



EXAMINATION FOR 4TH YEAR STUDENTS OF SPECIAL ZOOLOGY

PRESENTATION AND SCIENTIFIC WRITING

Course code: ZO4107

Date: 24 March, 2021

First term

Total assessment marks: 100

Time allowed: 2 hours

Examiners: Prof. Mohamed Labib Salem and Dr. Mohamed Nassef

الامتحان في أربع ورقات

Q1: CHOOSE AND WRITE THE LETTER OF THE CORRECT ANSWER IN YOUR ANSWER SHEET (50 points, 1 point each)

1) Which of the following is not a goal of the introduction?			
a. Articulate the purpose of your research	b. Convince the readers to be interested in your research	c. Provide a detailed analysis of the findings and implications of past research and the history of the field.	
2) Which of the following is usually beyond the scope of the results section of a quantitative research report?			
a. Discussing what statistical techniques were used	b. Presenting figures and/or tables to portray the data	c. Providing detailed interpretation of the implications based on the data	d. Presenting specific statistics that were generated from the data
3) Which of the following is true of the reference sections?			
a. The author selects only the key references that cited in the report rest, and put them in the reference section.	b. The reference section has no strict formatting guidelines in psychology	c. The reference section lists all the citations in the research report.	
4) A peer-reviewed journal has what characteristics?			
a. Submitted manuscripts are reviewed by the author friends	b. Submitted manuscripts are almost always eventually accepted	c. Publications are reviewed by at least two experts in the field to ensure quality of the research	
5) What are the three parts of a paragraph?			
a. Thesis statement, Introductory statement, Body	b. Body, Thesis, Conclusion	c. Topic sentence, Body, Closing sentence	d. Introduction, Body, Thesis
6) Good scientific writing can be described as —, —, and —.			
a. clear, concise, and convoluted	b. concise, dense, and compelling	c. clear, concise, and flowery	d. clear, concise, and compelling
7) Which of the following sections is not a basic section of a quantitative research paper?			
a. Results	b. Methods	c. References	d. Criticisms
8) Which of the following pieces of information is typically not on the title page of a manuscript?			
a. Author names	b. Author affiliation	c. Keywords	d. Research acknowledgements
9) Due to its technicality, the most difficult section to write is one of the following?			
a. Materials	b. Procedure	c. Introduction	d. Results
10) In science, an educated guess is called a/an <u>h</u>			
a. question	b. conclusion	c. observation	d. hypothesis
11) Which of the following is not a way to achieve a compelling narrative in your writing?			
a. Use passive voice to build an objective sentence	b. Use logical and evidence-based reasoning	c. Start and end strong in your writing	
12) Why is it important to spend time writing an abstract for a research report?			
a. Readers sometimes use it to decide if they wish to read the full article.	b. It is the only opportunity to discuss your own interpretation of the research.	c. It is the only opportunity for you to report the applications and strengths of the research.	
13) Which of the following is recommended with regards of using the word "prove?"			
a. It is generally not a good idea to use "prove" in your write-up	b. It is generally only acceptable if your study is a replication of another study	c. It is always acceptable	d. It is acceptable only if your results are statistically
14) A literature review is a critical assessment of _____.			
a. All existing published material on the topic	b. All existing published and unpublished material on the topic	c. Relevant studies selected on the basis of inclusion and exclusion criteria	
15) What is the purpose of the closing sentence?			
a. It reminds the reader of the topic, and keeps them thinking.	b. It re-states the introduction.	c. It gives us details about the topic.	
16) Which of the following does not help with clarity in scientific writing?			
a. Use of precise word choice	b. Use of metaphors and flowery language	c. Limiting the use of scientific jargon	
17) What is the purpose of the abstract?			
a. Provides a clear and in depth discussion of the research implications	b. Discusses the motivation for the research but provide no information on the findings	c. Discusses the importance of the author's findings convincing the reader to read the article.	
18) Which of the following is the main goal of the methods section of a research report?			
a. Meticulously articulate how you analyzed the data.	b. Provide enough detail to allow an independent researcher to replicate your study.	c. Discuss the procedure you used so that readers can decide for themselves if your protocol is biased.	
19) Error bars are used for what purposes?			
a. They show the predicted levels of measurement error.	b. They are intervals on graphs that present the variability level in the sample.	c. They are bars only used on line graphs that are used to present the error level in participant behavior.	

20) The scientific method should be ___ and ___.			
a. subjective; public	b. objective; consistent	c. consistent; subjective	d. objective; anecdotal
21) You should have only ___ lines with ___ per line for each slide			
a. 7 by 8	b. 8 by 7	c. 7 by 7	d. 6 by 7
22) Borrowing someone else's ideas or words, but failing to properly document the original source is called —			
a. paraphrasing	b. writer's block	c. plagiarism	d. editing
23) Which research method is a bottom-up approach to research?			
a. Deductive method	b. Explanatory method	c. Inductive method	d. Exploratory method
24) Where should you look while presenting?			
a. At the board -- that's where the audience is looking	b. At your notes so you get the info correct	c. In the eyes of the audience	
25) The measure of the extent to which responses vary from the mean is called:			
a. The mode	b. The normal distribution	c. The standard deviation	d. The variance
26) In which step of the scientific method do we want to use graphs			
a. make a hypothesis	b. communicate results	c. asking questions	d. analyze data
27) The 1 st step of the scientific method is to —			
a. Design and do the experiment	b. Design or plan the experiment	c. Write a hypothesis	d. Identify the problem and state the question
28) When giving a presentation in front of an audience you should do all of the following except for			
a. Speak loud and clear	b. Provide handouts if needed	c. Dress professionally	d. Look at your screen and not the audience
29) — is a good font size for headers.			
a. 18pt.	b. 11pt.	c. 16pt.	d. 32pt.
30) What kind of reference is this? Brody, J. E. (2007, December 11). Mental reserves keep brain agile. <i>The New York Times</i> . Retrieved from http://www.nytimes.com			
a. Research report	b. Blog post	c. Web page	d. Online newspaper article
31) The paragraph in an essay which guides the reader to what the essay is going to be written about and how it will be organized.			
a. The introduction	b. The conclusion		
32) Good research proposals will always:			
a. focus on addressing the research objectives.	b. Consider all possible research that had previously been done on the topic.		
33) Which of the following hypotheses is written correctly?			
a. If I freeze a tennis ball, then it will not bounce as high.	b. Frozen tennis balls will not bounce as high.		
34) Which of these article types follows the IMRaD structure?			
a. Original research article	b. Review article	c. Both a and b	
35) The best graph to use if you want to compare the price of six different cars would be a —			
a. bar graph	b. pie graph	c. line graph	d. data table
36) This overview sentence is usually written at the beginning of each body paragraph.			
a. Thesis sentence	b. Topic sentence		
37) A series of steps designed to help you solve problems and answer questions			
a. hypothesis	b. scientific method	c. observation	d. experiment
38) Which of the following is important when creating a graph in science.			
a. titles	b. all of these	c. neatness	d. labels
39) When presenting, your poise should be:			
a. nervous and angry	b. confident and relaxed	c. annoyed	d. shy
40) Which part of a research report contains details of how the research was planned and conducted?			
a. Results	b. Design	c. Introduction	d. Background
41) A good topic sentence should always be —			
a. Boring	b. Detailed	c. Interesting	d. Long
42) Your presentation should consist of title slide, —, body, and —			
a. objects and summary	b. opinions and paragraphs	c. objectives and summary	d. options and pages
43) What is the last Rule of Thumb when creating an effective presentation?			
a. Organize your information	b. Spell check your presentation	c. Keep it simple	d. Minimize text on slides.
44) A graph that uses vertical bars to represent data is called —			
a. A line graph.	b. A pie chart	c. A bar chart	d. A vertical graph
45) A researcher designs an experiment to test how variables interaction affect job-seeking behaviors. The purpose of the study was —			
a. Description	b. Prediction	c. Explanation	d. Exploration
46) The purpose of descriptive statistics is to —			
a. Summarize the characteristics of a data set	b. Draw conclusions from the data	c. None of the above	
47) Plagiarism can be avoided by —			
a. Paraphrasing the author's text in your own words	b. Copying the work of others accurately	c. Cut and pasting from the Internet	
48) Which of the following should not be a criterion for a good research project?			
a. Dependent on the completion of other projects	b. Demonstrates the researcher abilities	c. Demonstrates the fields integration	
49) Research that seeks to examine the findings of a study by using the same design but a different sample is called —			

a. An exploratory study	b. A replication study	c. An empirical study	Hypothesis testing
50) A qualitative research problem statements—			
a. Specify the research methods	b. Convey a sense of emerging design	c. Express research variables	d. Specify a research hypothesis

