fish from fish ponds ( ).
3. Single harvest is more common than partial harvest ( ).
4. Swimming of fish beside dyke indicted bad health condition ( ).
- 5- Round corners of fish pond hinder harvesting process ( ).
1. The fish should have the same feeding behaviours in polyculture farm ( ).
2. Linear type race-way is better than lateral type fish farming ( ).
3. Testing of soil suitability for pond construction is performed throughout water permeability, ground water, and squeeze tests respectively ( ).
4. The dyke crest and slope should be free from plants or grasses ( ).
- 5- Rivaldi valve control the height of water column in fish pond ( ).

**Q2. B. Please, write on the aquaculture importance of the followings: (10 marks, 5 for each point)**

1. Sampling of cultured fish every 2 weeks
2. RAS

All the best  
Radi A. Mohamed

Kafrelsheikh University  
Faculty of Aquatic and Fisheries Sciences



Final Exam (winter semester)  
Academic year 2020 – 2021

Academic year : First  
Course : Food Engineering  
Time : 2 hours  
Full mark : 50 degree

Exam date: 27 /6/2021

Academic student number: .....

Student name: .....

Examiners committee: Dr. Atef Mohamed Elsbaay

**Answer the following questions :-**

**First Question:-**

**Degree (25)**

هندسة غذائية  
2021

1- How much heat is required to raise the temperature of 70 kg of water from 68°F to 80°C

2- Define the follows:-

Moisture content - Steady state conditions - Forced Convection

3- Potato flakes (moisture content = 75% wet basis) are being dried in a concurrent flow drier. The moisture content of the air entering the drier is 0.08 kg of water per 1 kg dry air. The moisture content of air leaving the drier is 0.18 kg water per 1 kg of dry air. The air flow rate in the drier is 100 kg dry air per hour. 50 kg of wet potato flakes enter the drier per hour. At steady state, calculate the following:

- What is the mass flow rate of "dried potatoes"?
- What is the moisture content, dry basis, of "dried potatoes" exiting the drier?

**Second Question:-**

**Degree (25)**

1- What types of heat exchangers used in the food industry?

2- Mention the assumptions for a tubular heat exchanger design?

3- Steel pipe with 3 cm inside radius and 10 cm outside diameter is being used to convey steam from boiler. to process equipment for distance 4000 cm. The inside pipe temperature is 115 °C and the outside pipe surface temperature is 194 °F. The total heat loss to the surroundings 529 kW under steady state conditions. Calculate thermal conductivity of the pipe

Good Luck ,,,,,,,,,,,,,,

Atef M.

- a. water treatment                      b. water pollution  
c. water filtration                      d. a&c
4. ....from nozzles is directed onto the screen so the particles are dislodged in the same direction.  
a. High-pressure water                      b. low-pressure water  
c. normal-pressure water                      d. low-pressure air
5. ....containing the particles is collected and represented the sludge water from the filter in which the concentration of particles is high.  
a. back-flush                      b. front-flush  
c. middle-flush                      d. back-flood
6. Back-flushing and removal of particles is possible on the part of the belt that is.....the water surface.  
a. away from                      b. above  
c. under                      d. No answer is correct
7. The valve consists of a gate or slide that stands vertically in the water flow is .....  
a. ball valve                      b. Diaphragm valve  
c. Gate valve                      d. Butterfly valve
8. PVC pipes are recommended for use at temperature .....  
a. 30°C                      b. 35°C  
c. 40°C                      d. 45°C
9. The fiberglass pipes consist of .....layers the .....layer is acting like glue.  
a. 3, polyester                      b. 2, fiberglass mat  
c. 3, fiberglass mat                      d. 3, quartz
10. The valve has the lowest head loss is .....  
a. Butterfly valve                      b. Diaphragm valve  
c. Ball valve                      d. Slide valve
11. When there is backflow in the system valve your choose is .....  
a. Butterfly valve                      b. Gate valve  
c. Angle seat                      d. Check valve
12. Water hammer may occur with .....  
a. Rapid starting and stopping pumps                      b. Rapid closing of valve  
c. A and B are correct                      d. No answer is correct
13. Sockets, flanges or union are used to .....  
a. Connect three pipes                      b. Allow the connection of pipes or equipment with different diameters  
c. Connect pipes or pipe parts                      d. No answer is correct
14. If we want to connect two pipes one of 1 inch and other of 3/4 inches you will choose.....  
a. Reducing nipple of 1x 3/4 inches                      b. Reducing bushing of 1x 3/4 inches  
c. coupling of 3/4 x 3/4 inches                      d. No answer is correct
15. The maximum pressure that pipes and pipe parts can tolerate is .....  
a. pressure loss                      b. Pressure class  
c. Pipe stress                      d. No answer is correct
16. Which pumps is called a radial flow pumps?

