Tanta University, Faculty of Science, Department of Botany			
Final Examination for (First level) Students of Biology			
COURSE TITLE: General Botany (1)			COURSE CODE: BO 1101
DATE: JANUARY, 2023	TERM: FIRST	TOTAL ASSESSMET MARKS: 150	TIME ALLOWED: 2HOURS

First question: Choose the correct answer **(In the bubble sheet)** **(50 Marks, 2 each)**

1. The mesophyll tissue in leaves can be distinguished as..... tissue.
   A. parenchyma B. ground C. chlorenchyma D. all
2. The collenchyma is specialized for .....
   A. food storage B. gas-exchange C. elastic support D. secretion
3. ..... is a non-pigmented plastid and characterized for nutrients storage.
   A. chromoplast B. chloroplast C. microplast D. leucoplast
4. The plant primary cell wall is ..... and deposited on both sides of the middle lamella.
   A. rigid B. elastic C. lignified D. all
5. ..... is considered as protoplasmic living cell content.
   A. nucleus B. cell wall C. starch grains D. mineral crystals
6. ..... are series of elongated cells forming tube-like structures with lignified cell walls.
   A. xylem vessels B. tracheids C. astrosclerids D. both A and B
7. Vacuoles are cavities in the cytoplasm, surrounded by a membrane known as .....
   A. tonoplast B. amyloplast C. nuclear membrane D. none
8. ..... is cytoplasmic strands pass through cells to connect the neighboring protoplasms.
   A. pit B. plasmodesmata C. stomata D. cell wall
9. The ..... cells usually store food and metabolites in phloem tissue.
   A. phloem parenchyma B. companion cells C. sieve tube D. all
10. In monocot stem, the hypodermis lies below the epidermis consists of few layers of.....
    A. sclerenchyma fibers B. collenchyma C. parenchyma D. meristem
11. The leaf epidermal tissue system comprises .....
    A. collenchyma B. stomata C. tracheids D. all
12. The cells of meristematic tissue are characterized by .....
    A. large nuclei B. dense cytoplasm C. thin walls D. all
13. Parenchyma is permanent tissue that share in all the following functions except .....
    A. food storage B. gas-exchange C. support D. photosynthesis
14. The compound xylem and phloem tissues constitute the continuous .....tissue system.
    A. epidermal B. ground C. vascular D. meristematic
15. The main role of xylary fibers and sclerides is providing .....
    A. support B. protection C. strength D. all

16. The embryonic axis below the point of attachment of the cotyledon.....

A. Epicotyl B. Hypocotyl C. Plumule D. root

17. It is a modified subterranean stem that is usually found underground and divided into nodes and internodes often give adventitious roots and shoots from its nodes

A. Rhizome B. tubers C. bulbs D. corms

18. It is a weak stem that form tendril to expose its leaves to the sun.....

A. Twining stem B. climbing stem C. running stem D. creeping stem

19. It is a stem which transformed into a leaf like structure, become flattened and rich with chloroplast

A. Succulent stem B. spiny stem C. leafy stem D. storage stems

20. The stem that is able to carry its branches, leaves, fruits upwardly according to it has strong mechanical tissues

A. Prostrate stem B- erect stem C- twining stem D- climbing stem

21. The leaf base, which is board and surround the dwarf stem.....

A. Normal B. short sheathed C. long sheathed D. pulvinus

22. This is the largest, most important, green and dorsi-ventrally flattened part of the plant

A. Leaf petiole B. leaf margin C. leaf stipules D. leaf blade

23. Compound pinnate leaflets that are arranged on both lateral sides of the midrib like a feather and terminated with only one leaf

A. Paripinnate B. imparipinnate C. trifoliate D. compound palmate

24. The type of leaf blade which is divided into portion having a large terminal lobe and the other lobes decrease gradually towards the base

A. Lyrate lobed B. pinnately lobed C. palmately lobed D. compound blade

25. Adventitious roots are developing from

A. Radicle B. seed C. stems D. hypocotyl

Second question: Mark the letter (T) for true sentences and the letter (F) for false sentences.