Q2. CHOOSE (✓) OR (✗) AND WRITE THE LETTER OF THE CORRECT ANSWER IN YOUR ANSWER SHEET (30 points, 1 point each)

1) You should always include terms such as 'we' and 'our' in research proposals in order to sound more friendly	a. True	b. False
2) It is good practice for the writer of research proposals to assume that the reader has prior knowledge of the research problem.	a. True	b. False
3) Writing a research proposal helps clarify your ideas and helps you organize those ideas.	a. True	b. False
4) When presenting, you should show enthusiasm for your topic or creation	a. True	b. False
5) The thesis statement should express a main idea that links to supporting points in the body paragraphs.	a. True	b. False
6) When providing two or more authors' names in a parenthetical citation, you use "and" to join the names, not the ampersand (&) symbol. For example, (Lastname, Lastname, and Lastname, year, p. X).	a. true	b. false
7) There is a difference between the thesis statement and the topic sentence.	a. True	b. False
8) When citing one or two authors in-text, never use et al; instead, always provide the names of the author or authors.	a. True	b. false
9) Paraphrasing involves using the same words as someone else, but rearranging the order of those words within the sentence.	a. True	b. False
10) A good research report stays at a high level of abstraction and rarely descends to concrete examples and details.	a. True	b. False
11) You should cite the work of any individual whose ideas, theories, or data have directly influenced your writing.	a. True	b. False
12) Using the verbs that are variations of "to be" imply authority and should not be used exclusively in academic writing.	a. True	b. False
13) A person can accused for plagiarism only if the person he/she intended to plagiarize.	a. True	b. False
14) It is acceptable to turn in a paper that is based exclusively off of another person's ideas, as long as the paper is cited correctly.	a. True	b. False
15) When presenting, it is important to articulate and use a loud, clear voice.	a. True	b. False
16) If you fail to identify direct phrases with the use of quotation marks and a page/ paragraph number, you are committing plagiarism.	a. True	b. False
17) You should always add pictures to your presentation even if it doesn't have anything to do with your presentation.	b. True	a. False
18) It is Okay to mumble... this encourages your audience to really listen and pay attention	a. True	b. False
19) Most acts of plagiarism occur unintentionally.	a. True	b. False
20) If you put someone else's ideas into your own words and do not provide a citation for those ideas, you are committing plagiarism.	a. True	b. False
21) Research conclusions are really just a summary of the whole research.	a. True	b. False
22) Scientific experiments are rarely conducted to test a hypothesis.	a. True	b. False
23) A good title is one that has the minimum possible number of words that describe accurately the content of the paper.	a. True	b. False
24) Using quotations from the literature is unacceptable in all circumstances.	a. True	b. False
25) Writing the research proposal is well done when the research is finished.	a. True	b. False
26) Information in your presentation should be organized.	a. True	b. False
27) Research proposals will often be split into sub-sections by topic area.		

a. True	b. False
28) It is a good idea to start your references section at the beginning of the writing process and add to it as you go along.	
a. True	b. False
29) If you paraphrase a source by summarizing the information, it is not necessary to credit the source within the text; you just need to reference the source in a reference list at the end of the paper.	
a. True	b. False
30) Not giving proper credit to the original source when a writer restates or rewords the ideas of another person is a form of plagiarism.	
a. True	b. False

Q3: MATCH THE NUMBER OF EACH CLUNKY PHRASE IN COLUMN A WITH THE LETTER OF ITS EQUIVALENT IN COLUMN B. (10 points, 0.5 point each)

Column A	Column B
1. With the possible exception of	A. Fewer
2. In actual fact	B. Cause
3. In as much as	C. Always
4. A majority of	D. Can
5. A number of	E. Near
6. Are of the same opinion	F. To
7. At the present moment	G. About
8. By means of	H. Because
9. Less frequently occurring	I. All
10. All three of the	J. Firstly
11. Fewer in number	K. The three
12. Give rise to	L. Rare
13. In all cases	M. By
14. In a position to	N. Now
15. In close proximity to	O. Agree
16. In order to	P. Many
17. In terms of	Q. Most
18. The fact that	R. Because or Since
19. All of the	S. Actually
20. First and foremost	T. Except

Q4: WRITE A REFERENCE FOR THE FOLLOWING RESEARCH ARTICLE (5 points)

P.O.Box 2345, Beijing 100023, China
 Fax: +86-10-85381893
 E-mail: wjgd@public.bta.net.cn www.wjgnet.com

World J Gastroenterol 2002;8(5):908-912
 World Journal of Gastroenterology
 Copyright © 2002 by The WJG Press ISSN 1007-9327

• BASIC RESEARCH •

The immunotherapeutic effect of dendritic cells vaccine modified with interleukin-18 gene and tumor cell lysate on mice with pancreatic carcinoma

Zhao-Hui Tang, Wen-Hong Qiu, Gao-Song Wu, Xiang-Ping Yang, Sheng-Quan Zou, Fa-Zu Qiu

Q5: SUGGEST A TITLE AND KEY WORDS FOR THE FOLLOWING RESEARCH ARTICLE ABSTRACT (5 points)

Cancer chemotherapy drugs are historically regarded as detrimental to immunity due to their myelosuppressive effects. However, accumulating data suggest that the antitumor activity of conventional cancer chemotherapy results in part from its ability to harness the innate and adaptive immune systems by inducing immunologically active tumor cell death. Additional data broaden the immunologic impact of cancer chemotherapy drugs, demonstrating that some drugs have the ability to disrupt pathways of immune suppression and immune tolerance in a manner that depends on the drug dose, and the timing of its administration in relation to immunotherapy. Understanding the cellular and molecular basis of the interactions between chemotherapy drugs and the immune system will facilitate the strategic development of chemoimmunotherapy treatment regimens that both maximize tumor regression and the antitumor immune response for the long-term clinical benefit of cancer patients.

End of the exams

Wish best wishes from the examiners



Tanta University
Faculty of Science
Zoology Department

SPECIAL ZOOLOGY 4th GRAD STUDENT

Course Title:

Physiology 2 exam

Course Code: ZO4103

Date:

Mars, 2021

Term: First

Marks: 150

Time Allowed: 2-HRS

Part one (50 Points): Answer the following questions

(A) Define each of the following:

1. Vital capacity (VC)
2. Residual volume (RV)

(B) Write short notes about

1. Respiratory acidosis
2. Methods of carbon dioxide transportation in blood

(C) Choose the correct answer

1. Oxygen tension of alveolar air is
a- 66 mm Hg b- 107 mm Hg c- 100 mm Hg d- 53 mm Hg
2. At the oxygen tension which exists in arterial blood (100 mm Hg), the hemoglobin is saturated.
a. 50-60% b- 70-75% c- 95-98 % d- 60-80%
3. CO₂ tension in venous blood is
a- 46 mm Hg b- 56 mm Hg c- 60 mm Hg d- 70 mm Hg
4. Hemoglobin is responsible for about..... of the buffering capacity of the blood while red blood cell phosphates contribute to
a- 50% - 70% b-60% - 25% c-85% - 28% d- 35% - 45%
5. In the course of a single passage of the blood through the tissues, the oxygen content of the blood falls only from 20 to about.....vol%.
a- 12% b-18% c- 15% d- 10%
6. A rise in temperaturehemoglobin saturation.
a- increases b- does not change c- decreases
7. Reduced hemoglobin acts as an anion accepts the ions forming what is called acid- reduced hemoglobin.
a- O²⁻ b- K⁺ c- Cl⁻ d- H⁺
8. A decrease in normal oxygenation with a consequent increase in deoxygenated hemoglobin, gives characteristic bluish appearance to the skin. This is spoken of as.....
a- anemia b- cyanosis c- polycythemia
9. The tension of nitrogen in venous blood isthat of lung alveoli.
a- higher than b- equal to c- lower than
10. The shape of the dissociation curve of oxyhemoglobin varies with the tension of
a- O₂ b- CO₂ c-N