~~16~~  
(B)



- a. Axial pumps  
c. Airlift pumps
- b. Centrifugal pumps  
d. Diaphragm pumps
17. Which pumps that have low head and high discharge?
- a. Axial pumps  
c. Airlift pumps
- b. Centrifugal pumps  
d. Diaphragm pumps
18. The propeller with axial pump is located:
- a. Inside of a pipe  
c. Above of a pipe
- b. Outside of a pipe  
d. A and B are correct
19. Selecting a pump requires knowledge:
- a. Total head required  
c. Suction lift required
- b. Discharge flow required  
d. A, B and C are correct
20. In pump design, pressure and discharge are.....
- a. inversely related  
c. Partially related
- b. proportionally related  
d. Not related
21. Operation of Electromagnetic flow sensors is based upon .....law
- a. Henry's Law  
c. Faraday's
- b. Fredrich's  
d. Darcy's
22. In electromagnetic flow sensors the voltage is .....to the flow rate
- a. Equal  
c. inversely
- b. Proportional  
d. don't proportion
23. Level sensing technologies including.....
- a. Hydrostatic pressure  
c. radar measurement systems
- b. ultrasonic  
d. all of them
24. The hydrostatic pressure difference between the top and the bottom of a column of a liquid is related to the .....of the liquid and the ..... of the column
- a. height ,density  
c. Volume, velocity
- b. density , height  
d. velocity ,volume
25. Ultrasonic level sensors emit.....waves
- a. Sound  
c. magnetic
- b. x-ray  
d. light
26. Transmissions of the level measurement can be in various forms and the receiving instrument could be .....
- a. PC  
c. DCS
- b. PLC  
d. All of them
27. All the following are of the methods for particle removal in fish farming except for:
- a. Chemical filtration  
c. Mechanical filtration
- b. Ozonation  
d. No answer is correct
28. One common type based on axial rotating screen is the
- a. disc filter  
c. Pan filter
- b. drum filter  
d. Sand filter
29. The meshes in the screen are cleaned by..... either with air or water when the screen is above the water surface
- a. back flushing  
c. mechanical vibration of the filter cloth
- b. vacuuming  
d. No answer is correct

~~SA~~  
(B)

Kafr El-Sheikh University  
Faculty of Aquatic and Fisheries Sciences  
Department of Aquaculture  
Level: One Model B

Subject: Aquaculture Engineering  
(Elective Course2)

Time: 2 hours  
Date: /6/2021

Second semester exam during academic year 2020/2021



❖ **Please answer the following questions: (50 marks).**

❖ **First question – mark true for the correct sentence and false for the wrong one: (20 marks).**

1. The aim of using a filter is to extract all particles from the water flow.
2. To avoid particles breaking it must be treated as gently as possible.
3. The pore size of special fiberglass filter which particles stopped on it be 0.45mm.
4. Particles can be classified according to shape.
5. The back-flush with hot water can remove the layer of fat that can be created on the screen surface every back flush.
6. Instead of using water for the back-flushing we can use air.
7. The fiber glass pipes consist of 3 layers: A layer of polyester act like glue, layer of fiber glass mat act as reinforcement layer of sand or quartz.
8. The way of transport water in aquaculture is through pipes only.
9. Fiberglass is like thermoplastic changing it is shape by heat.
10. Copper is an example of a commonly used material for pipes in aquaculture.
11. In electromagnetic flow sensors, the liquid is not the conductor.
12. Ultrasonic level sensor the transit time is proportional to the distance between the liquid surface and transmitter.
13. A capacitive circuit can be formed between a probe and vessel wall.
14. Radar level measurements use the basic of firing macro-waves.
15. When a screen is used, the particles have to be removed from the surface to avoid blockage.
16. Back flushing is one of self-cleaning methods.
17. The manually method is always used for treatment of blockage.
18. All filter systems will cause a head loss.
19. Straining or micro screening is the most effective cleaning method per unit surface area.
20. The function of other water treatment equipment can be affected positively by the particle content.

❖ **Second question : choose the correct answer (30 marks):**

1. What are the simplest types of filters?
  - a. macro screening
  - b. micro screening
  - c. mechanical filters
  - d. B and C
2. What are the main methods of self-cleaning?
  - a. Back flushing
  - b. mechanical vibration of the filter cloth
  - c. Vacuuming
  - d. All of them
3. Removal of particles from a water flow is called.....

~~BA~~  
(B)