In your bubble sheet (75 Marks, 1.5 each)

1- Intercalary meristems are parallel to the plant long axis to increase the plant thickness.
2- In the dicot stem, the open collateral vascular bundles arranged in a ring arrangement.
3- The living cell contents are stored as food or waste compounds as starch grains.
4- Osteosclerides consist of same cell type and considered as simple permanent tissue.
5- Pits are definite pores left without deposition of cell wall components.
6- Parenchyma, collenchyma and sclerenchyma share the main functions.
7- Epidermal cells usually have many intercellular spaces and not tightly-packed.
8- The motor cells are located in the dicot leaf epidermal tissue system.
9- The palisade and spongy tissues represent the ground tissue of in dicot and monocot leaves.
10- The secondary cell wall is not rigid and deposited on the primary wall after cell division.
11- Xylary and extraxylary fibers and sclerids have dead sclerenchyma cells.
12- Calcium oxalate crystals aggregated within vacuoles of cells in stare or needle-shapes.
13- The vascular bundle type depends on the arrangement of xylem and phloem.

14- The transverse walls of sieve tubes are perforated forming sieve plates.
15- Passage cells are the endodermis cells that left without suberin depositions in front of phloem to allow the water passage inside it.
16- Phloem fibers are sclerenchyma cells and specialized for support with thick walls.
17- The parenchyma pith cells may be few or absent in dicot stems and share in food storage.
18- The cytoplasmic strands that transport materials and link neighboring protoplasm are called plasmodesmata.
19- The type of fibers depends on their presence beside or away from the phloem tissue.
20- Photosynthesis occurs mainly in parenchyma cells of vascular tissue.
21- The closed collateral bundles are surrounded by a sheath of sclerenchyma fibers in monocot stems and leaves
22- The middle lamella is the first layer of the cell wall formed in the newborn cells.
23- Unicellular root hairs are covered with cuticle to help in gas exchange and water absorption.
24- Sclerenchyma tissues carry out most of metabolic functions in plant body.
25- The stomatal pore is surrounded kidney shaped guard cells in dicot leaves.
26- The transport function of sieve tubes is controlled by the companion cells in phloem.
27- The ground tissue in dicot and monocot leaves is usually called mesophyll tissue
28- The cell wall of conducting elements of xylem has the same pattern of spiral lignification.
29- A suberized layer of exodermis is present below the epidermis in monocot roots.
30- All tissues except epidermis and vascular constitute the ground tissue.
31- Reticulate venation is a type of venation is restricted to the monocot plant
32- Cauline is a type of leaves arrangement whereas three or more leaves arise from the same node
33- Compound leaves are those in which the leaf blade is divided into number of leaflets
34- Prophylls leaves are the first green leaves in the hypogeal germination
35- Leaves are provided with veins that help in conduction of food, water and minerals
36- In case of radical arrangement, the leaves arise from the root
37- Winter buds are composed of small leaves covered with scaly leaves
38- Creeping stems give adventitious roots from nodes near the soil
39- Root system is negatively geotropic and positively phototropic
40- Shoot system is positively hydrotropic and negatively phototropic
41- Mixed buds develop into branches carrying leaves only
42- The leaf petiole is a part of leaf connecting the leaf blade to the stem
43- Fibrous roots are threads like a root and develop from internodes of stem
44- Plumule is considered the first bud of the seed
45- Adventitious buds are located at the apex of stem they responsible for the elongation of plant
46- the lateral bud elongation occurs by activity of the terminal bud of the lateral branch
47- woody stems usually live for short period for one season with soft, green and few mechanical support
48- Tubers are subterranean swollen stem differentiated to nodes and internodes
49- The green color of the leaf is due to the presence of carotenoids pigment
50- Leaves that possess petiole are called sessile and leaves without petiole are called petiolate

Third question:

A- Write the scientific term for each of the following:- (15 Marks, 1.5 each)