Part Two (50 Points): Answer the following questions

I- MCQ: (10 marks)

1. Which of the following fluids is found in the CNS?
a. SF b. CSF c. VHF d) tears fluid
2. Hormone(s) that regulate the water volume and electrolytes through the renal tubules are:
a. prolactin b. ADH c. aldosterone d) both b &

3. Which of the following electrolytes pair in ECF that are involved in the nerve impulse conduction?
 a. Ca/Mg b. Ca/Na c. Na/K d) Cl/Mg
4. Ca^{++} that is involved in the mechanism of blood clot formation found in
 a. ICF b. ECF c. Erythrocytes d) RBCs
5. Which of the following hormones pair act on Ca and PO_4 in bone?
 a. TSH/calcitonin b. TSH/calcitonin c. PTH/ADH d) PTH/calcitonin
6. Columns of Bertini are found in the renal
 a. cortex b. medulla c. pelvis d) corpuscles
7. JGA secretes renin that rises the renal blood pressure under the effect of
 a. vasopressin b. ADH c. both a & B d) non a & non b
8. Thymus is an organ that produces for the maturation of the immune cells.
 a. B-cells b. T-cells c. lymphocytes d) macrophages
9. Which of the following is characterized by the presence of Reed-Sternberg cells?
 a. melanoma b. leukemia c. NHL d) HL
10. The vital treatment that stimulates the patient's own immune cells is
 a. radiotherapy b. chemotherapy c. immunotherapy d) all of the above

II- Write short notes on only three of the following: (8 marks / each)

1. Role of hormones in electrolytes balance.
2. Acid-base balance mechanisms.
3. The kidney functions.
4. Different approaches of cancer immunotherapy.

III- Explain the physiological mechanism of only 2 of the following; illustrate your answer with a labeled diagram whenever possible: (8 marks / each)

1. The thirst sensation pathways for water acquisition.
2. The ability of the body to make a fluid maintenance.
3. Steps of the urine formation in the renal tubules.

Part Three (50 Points): Answer the following question:

I- Put (T) true or (F) false for the following statements and correct the false ones:

1. Plasma of human blood is devoid of coagulation factors.
2. Plasma proteins play an important role in tissue fluid exchange.
3. Platelets are present in peripheral blood in greater number than red cells.
4. Blood cholesterol found as lipoprotein compound.
5. Blood filtration occurs at venous capillaries when arterial pressure exceeds osmotic pressure.
6. Antibodies are manufactured from γ globulin that secreted by the liver.
7. Plasma cells, contain antibodies and developed from B lymphocytes.
8. The procoagulant thrombin has +ve feed back mechanism.
9. Leucocytes are nucleated biconcave disc in shape.
10. CO affect binding of CO_2 to Hb.
11. Mature reticulocyte contains both DNA and RNA in its content.
12. Iron deficiency anemia is a macrocytic normochromic anemia.
13. Production of RBCs is affected by testosterone.

- 14. Hb F has higher affinity and lower release of O₂ than Hb A.
- 15. Hb F is more effective for adult than Hb A.
- 16. Jaundice appear in newborns as a result of conversion of Hb A to Hb F.
- 17. Hb is an allosteric quaternary dimeric molecule.
- 18. The more break down of Hb the more production of conjugated bilirubin.
- 19. The more tissue hypoxia, the less EPO secretion from the liver.
- 20. Heme can carry O₂ and globin of the same molecule carry CO₂ simultaneously.
- 21. R form of Hb help binding O₂, while T form help release of it.
- 22. Eight salt bridges are found in the tout form of Hb.
- 23. R form of Hb found in tissue , T form found in lungs.
- 24. Iron of HB is in the ferrous state and in most food is in ferric state.
- 25. The absorbed iron is the major source of iron for heme synthesis.

II- : Select only one, which is more correct answer in the following:

- 1. RBCs percentage in the blood (hematocrit value) is:
 - a. 33%
 - b. 44%
 - c. 65%
 - d. 80%
- 2. WBCs in adult are synthesized in:
 - a. Liver
 - b. spleen
 - c. red bone marrow
 - d. lymph
- 3. Polycythemia is an increase in which of the following:
 - a. RBCs
 - b. WBCs
 - c. platelets
 - d. fibrinogen
- 4. Albumin is secreted from:
 - a. Kidney
 - b. liver
 - c. bone marrow
 - d. pituitary gland
- 5. Which of the following is considered a normal hemoglobin?
 - a. Carboxyhemoglobin
 - b. Deoxyhemoglobin
 - c. Methemoglobin
 - d. Hb S
- 6. Blood hemostasis carried on by use of :
 - a. Hb
 - b. RBCs
 - c. WBCs
 - d. Platelets
- 7. Break down of RBCs occur in:
 - a. Liver
 - b. Kidney
 - c. bone marrow
 - d. Muscles
- 8. Diapedesis is the movement of ----- through capillaries:
 - a. RBCs
 - b. WBCs
 - c. platelets
 - d. reticulocytes
- 9. Interstitial fluid doesn't contain:
 - a. RBCs
 - b. WBCs
 - c. platelets
 - d. reticulocytes
- 10. Carboxy Hb is the hemoglobin that carry :
 - a. O₂
 - b. CO
 - c. CO₂
 - d. both O₂ and CO₂
- 11. The anemia in which asparagine is converted to valine at 6th position of β chain is:
 - a. Iron deficiency anemia
 - b. α thalassemia
 - c. Sickle cell anemia
 - d. β thalassemia
- 12. The protein that carry O₂ in muscles is:
 - a. Oxy Hb
 - b. Deoxy Hb
 - c. carbamino Hb
 - d. Myoglobin
- 13. Which type of hemoglobin will developed when iron is changed from F⁺⁺ to F⁺⁺⁺:
 - a. Hb A
 - b. Hb F
 - c. Hb M
 - d. Hb S
- 14. Daily requirement of iron for adult male is:
 - a. 1 mg
 - b. 2 mg
 - c. 3 mg
 - d. 4 mg
- 15. The safe mode for iron intake is:

- a. Orally b. i.v. c. i.m d. i.p.
16. The iron can be primarily stored in liver as:
 a. Transferrin b. Ferritin c. hemosiderin d. free iron
17. Transferrin can carry ----- atom of iron:
 a. 2 b. 4 c. 6 d. 8
18. The requirement of iron for lactating mother / month is:
 a. 10 mg b. 20 mg c. 30 mg d. 40 mg
19. The interstitial fluid is the source of:
 a. Blood b. Plasma c. Lymph d. CSF
20. Platelets are directly developed from:
 a. Pluripotent stem cell b. normoblast c. Plasma cell
21. Where in the body is erythropoietin produced?
 a. Spleen b. Kidney c. liver d. Thyroid
22. Red blood cells survive around ____ days:
 a. 30 b. 60 c. 90 d. 120
23. Circulating mature RBCs lack:
 a. Nucleus b. Mitochondria c. all of them d. non of them
24. Each hemoglobin molecule has ____ heme group(s) and ____ globin molecule(s).
 a. 1,2 b. 1,4 c. 2,4 d. 4,2 e. 4,4
25. Repeated blood transfusion for some patients may resulted in:
 a. Hemosiderosis b. hemochromatosis c. liver iron overload d. none of all

Best wishes

Examiners	PR. YOSRY BOLKINY	DR. MOHAMED BASYONY	DR. MONA HEGAZI
-----------	-------------------	---------------------	-----------------



COURSE TITLE:	HISTOCHEMISTRY		COURSE CODE:ZO 4101
DATE:	17 - 3 - 2021	TERM: FIRST	TOTAL ASSESSMENT MARKS: 150 TIME AOWED: 2 HRS

I. Answer the following questions:

(75 Marks)

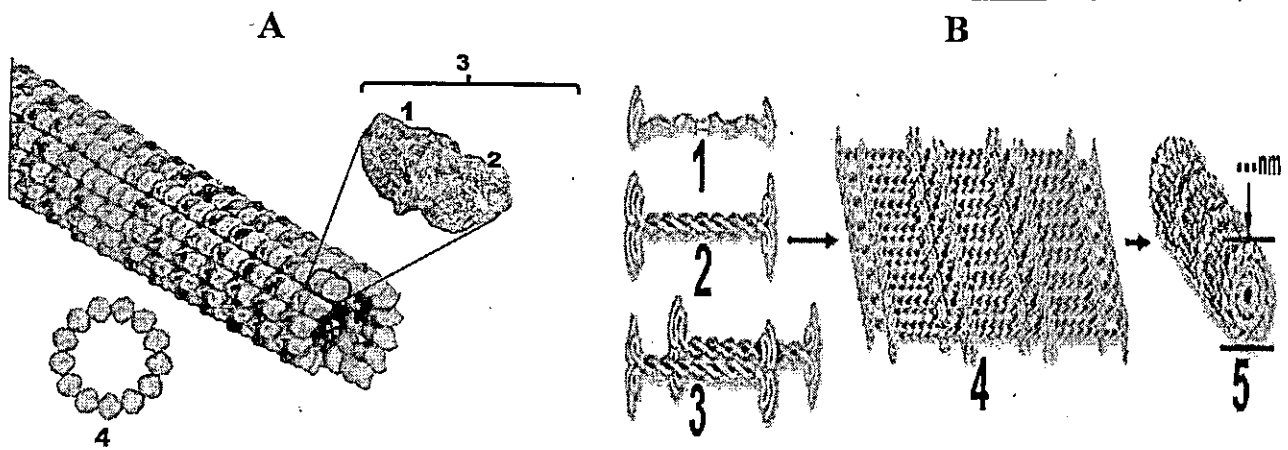
A) Answer the MCQs (30 Marks)

- 1- is important for polymerization of actin
a. Myosin b. ATP c. Spectrin d. Ankyrin
- 2- is needed to add on tubulin to the protofilament as a growing microtubule
a- GTP b- ATP c- ADP d- AMP
- 3- The functions of microtubules are
a-Formation of cilia and flagella of the cells b- Guiding movement of organelles
c- Separating chromosomes during the cell division
d- All of the above
- 4- Desmin is a type of:-
a. microfilaments b. microtubules c. intermediate filaments
- 5- Nuclear lamina can be demonstrated by:
a. azan b. orcein stain c. immunostain
- 6- All of the following are components of intermediate filaments EXCEPT
a. actin b. desmin c. vimentin d. cytokeratin
- 7- Where in a eukaryotic cell, can a microtubule NOT be found?
a. flagella b. mitotic spindle c. nucleus d. cilia
- 8- Collagen fibers would differentiate from other fibers by
a- azan b- silver stain c- orcein stain d- bromophenol blue
- 9- Microtubules are hollow tubes of protein monomers of tubulin polymerized together as
a- 17 Protofilaments b- 13 Protofilaments
c- 15 Protofilaments d- Microfilaments
- 10- In which oxidation of SH to form SS
a. Keratinization b. Cornification c. Hydrolysis
- 11- For a demonstration of the cytoskeleton; these methods are used EXCEPT
a. Azan stains b. Immunofluorescence
c. Electron microscope d. Immunohistochemistry
- 12- The most important motor proteins associated to microtubules are
a- spectrin b- dynein c- fibrin d- tropomyosin
- 13- In electron micrograph, a cross section of the sperm shows nine triplets of microtubules and two central singles. True or False
- 14- Tropomyosin stabilizes and stiffens the actin filament. True or False
- 15- α & β tubulin are associated to form a dimer and polymerization of them form protofilament in microtubules. True or False

B) Complete: (20 Marks)

- 1- Cytokeratin filaments can be illustrated bywhile keratin fibers can be shown byor
- 2- The accessory proteins bind with actin are
- 3- Intermediate filaments are type of& contain
- 4- Vimentin is a type of.....filament proteins and can be seen by.....
- 5- The basic amino acids are

C) Identify A & B with short comment and write the labeled structures: (25 Marks)



II. Answer the following questions:

(37.5 Marks)

1- Identify or explain only TEN of the following: (22.5 Marks)

- Putrefaction
- Boon's solution
- Basic dye
- Karyostat
- Allochromasia
- Autolysis
- Post fixation
- Formaldehyde
- Accentuators
- Natural dye
- C.T.
- Auxochrome

2- Explain in details, how can you prepare a tissue for examination under the light microscope? (15 Marks)

OR

Explain how to reconstruct the structure of a small gland using the histological technique.

III. Answer the following questions:

(37.5 Marks)

A) Draw tables and Compare between the following: (10.5 Marks)

- a- The differences between Histochemistry, Immunohistochemistry and Immunofluorescence regarding the following: 1) Principles, 2) Biological samples, 3) Type of Fixatives, 4) Hybridization or reactions 5) Visualization, 6) Applications.
- b- The generation of IHC labeling indexes during the three different IHC staining patterns.

B) Complete THREE ONLY of the following: (6 Marks)

- 1- In ploidy analysis, the amount of stain color developed is-----proportional to the ----- present in the stained cells.
- 2- The main distinction between ISH and IHC is that ISH uses----- but IHC localizes -----
- 3- Antigenic determinant, is part of an----- that is recognized by ----- or -----
- 4- The DNA probe is labeled with a ----- molecule. The molecule emits a ----- when viewed through a -----, ----- that is equipped with the appropriate -----
- 5- The emission of the dye ----- is around 500 nm when bound to ----- and is maximum at 461 nm when bound to ----- and gives ----- color.

C) Correct (✓) or Wrong (X), if wrong write down correct answer. (10 Marks)

- 1- Slides are put in phosphate buffer at heat induced epitope retrieval.
- 2- IHC is an *in situ* hybridization with haptenated probes.
- 3- 4',6-diamidino-2-phenylindole passes through membrane less efficiently in fixed cells.

- 4- Antigen retrieval is not specific to formalin fixed tissues, but is also used with other fixatives.
5- Antigenicity of IHC antibody is affected by fixatives.

D) MCQ. Choose only one answer from each question. (11 Marks)

- 1- When the probe and target DNA are denatured together. This is:
a) Digoxigenin-labeled probes hybridization b) Nucleic acid probe hybridization
c) Automated Nucleic acid hybridization d) In situ hybridization
- 2- Efficient absorbers of light and brilliant emitters of red fluorescence are:
a) Phycoerythrin b) Fluorescein c) Phycoerythrin d) All are correct
- 3- Whole chromosome paint is a type of:
a) FISH polyclonal antibody b) FISH centromere probe
c) FISH locus specific probes d) FISH digoxigenin probe
- 4- The FISH probe DNA is attached to the specimen DNA by:
a) Hybridization bond b) Covalent bond
c) Hydrogen bond d) Glycosylic bond
- 5- BrdU, PCNA, Ki-67 antigens are immunohistochemically stained to detect:
a) Cellular differentiation b) Cellular proliferation
c) Cell cycle d) Tumorigenesis

GOOD LUCK

EXAMINERS: Prof. Ahmed A. Massoud Prof. Nabila I. El- Desouki
Prof. Elsayed I. Salim



Tanta University
Faculty of Science
Department of Zoology



EXAMINATION FOR SUPERIORS (4th YEAR) STUDENTS OF
CHEMISTRY & ZOOLOGY

Course Title: Animal Techniques

Student No.: 44 (Forty four)

Course code: ZO4153

Date: 15th March, 2021

First Term

Total assessment marks: 100

Time allowed: 2 HOURS

Examiners: Prof. Randa El-Naggar and Assoc. Prof. Soha Gomaa

الامتحان في 3 ورقات

Question1 (40 Marks)

Answer only two questions:

A. Compare between the followings: (20 Marks)

- Antigen and antibody.
- AB and O blood types.
- Capture and detecting antibodies.
- B and T- Cells.