1. Is a mature fertilized ovule formed after fertilization with a pollen grain ( )
2. Type of the germination where the cotyledons are pushed above the ground ( )
3. Roots that develop from any other part other than the radicle ( )
4. Type of roots are formed from the lower nodes of the stem near the soil surface as secondary growth root ( )
5. Roots arise on the shoots to absorb water vapor from air and not differentiated into primary root or secondary roots ( )
6. Stems that not able to grow in erect position without support due to the absence of sufficient mechanical tissues ( )
7. Type of buds that are located on sides or above the lateral bud ( )
8. The type of stem branching where apical bud modified into permanent organ and the plant complete its growth from the lateral bud ( )
9. Stems are located under the ground to perform additional function such as storage ( )
10. Pair of appendages that may grow around the leaf base ( )

B- Write notes on the following: - (10 Marks, 5 each)

1- The modification of leaves

2- Prostrate stems

Best wishes

Examiners:	Dr/ Gehad Abd-Allah Ragab	Dr./ Walaa Abd-Elmaged

TANTA UNIVERSITY - FACULTY OF SCIENCE- CHEMISTRY DEPARTMENT

General Chemistry I Final exam for the First-year students **(Geology Section)**

Course No. : CH1101 Date:01 January 2023

Time allowed: Two hours Total marks: 150

هذا الإمتحان مكون من جزئين (PART I & PART II) موزعه على ستة صفحات على النحو التالي:.

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PART I: Choose the correct answer ***(120 marks, 4 marks each)***

إختر الإجابة الصحيحة في كل سؤال ثم حدد الإجابات الصحيحة في **Bubble Sheet** المرفق

1. Which of the following atomic symbols and names is correct?
   A. Phosphorous, P
   B. Cobalt, CO
   C. magnesium, Mn
   D. iron, Ir

2. When combining the masses 0.0462 kg , 58.432 kg and 7854 kg, the total has significant figures equals:
   A. 3 B. 6 C. 5 D. 4

3. For the relation; 1 atm = 1.01325 x10^5 Pa = 760 torr. When the pressure is 91.4 atm, the correct value is;
   A. 6.95 x 10^5 kPa
   B. 9.26x10^3 kPa
   C. 9.26x10^7 torr
   D. 9.26x10^5 kPa

4. The temperature of a system is measured to be 75.4°F. An equivalent temperature would be,
   C. A. 59.6°C B. 78.1°C C. 332.7 K D. 297.3 K

5. The compound copper (II) nitrate would have the formula,
   A. $CuNO_3$ B. Cu_2NO_3 C. $Cu(NO_3)_2$ D Cu_2NO_2

6. All atoms of a given isotope of the same element,
   A. possess the same mass number.
   B. possess the same chemical properties
   C. have the same atomic number
   D. all the above

7. The isotope $^{52}_{24}Cr$ has in its nucleus,
   A. 24 neutrons
   B. 28 neutrons
   C. 28 protons
   D. 52 neutrons

8. An example of an element that can be classified as a metalloid is,
   A. arsenic B. cobalt C. sodium D. sulfur

تنبيه هام: أسئلة الإمتحان موزعة على ستة صفحات. حل الإسئلة داخل كراسة الإمتحان ثم ظلل الإجابات الصحيحة في Bubble Sheet المرفق.

9. The simplest formula of the molecule P_4O_{10} is,
   A. PO
   B. P_2O_5
   C. P_4O_{10}
   D. P_8O_{20}

10. Aqueous solutions of HCl, HNO_3, H_2SO_4, and HClO are all,
    A. acids
    B. alkalis
    C. binary ionic compounds
    D. oxoanions

11. Both $^{85}_{37}Rb^+$ and $^{80}_{35}Br^-$ have the same number of,
    A. protons
    C. electrons
    B. neutrons
    D. (protons + neutrons)

12. What is the mass percent of sodium in sodium sulfate, Na_2SO_4?
    A. 16.19 % B. 19.33 % C. 28.57 % D. 32.37 %

13. Given: **$2Pb(NO_3)_2(s) \rightarrow 2PbO(s) + 4NO_2(g) + O_2(g)$.** If 16.8 g of $Pb(NO_3)_2$ decompose, how many grams of NO_2 are produced?(Pb=207,N=14,O=16)
    A. 2.34 B. 4.67 C. 9.35 D. 33.6