B. Complete the followings: (20 Marks)

- Blood type A can receive blood from blood type —, because —.
- Neutrophil are called — and —, because —.
- Thymus gland and bone marrow are called — immune organs, because —.
- Plasma cells are called —, because —.

C. Answer the followings: (20 Marks)

1. Identify:

- Lymphocytes
- Immune testing
- Memory cells
- ELISA

2. Explain an example for a typical immune response.

Question2 (60 marks)

A- Complete the missing parts with appropriate word(s)? (25 marks)

- Functions of polyclonal antibodies include a,— b,— and c,—.
- In hydridoma technology, addition of — leads to fusion of some B-lymphocytes with tumor cells to produce a hybrid cell (hybridoma).
- is an enzyme used to detach the cells from a culture dish, while — chelates calcium ions in the media that would normally inhibit trypsin.
- Cells in culture can be divided into three basic categories based on their morphology a,— b,— and c,—.
- are cell lines which have a limited life span and go through a limited number of cell generations.
- is a widely analytical method to resolve separate components of a protein mixture; however the transfer of proteins from the gel to a solid supporting membrane is —.
- is the prerequisite for western blotting.
- is used to visualize fluorescent markers of nucleic acids in gel electrophoresis.
- In gel electrophoresis, the relative mobility of individual molecules depends on a,— b,— c,— and d,—.
- In flow cytometer, FSC tends to be more sensitive to — however, — tends to be more sensitive to inclusions within cells.
- is a biochemical technique used mainly in immunology to detect the presence of antibody or antigen.
- Antibody titer is the concentration of antibody in serum and equals —.
- is a basic biotechnology technique that separates macromolecules according to their charge and size.
- A sample of protein is unfolded or denatured by boiling it in — and —.
- Visualization of proteins separated by SDS-PAGE is achieved by staining gels with a,— b,— and c,—.
- The Northern blot is used for transferring of —, but Western blot is used for transferring of —.
- SDS-PAGE apparatus is composed of a,— b,— c,— and d,—.
- is an anionic detergent which unfolded or denatured proteins overwhelming positive charges in them.
- The components of the flow cytometer include a,— b,— and c,—.

- 20) Data analysis blot types of flow cytometer include a,— b,— c,— and d,—.
- 21) In competitive ELISA, the higher the sample antigen concentration, — the eventual signal.
- 22) — is the gel in which proteins are resolved on the basis of their molecular weights.
- 23) Detection of proteins (0.1-1.0 ng) separated by SDS-PAGE is achieved by —.
- 24) — is a set of DNA fragments of known size that can be used to estimate size of unknown fragments.
- 25) — is changing microorganisms to make them less able to grow and diseases in their natural host.

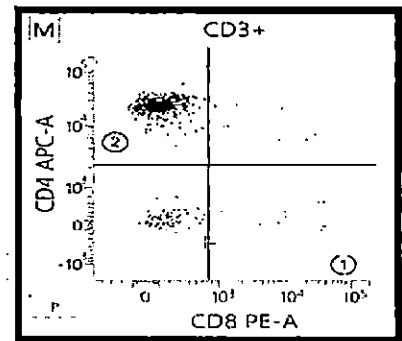
B- Decide whether the following statements are true or false and correct the wrong? (15 marks)

- 1) Cell viability is state when all available space of the culture vessel is covered due to cellular expansion.
- 2) Cell lines derived from blood are adherent in culture medium, however cells derived from solid tissue are free floating in culture medium.
- 3) Continuous cell lines are normal and mortal cell lines which divide only a limited number of times before losing their ability to proliferate.
- 4) In active immunization, individual acquires immunity through the transfer of antibodies formed by another host
- 5) Direct ELISA involves attachment of the capture antibody to a solid phase support.
- 6) Trypsinizing cells too long will increase cell viability.
- 7) Polyclonal antibodies were purified with ion exchange chromatography.
- 8) There are four types of blotting apparatus used to transfer proteins to solid supports.
- 9) There are three basic systems for growing cells in culture.
- 10) In electro-focusing electrophoresis, proteins remain folded in the native conformation and run on gels for separation.
- 11) Agarose is composed of long unbranched chains of uncharged proteins.
- 12) Trypan blue dye is impermeable to non-viable cells or dead cells, whereas it is permeable to viable cells.
- 13) When DNA stained with silver stain, the gel is viewed with UV-transilluminator.
- 14) Electrophoresis is laser based technology employed in cell counting, cell sorting and biomarker detection.
- 15) Cell culture is the removal of cells from an animal or plant and their subsequent growth in a favorable artificial environment.

C- Choose the best answer? (10 marks)

1. In gel electrophoresis, fragments are separated on the basis of __.
 - a. Size
 - b. charge
 - c. both a & b
 - d. none of them
2. Agarose gels are commonly used to sort __.
 - a. DNA
 - b. Protein
 - c. RNA
 - d. both a & c.
3. What is the purpose of adding trypsin to the cell layer?
 - a. Maintaining the appropriate pH level
 - b. Providing essential hormones and nutrients
 - c. Accelerating the cell growth
 - d. Dissociating the cell layer
4. Where the cells for cultivation are stored?
 - a. In a freezer
 - b. In a humidified incubator
 - c. In an incubator
 - d. In liquid nitrogen
5. What is the purpose of the complete growth medium in cell culturing?
 - a. Provide the essential nutrients
 - b. Regulate the environment
 - c. Provide growth factors for the cells to
 - d. All of the above
6. What is the purpose of the cryopreservation process?
 - a. The acceleration of cell growth
 - b. Revitalization of the cells
 - c. Preservation and storage of the cells
 - d. All of the above
7. In __, the individual administered a vaccine so that he actively mounts a protective immune response.
 - a. Active immunization
 - b. Passive immunization
 - c. Attenuated vaccine

8. — are derived from a single cell clone and directed to single epitope of single antigen.
 a. Monoclonal antibodies b. Polyclonal antibodies c. Polyclonal antiserum d. Hybridomas
9. — is the transfer of proteins from the SDS-PAGE gel to a solid supporting membrane.
 a. Western blotting b. Northern blotting c. Southern blotting
10. Polyclonal antibodies purified with —.
 a. Affinity chromatography b. Size exclusion chromatography c. Electrophoresis
11. Plotting a semi-logarithmic graph of the rate of cell proliferation over time produces —.
 a. log phase b. Contact inhibition c. Growth curve
12. In gel electrophoresis, the fragments at the lower end of gel are —.
 a. larger, and move slower c. larger, and move faster
 b. smaller, and move faster d. smaller, and move slower
13. Which part of the cytometer consists of the excitation sources and detectors?
 a. Optics b. Fluidics c. Electronics
14. What does light emitted as side scatter (SSC) measure?
 a. Cell granularity / complexity b. Cell size c. Cell surface marker fluorescence
15. Detection of proteins (limited to ~100 ng) separated by SDS-PAGE is achieved by —.
 a. Silver stain b. Metal ions c. Coomassie brilliant blue stain
16. In ELISA, all free binding sites are blocked using a buffer containing unrelated proteins in — step.
 a. Blocking b. Washing c. Detection d. Coating
17. Which part of the cytometer converts light signals to voltage so it can be interpreted through a computer software?
 a. Electronics b. Optics c. Fluidics
18. By using appropriate antibody panels, flow cytometry can reveal —.
 a. Cell type b. Cell lineage c. Cell maturation stage d. All of them
19. Buffers in gel electrophoresis are used to —.
 a. Provide ions that carry a current b. Maintain the pH at a relatively constant value c. Both a and b
20. CD4⁺CD8⁻ cells are displayed in — quadrant, however CD4⁻CD8⁺ cells are displayed in — quadrant.
 a. the top left, lower right c. the lower right, lower left
 b. the lower left, lower right d. the top left, top right



D- Write short notes on the followings? (10 marks)

- 1) Difference between polyclonal antibodies & Monoclonal Antibodies
- 2) Classification of chromatography

Best wishes from The Examiners



COURSE TITLE:	HISTOPATHOLOGY		COURSE CODE:4113
DATE: MARCH, 2021	SEMESTER: FIRST	TOTAL ASSESSMENT MARKS: 100	TIME ALLOWED: 2 HOURS

الامتحان ورقم

I- Answer the following points: (50 Marks)

A- Write complete account on only two of the following(10 marks)

- 1- Inflammatory cytokines
- 2- Process of acute inflammation
- 3- The difference between acute and chronic inflammation.

B- Complete the following (25 marks)

1. Hyperaemia means..... and it explains classic signs of and
2. The purpose of inflammation is to
3. Activated complement system creates many chemical reaction that promotes.....processes and produces the
4. Most PAMPs that bind to endocytic PRRs and initiate phagocytosis are cell wall components including.....
5. Neutrophils migrate from blood vessels to the infected tissue via.....
6. Exudation means.....
7. Thrombin is..... mediator which cleaves the soluble plasma protein..... to produce insoluble.....
8.marks the invaders as target for phagocytosis. Give example
9. Phagocytosis process include the following steps.....
10. Macrophages are classified according to their location in the body into.....

C- Choose the correct answer (10 marks)

1- Bradykinin is:

- a. A vasoactive protein
- b. Able to induce vasodilation
- c. Able to increase vascular permeability
- d. Induce pain

انظر حله

2- Macrophage that encourage inflammation are called

- a. M1 macrophages
- b. M2 macrophages
- c. Promote atherosclerosis by inflammation
- d. Killer macrophages

3- Histamine is:

- a. A vasoactive amine
- b. Produced from mast cells and basophils
- c. Causing arteriole dilation
- d. Increasing venous permeability

4- Macrophages are:

- a. Versatile cells that play many roles.
- b. Each one have specific markers.
- c. Part of the mononuclear phagocyte system
- d. Formed through the differentiation of monocytes

5 - Interleukin-1(IL-1) is:

- a. Producing by macrophages
- b. Cytokines
- c. Serving to activate T- lymphocytes
- d. Causing vasodilation

D- Put true or false and correct the false in your answer sheet (5 marks)

- 1- Rouleaux of RBCs facilitate the movement of neutrophils in the blood vessels during inflammatory response.
- 2- Microbial infection may cause both acute and chronic inflammation
- 3- The kinin system acts to counterbalance clotting.
- 4- Eosinophils are highly specified on removal of dead cell and cellular debris
- 5- Inflammatory mediators are short lived and quickly degraded in the tissue.

Best wishes

Examiner : Prof Ahlam Abou Shafey

أنظر بعده

Answer the following**Q2-A:****(20 marks)****Give (very brief) scientific reason for the following:**

- 1- Teratoma is made up of several different types of tissue, such as hair, muscle, or bone.
- 2- Severity of dysplasia refers to recognizable histopathologic changes in cells.
- 3- Differentiation often provides evidences to the clinical aggressiveness degree of the tumor.
- 4- Cancer cells are heterogenous.
- 5- Change of esophageal squamous mucosa to gastric type.
- 6- Malignant tumors are considered parasitic.
- 7- Smooth muscle tumor of uterus compresses normal tissues and distorts uterine cavity.
- 8- Early HPV proteins cause histopathologic change leading to uterine cancer.
- 9- Cellular initiation by a carcinogen may lead to a malignant tumor.
- 10- Although carcinoma *in situ* is small and remains on the same height of the mucosal epithelium, it is considered malignant.

Q2-B:**Correct (✓) or Wrong (✗), if wrong write down correct answer****(10 marks)**

- 1) Stroma are the tumor epithelial cells in organs.
- 2) Prostatectomy scars are the formation of fibrous tissue in bone.
- 3) Metaplasia are changes from one type of undifferentiated tissue to another.
- 4) Myelodysplastic syndrome is a dysplasia of blood cells.
- 5) Poikilocytosis differs from anisocytosis by the grade of tumor aggressiveness.
- 6) Ductal papilloma of breast is epithelial in origin.
- 7) Metaplasia is seen only in the lining epithelia (mucosa) of an organ.
- 8) A colon tumor is considered a dysplastic polyp when it has a cryptal atypia and invasion to the lower layers.
- 9) Methylene blue stain distinguishes tumor ACF in human colon.
- 10) Malignant tumors of melanocytes are nevus and melanoma.

Notice: If wrong, write down a correct answer. (equals half a mark each).

Q2-C: Complete the following: (20 marks)

- 1- Neoplasm is an abnormal ----- of ----- which, if it forms a -----, is referred to as a -----.
- 2- Neoplasm's definition revolves between ----- of cells with specific mutations and excessive and ----- of cells, at the expense of -----.
- 3- ----- occurs in tissues where proliferation is at low cell turn over, while ----- is seen especially following tissue damage. The increase in the parenchymal cell mass is due to ----- or -----.
- 4- In skin papilloma the surface cells are ----- and proliferation is confined to the ----- with typical examples are the -----.
- 5- Histopathological biomarkers such as ----- and ----- in colon of animals could be induced by ----- and ----- and others.
- 6- ----- is a neoplasm of the adnexa of the skin, with appearance similar to ----- . It shows a remarkable uniformity in -----, ----- and nuclear configuration.
- 7- Squamous metaplasia in bile duct replaces the ----- with -----, while in respiratory epithelium it replaces ----- with -----.
- 8- Cancer cells transfer via lymphatics, -----, -----, ----- to set up -----.
- 9- Signet ring cell carcinoma is characterized by severe -----, which result from the formation of large ----- full of ----- that displace the ----- to the cell's periphery.
- 10- The tumor is classified according to its ----- anatomy and ----- . Two main groups are recognized: ----- or -----.

End

*Kind Wishes
Prof. Elsayed J. Salim*



TANTA UNIVERSITY
FACULTY OF SCIENCE
DEPARTMENT OF ZOOLOGY

FINAL EXAMINATION FOR LEVEL FOUR CHEMISTRY / ZOOLOGY STUDENTS

COURSE TITLE: HISTOCHEMISTRY COURSE CODE:4141

DATE: 27 FEB 2021 SEMESTER: FIRST TOTAL ASSESSMENT MARKS: 100 TIME ALLOWED: 2 HOURS

Question No. 1: Answer the following questions: (50 Marks)

Q1-A: Write a histochemical account on two only: (10 Marks)

- 1- The cholesterol esters and their significances in the body tissues.
- 2- Destruction of the hemoglobin molecules either normally and pathologically in the tissues.
- 3- The hyaluronic acid and its significances in the body tissues.

Q1-B: Complete the following: (20 Marks)

- 1- Glycogen content in the body tissues is affected by
- 2- Ascorbic acid play important role in,, while heparin play as.....
- 3- The functions of fats or triglycerides in animal tissue include,,,
- 4- Phospholipids include.....,.....,.....,..... some of them are insoluble in acetone such as,
- 5- Sphingolipids comprise,.....,.....,..... that are similar in and differ in
- 6- The haematogenous pigments include,.....,.....,..... most of them formed normally except that is formed only in pathological state.
- 7- Globin part of heamoglobin molecules helps in,.....,.....
- 8- Specificity of staining methods for carbohydrates demonstration is improved by and Give example for each.
- 9-stain has a strong affinity for acid mucopolysaccharides and givecolor. The method depend on&.... while is a good method for differentiate between acid and neutral mucopolysaccharides.
- 10- Most methods for lipids demonstration are restricted to frozen section because and.....