14. Determine the number of molecules of sucrose in 2.00 x 10^2 grams of sucrose, $C_{12}H_{22}O_{11}$, (C=12, O=16)
    A. 0.585 B. 6.84 x 10^4 C. 3.52 x 10^{23} D. 1.20 x 10^6

15. A sample of molecular hydrogen weighing 1.008 g contains the same number of atoms as,
    A. 16.00 g of oxygen gas
    B. 12.00 g of Carbon
    C. both of the above
    D. none of the above

16. Determine the weight in grams of one molecule of iodine, I_2, (I = 127).
    A. 1.66 x 10^{-24}
    B. 4.22 x 10^{-22}
    C. 253.81
    D. 2.37 x 10^{21}

17. A compound contains by mass 40.0% carbon, 6.71% hydrogen, and 53.3% oxygen. A 0.025 mole sample of this compound weighs 3.75 g. The molecular formula of the compound is
    A. CHO B. CH_2O C. $C_6H_{14}O_4$ D. $C_5H_{10}O_5$

تنبيه هام: أسئلة الإمتحان موزعة على ستة صفحات. حل الإسئلة داخل كراسة الإمتحان ثم ظلل الإجابات الصحيحة في Bubble Sheet المرفق.

18. How many grams of ammonia are produced when 1.50×10^2 g of hydrogen are reacted with 1.50×10^2 g of nitrogen? $N_2(g) + 3H_2(g) \rightarrow 2NH_3(g)$

A. 1.82×10^2 B. 3.00×10^2
C. 6.00×10^2 D. 8.50×10^2

19. For a fixed amount of gas at a fixed pressure, changing the temperature from 30°C to 60 °C causes:

A. the gas volume to decrease
B. the gas volume to double
C. the gas volume to increase but not to double
D. the gas volume to decrease to half its original value

20. If a 0.300-L flask at 27°C and 1.00 atm contains 0.975 g of vapor, the formula for the vapor could be,

A. SO_4 B. SO_3 C. SO_2 D. SO

21- In a mixture of $CH_4(g)$ and $C_2H_6(g)$, the partial pressure of $CH_4(g)$ is 0.825 atm. If the total pressure of the mixture is 1.400 atm, the mole fraction of $C_2H_6(g)$ in the mixture is

A. 0.371 B. 0.411
C. 0.525 D. 0.589

22. Which of the following is true? Equal volumes of the gases, nitrogen dioxide and hydrogen bromide, under the same temperature and pressure have equal;

1-number of atoms.
2- number of molecules.
3- average velocity.

A. 1 only B. 2 only C. 3 only D. 1 and 2 only

23. Real gas molecules differ from ideal gas molecules in that real gas molecules

A. have larger masses.
B. have smaller masses.
C. collide with elastic collisions.
D. have attractions between molecules.

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24. Arrange the following sets of quantum numbers in order of increasing energy. If they have the same energy, place them together.

a. 4, 2, -1, +1/2
b. 1, 0 ,0, -1/2
c. 3, 1, 1, -1/2
d. 2, 0, 0, +1/2

A. a > b > c > d B. a > c > b > d
C. a > c > d > b D. b > c > d > a

25. Which of the following represents ionization energy of iodine?

A. $I_2(s) \rightarrow I_2(s) + e$
B. $I_2(g) \rightarrow I_2^+(g) + e$
C. $I(s) \rightarrow I^+(s) + e$
D. $I(g) \rightarrow I^+(g) + e$

26. Which of the following set of quantum numbers not allowed;

A. 1, 0, 0, -1/2 B. 3, 1, 1, -1/2
C. 3, 3, -3, +1/2 D. 4, 3, 3, +1/2

27. All of the following species are isoelectronic with Ar EXCEPT

A. K^+ B. Cl^- C. Ca^{2+} D. Br^-

28. Which of the following electron configuration represents a paramagnetic atom?

	1s	2s	2p
A.	(↑↓)	(↑↓)	(↑)(↑)( )
B.	(↑↓)	(↑↓)	(↑)(↑)(↑)
C.	(↑↓)	(↑↓)	(↑↓)(↑)(↑)