Q1-C: Choose the correct answer(s) (15 marks)

1- Chitin is:

- a) A type of acid mucopolysaccharides
- b) Insoluble in organic materials
- c) Occurs in the exoskeleton of insects and arthropods
- d) A type of neutral mucopolysaccharides

2- Chondroitin sulphate is :

- a) Components of mammalian connective tissues
- b) Serves as matrix for the bone formation
- c) A type of complex acid mucopolysaccharides
- d) A blood anticoagulant material

انظر خلفه

3- Lecithin is:

- a) Soluble in all the fat solvents
- b) Play important role in the fat metabolism in the liver
- c) A type of neutral phospholipids
- d) Hygroscopic

4- Sudan black B dye is:

- a) Fat soluble dye
- b) A metachromatic stain
- c) Not recommended for the neutral fats
- d) Decompose in acids solution below PH. 4

5- Ascorbic acid is:

- a) A complex polysaccharides
- b) Exists mainly in cell of the adrenal gland
- c) Its deficiency causes Wilson disease
- d) Maintains optimal oxidation-reduction potential

6- Hematoidin are:

- a) Occurring in a variety of forms and coloration
- b) Identical to bilirubin
- c) Located in the liver and sites of old hemorrhage
- d) Demonstrated by Gmelin method

7- Hemofuscin is :

- a) Stains intensely with basic dye
- b) Occurs in the liver with hemosiderin in case of hemochromatosis
- c) Light brown to yellow pigments
- d) Soluble in hydrogen peroxide

Q1-D: Put true (V) or false (X) beside each statement and correct the false one (5marks)

- 1- Acid mucopolysaccharides are components of all epithelial mucins of the alimentary canal
- 2- Simple lipid are not important dietary constituents.
- 3- Hemosiderin is formed and deposited within the phagocytes as golden brown granules or inclusion bodies (). Mention in which organs tissue.
- 4- Solubility and extractions, examination with polarized light and reduction of osmium tetroxide are techniques used to differentiate the lipids from other substances (). Give examples.
- 5- Blocking and enzymes digestion techniques are used to confirm and improve the specificity of histochemical stain reactions (). Give example.

Best wishes

Examiner: Prof. Ahlam Abou Shafey

انظر بعده

Question No. 2:

(1 hour)

(50 Marks)

Answer the following

Q2-A:

(15 marks)

1- Answer Only One of (1):

Write on the principles and applications of DNA ploidy analysis.

OR

Compare between direct and indirect immunofluorescence.

2- Explain in details the generation of IHC Labeling Indexes (LI%) during only the nuclear IHC immunostaining pattern.

Q2-B: Complete the following:

(15 marks)

- 1- Nucleic acids in histochemistry are demonstrated by decomposing----- with -----.
- 2- ----- results from fixation of PO_4 with ammonium molybdate. This will reduce ----- to form blue color indicating organic phosphate.
- 3- Nucleic acid ----- is the formation of a duplex between two -----.
- 4- In nick translation, ----- is used to replace some of the ----- of a DNA sequence with their labeled analogues.
- 5- Probe is a nucleic acid that can be labeled with a ----- which allows identification and -----.

Q2-C: Correct (✓) or Wrong (✗), if wrong write down correct answer.

(10 marks)

- 1- Phosphoric acid reaction occurs when nuclei stain with basic dyes.
- 2- 3,3'-Diaminobenzidine could not be used with counterstaining.
- 3- Direct IF is brighter than the indirect test.
- 4- The epitope is the antigen-binding site of an antibody.
- 5- Monoclonal antibodies in IHC bind to the same epitope.

انظر خلفه


Q2-D: MCQ. Choose only one answer from each question (10 marks)

- 1- Histochemical reactions demonstrate the presence of chromatin, nucleoli and RNA within the cell:
 - a) Organic phosphate detection
 - b) Carbohydrate detection
 - c) Pyrimidine and purine bases detection
 - d) Pentose sugar rings Detection
- 2- A macromolecule, often a peptide, which mimics the structure of epitope is:
 - a) Monoclonal artificial epitope
 - b) Polyclonal artificial epitope
 - c) a + b
 - d) None is correct
- 3- p53, c-myc, c-fos, APC antigens are immunohistochemically stained to detect:
 - a) Cellular differentiation
 - b) Cellular proliferation
 - c) Cell cycle
 - d) Tumorigenesis
- 4- A fluorescent stain binds strongly to A-T rich regions in DNA:
 - a) FITC
 - b) DAPI
 - c) Rhodamine
 - d) Acridine orange
- 5- Choose the correct order of the following hybridization steps between target DNA and probe: 1-Annealing 2-Denaturation 3-DNA isolation 4- Labelling probe with fluorescent dye.
 - a) 2,3,4,1
 - b) 4,2,3,1
 - c) 3,4,2,1
 - d) 1,3,4,2

انتهى

Good Luck

Examiner: Prof. Elsayed I. Salim

 1969	Tanta University Faculty of Science, Zoology Department		
	Final Exam. For Seniors (4th year) students of Special Zoology		
	Course title:	Environmental Pollution	Course code: ZO 4115
Date: 15 / 3 / 2021	Semester: First	Total assessment marks: 100	Time allowed: 2 hours

Answer the following questions, please:

الامتحان مكون من صفتين

Question (I):

(40 marks)

- 1- Write short notes on the following:– Eutrophication - biomagnification – BOD. (6 M)
- 2- Write on fate and transport of cadmium compounds in air, water and soil? (6 M)
- 3- Write on two sources of radiation pollution? Mention its effect on human body? (7 M)
- 4- Draw oxygen sag curve and explain it. (7 M)
- 5- Write on major categories of water pollutants. (7 M)
- 6- Define ERA and what kinds of Environmental risk assessment? (7 M)

Question (II): Choose the correct answer.

(10 marks, 1 marks for each)

- 1 - Oxygen in water is consumed during aerobic biodegradation of organic compounds.
 - a) true
 - b) false
- 2- What is the word that means "made dirty or unsafe"?
 - a) source
 - b) runoff
 - c) contaminated
 - d) pesticides
- 3- What minerals are found in the run-off from agricultural land and treated and untreated sewage effluents, which are highly responsible for eutrophication of water bodies?
 - a) Phosphorous and carbon
 - b) Nitrogen and phosphorus
 - c) Potassium and arsenic
 - d) Iron and manganese
- 4- A lake that is oligotrophic has
 - a) many organisms.
 - b) high nutrient levels.
 - c) high biological productivity.
 - d) low biological productivity.
- 5- When the BOD of waste water increase, then
 - a) Rate of reaeration decreases
 - b) Rate of oxygen deficit increases
 - c) Rate of oxygen deficit decreases
 - d) Amount of oxygen in wastewater increases
- 6- You find the following organisms on a stream bottom: mayfly larvae, stonefly, and caddisfly larvae. What is the quality of the water?

clean water severely damaged very cloudy greenish
- 7- Which of the following is a source of ionizing radiation?
 - a) Ultraviolet light
 - b) Infrared light
 - c) β - radiations
 - d) All of the above are ionizing radiation
- 8- Mechanical cleanup methods of oil:
 - a) The oil from an oil tanker.
 - b) Coagulants and dispersing agents
 - c) Skimmers and blotters.
 - d) Addition of special compound.
- 9- Secondary sewage treatment can best be described as a process
 - a) Chemical
 - b) Biological
 - c) Geological
 - d) Mechanical
- 10- The biological damage caused by the radiation depends upon
 - a) the time of exposure
 - b) the intensity of radiation

c) the type of ionizing radiation (i.e. its penetration power)

d) all of them

Question III)

Identify the following terms:

(20 marks)

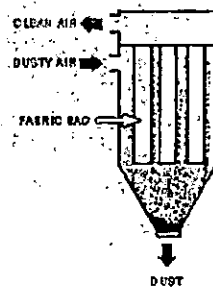
Biological magnification	PAN	Cyclone separator	mesosphere
Pyrolysis	Composting	Smog	CFCs
PM	Environmental degradation	CO	

Question IV) (Total 30 marks)

1. To reduce emissions, the Arab Republic of Egypt adopted many policies focusing on energy sectors Production and consumption as the most emitting sectors. Illustrate in points. **(10 marks)**

2. **Write short notes on:** **(10 marks)**

- Acid rain (formation, causes and impacts)
- Identify this device, uses and measurement way?