D. All of the above

29. The correct order of increasing electronegativity of the five atoms , Ca, Cl, Rb, Br, Ga, is:

A. Ca < Rb < Ga < Br < Cl B. Rb < Ca < Ga < Br < Cl
C. Cl < Br < Ga < Ca < Rb D. Rb < Ga < Ca < Br < Cl

30. Arrange the flowing atoms; K, S, Sc, and Cl in order of increasing atomic radius;

A. Sc < K< Cl < S C. S < Cl< K <Sc
B. K < Sc < S < Cl D. Cl < S <Sc < K

تنبيه هام: أسئلة الإمتحان موزعة على ستة صفحات. حل الإسئلة داخل كراسة الإمتحان ثم ظلل الإجابات الصحيحة في Bubble Sheet المرفق.

PART II: Questions & Problems ***(30 Marks)***

Draw the Lewis structures for the following: *(12 Marks, four marks each)*

	NO_3^-	SF_6	XeF_4
Lewis structure			

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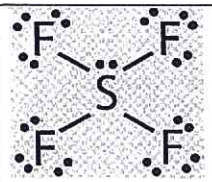
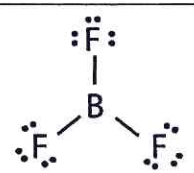
2- Complete the following table *(18 Marks, two marks each)*

Lewis structure			
Geometry			
Polarity			
Hybridization			

أرق الأمنيات بالتوفيق - لجنة الممتحنين

تنبيه هام: أسئلة الإمتحان موزعة على ستة صفحات. حل الإسئلة داخل كراسة الإمتحان ثم ظلل الإجابات الصحيحة في Bubble Sheet المرفق.

Constants

Gas constant, R	0.083 atm L/ mol K
Avogadro's number, N_A	6.02×10^{23}

تنبيه هام: أسئلة الإمتحان موزعة على ستة صفحات. حل الإسئلة داخل كراسة الإمتحان ثم ظلل الإجابات الصحيحة في Bubble Sheet المرفق.

	TANTA UNIVERSITY, FACULTY OF SCIENCE, DEPARTMENT OF ZOOLOGY			
	EXAMINATION FOR FRESHMEN FIRST YEAR STUDENTS OF BIOLOGY			
	COURSE TITLE:	Introduction to Entomology (1)		COURSE CODE: EN1101
DATE 17/1/2023	JANUARY 2023	TERM: FRIST	TOTAL ASSESSMENT MARKS:100	TIME ALLOWED: 2 HOURS

Answer the following questions: **the exam in 4 pages**

A. Choose the correct word from between the brackets : (50 Marks, 1 each)

1. **Insect circulatory system consists of:**
   a. anterior heart and posterior aorta b. anterior aorta and posterior heart
   c. anterior heart and posterior blood vessel d. segmental vessels
2. **One of insect excretory organs is:**
   a. ostia b. gastric caeca c. nephrocytes d. hemocytes
3. **In chewing type of mouth parts .....is a plate moves side by side with strong teeth.**
   a. labium b. Mandibles c. hypopharynx d. maxilla
4. **Butter flies and moths have..... mouthparts.**
   a. Sponging b. chewing lapping c. sucking d. chewing.
5. **In moniliform antennae, the segments of flagellum are:**
   a. Increased suddenly b. spherical and uniform in size c. cylindrical d. serrated.
6. **The antennae of click beetles are:**
   a. Geniculate b. serrate c. setaceous d. filliform
7. **The antennae of honeybee are:**
   a. Geniculate b. serrate c. setaceous d. filliform
8. **The forelegs of mole crickets are modified for:**
   a. swimming b. seizing c. jumping d. digging
9. **Insect deutocerebrum innervates:**
   a. compound eyes and ocelli b. antennae c. mouthparts d. stomodaeum
10. **Insect protocerebrum innervates:**
    a. compound eyes and ocelli b. antennae c. mouthparts d. stomodaeum
11. **The gut function is:**
    a. digestion b. absorption c. excretion d. all mentioned previously
12. **The innermost lining of the trachea is:**
    a. intima b. tracheols c. basement membrane d. epidermis
13. **Incomplete metamorphosis found in :**
    a. cockroaches b. butterflies c. silverfish d. dragonfly
14. **Ametamorphosis is found in:**
    a. cockroaches b. butterflies c. silverfish d. dragonfly
15. **Complete metamorphosis found in :**
    a. cockroaches b. butterflies c. silverfish d. dragonfly
16. **Gradual metamorphosis found in :**
    a. cockroaches b. butterflies c. silverfish d. dragonfly
17. **Members of order Odonata are characterized by:**
    a. compound eyes occupy most of head b. small compound eye
    c. long antennae d. tegmina wing
18. **Function of spermathecal gland is:**
    a. Storage sperms b. secrete nutritive fluid c. secrete egg shell d. secretes adhesive material
19. **Function of male accessory gland is:**
    a. Storage sperms b. secrete nutritive fluid
    c. secretes egg shell and adhesive material d. sperm production
20. **Function of female accessory gland is:**
    a. Storage sperms b. secrete nutritive fluid
    c. secretes egg shell and adhesive material d. sperm production