3. Complete the following table from A to E:

(10 marks)

Air Quality Index Levels of Health Concern	Numerical Value	Colour	Meaning
(A)	101 to 150	Orange	(B)
Unhealthy	(C)	Red	Everyone may begin to experience health effects; members of sensitive groups may experience more serious health effects.
Hazardous	(D)	Maroon	(E)

With our Best Wishes



TANTA UNIVERSITY
FACULTY OF SCIENCE
ZOOLOGY DEPARTMENT

First term Examination For The 4th Year Students Of special zoology

Course title:

Biodiversity and Conservation

Course code: ZO 4111

Date: 6/3/2021

First term exam.

Degree: 100 marks

Time allowed: 2 Hours

Answer all the following questions:

I) Choose the correct answer:(20 marks)

1. Which diversity is determined by various species of a given area?
(A) Genetic diversity (B) Species diversity (C) Ecological diversity (D) All given
2. Alien species invasions cause.....
(A) Flourishing of native species (B) Dispersion of pathogens (C) Disappearance of native species (D) ecosystem destruction.
3. One of ecosystem services rendered by the natural ecosystem is.....
(A) Crop pollination (B) Aesthetic and spiritual values (C) Water and air purification (D) All given.
4. Wild plant gene pool provides.....
(A) Disease resistance (B) Improved productivity (C) Tolerance of environmental conditions (D) All given.
5. In particular antibiotics, are derived from
(A) Native plants (B) wild animals (C) Microorganisms (D) Chemical structures.
6. When mangrove areas are cleared, populations of commercial fish species which rely on it.....
(A) Increase (B) Diminish (C) Protect (D) Recognized for fish capture.
- 7.....of microorganisms promises of further advances in the production of new compounds.
(A) Antibiotics (B) Conservation (C) Genetic engineering (D) Counting.
8. A direct driver influences.....
(A) Ecosystem processes (B) Pollution (C) Climate change (D) Invasive species.
- 9..... is projected to increasingly affect all aspects of biodiversity.
(A) Climate change (B) Population (C) Ecosystem (D) Pollution.
10. Isolated patches of habitatmuch more rapidly than large areas.
(A) Gain species (B) Island biogeography (C) Loss edge (D) Lose specie

II). Write [T] or [F]+ the correction of false statements only in your answer sheet(15 marks).

1. Global population was stable in the past 40 years reaching 6 billion in year 2000.
2. Generally increasing the demand for food and energy leads to increasing the activity of ecosystem.

انظر باقي الاسئلة في الصفحة التالية

3. The development and diffusion of scientific knowledge and technologies allow for increasing efficiency in resource use.
4. Conservation of natural vegetation for agriculture leads to habitat fragmentation.
5. The climate along the edge of fragment is favorable to attract different species.
6. Temperate forests are very important because they harbor at least 50% of world diversity.
7. Deforestation and forest degradation are currently more extensive in the wetlands than in the rest of the world.
8. The beneficial effects of the introduction of nutrients to the ecosystem is the further increase of crop yield.
9. In fresh water habitat, fishing is the second leading cause of species extinction.
10. Organisms existence depends heavily on primary consumer mainly gene plants.

III) Answer the following questions: (15 marks)

(A) Briefly mention about:

1. Socio-political drivers. (3marks)
2. Alien species invasion. (3marks)
3. The benefits of wild plant gene pool to the biodiversity conservation.(3marks)
4. Breeding stock and population reservoirs.(6marks)

IV) Answer the following questions: (50 marks)

1. Identify each of following terms:(20 marks)
 - a. Ecosystem
 - b. Biological indicator
 - c. Paper park
 - d. Ecotourism
 - e. Conservation plan
2. What are benefits of protectorates for human and biodiversity?
(15 marks)
3. From your previous and present studies suggest a new protectorate in Egypt with full explanation of causes and benefits. (15 marks)

With our Best Wishes

EXAMINERS:	Prof.Dr. / Ensaf El-Gayar	Dr./Ahmed Abossery
------------	---------------------------	--------------------



TANTA UNIVERSITY -FACULTY OF SCIENCE
DEPARTMENT OF ZOOLOGY

FINAL EXAM FOR 4TH LEVEL, SENIOR'S STUDENTS, OF CHEMISTRY/ZOOLOGY

COURSE TITLE:

FIELD TRIPS

COURSE CODE: ZO 4149

DATE: 1, MARCH, 2021

TERM: FIRST

TOTAL ASSESSMENT MARKS: 100

TIME ALLOWED: 2 HOURS

Answer the following questions:

Q1. A. Discuss the difference in ecosystem concept before and after Convention on the Biological Diversity, 1992. [10 marks]

Q1. B. Write short notes on the following: [25 marks]

1. Types of Ecological pyramids
2. Types of deserts.
3. Abiotic sampling of streams
5. Nature conservation reserves
4. World heritage sites

Q2. A. Only with fully labelled diagram explain different zones of Intertidal Habitats. [10 marks]

Q2. B. There are many general Biological, physical and environmental hazards that exist in nearly every location worldwide. Explain briefly how you can avoid the following hazards.

1. Dehydration
2. Sunburn and heat exhaustion
3. High Altitude illness
4. Snakes
5. Jelly fishes

[20 marks]

Q3. Write short notes on the following: [15 marks]

1. The Properties of measurement Scales.
2. Advantages and Disadvantages of random Sampling.
3. Qualitative data & Quantitative data.

Q4. A. Complete the following sentences [10 marks]

1. Shannon-Wiener index (H). is calculated as....., its Evenness J =
2. Data involves a sequence of data points, measured at successive times.
3. Data in which the observations can take only one of two values.
4. Density =
5. Relative abundance=

Q4. B. Put [T] for true statements and [F] for false statements. Correct the false one. [10 marks]

1. Species richness is the number of individuals found in the samples. []
2. Systematic sampling is the least biased of all sampling techniques. []
3. The ratio scale has equal intervals between adjacent categories, but do not have a true zero point []
4. Dependent variable presumed to covary in a meaningful way. []
5. Randomization in sampling design aims to obtaining an unbiased sample. []

🙏 End of Exam 🙏 Best Wishes 🙏 Please Smile 😊

Examiners

Dr. Ahmed M. El-Bossery

Dr. Mohamed F. Ageba



Part 1: Integumentary System:

(75 Marks)

First question: Compare with drawing between (30 marks)

- claw, nail and hoof then mention their origins
- scales types then mention their origins

Second question: "Contour feather is developed from down feather".
Explain with drawing how this process occurs (25 Marks)

Third Questions: Demonstrate with drawing the developmental stages of the placoid scale then mention its origin. (20 Marks)

Part 2: The skeletal System:

(75 Marks)

First question :- (30 Marks)

By drawing explain the development of chondrocranium?

Second question: (25 Marks)

Mention briefly the characterizes differentiates the skull of actinopterygii

Third question: (20 Marks)

Identify: - replacing bone- membrane bone- calcified cartilage?

- give the scientific name ?

The skull which articulate with the atlas vertebrae by two occipital condyle one on each exoccipital?

Best wishes

Prof. Dr. Atteyat selim - Prof. Dr. Abeer Alum Eldeen