21. The mushroom gland is found in:
a. mosquitoes b. locusts c. cockroaches d. beetles
22. Elephantiasis is transmitted by:
a. mosquitoes b. locusts c. cockroaches d. beetles
23. We can control lice by using:
a. insecticides b. IGRs c. biological control d. nets
24. Honey bee is belong to order:
a. Blattaria b. Thysanura c. Odonata d. Hymenoptera
25. In siphoning mouthparts ….is absent.
a. labrum b. hypopharynx c. maxillae d. mandibles
26. Human malaria is transmitted by:
a. mosquitoes b. flies c. lice d. bugs
27. Order Lepidoptera are
a. Exopterygota b. Endopterygota c. Apterygota d. Anpterygota
28. Lateral slit-like openings between heart chambers are called
a. spiracles b. lips c. ostia d. valves
29. Function of …… is mustication of food.
a. Crop b. Gizzard c. Gasteric caeca d Malpighian tubules
30. Four wings of Butterflies are covered with
a. spins b. scales c. hairs d. hooks
31. Hind legs of grasshoppers are modified for
a. Seizing b. collecting c. jumping. d. digging
32. Order Coleoptera contains
a. mosquitoes and flies b. beetles and weevils
c. butterflies and moths d. cockroaches and mantis
33. Silver fish has 3 abdominal appendages:
a. caudal filaments and two cerci b. one circus and two caudal filaments
c. 3 cerci d. 3 caudal filaments
34. In clavate antennae, the segments increased
a. Suddenly b. gradually c. laterally d. posteriorly
35. In embryonic development the foregut formed from
a. Ectoderm b. endoderm c. mesoderm d. ectoplasm
36. In embryonic development the midgut formed from
a. Ectoderm b. endoderm c. mesoderm d. ectoplasm
37. The hindgut origin is
a. Ectoderm b. endoderm c. mesoderm d. ectoplasm
38. Number of Malpighian tubules ranged from
a. 1-20 b. 2-250 c. 50-100 d. 100-200
39. Number of tarsomeres in insect legs ranged from
a. 1-3 b. 2-4 c. 2-5 d. 3-7
40. The basal part of insect leg is
a. Femur b. tibia c. coxa d. trochanter
41. The direction of movement of insect antennae is
a. Side to side b. up and down c. east and west d. all directions
42. Insect cuticle is secreted by
a. Epidermis b. dermis c. basement membrane d. wax layer
43. The function of insect cuticle
a. It protects the insect from physical and chemical harm.
b. it determines the body form c. it protects from water loss
d. all the pervious

44. The type of wings in damsel fly is

a. Membranous b. petiolated c. hairy d. halter

45. The hind wings of thrips are

a. Membranous b. petiolated c. hairy d. halter

46. The fore legs of grasshoppers are

a. Walking b. jumping c. seizing d. digging

47. The swimming legs of water beetles are..... legs

a. Fore and mid b. fore and hind c. mid and hind d. fore, mid and hind

48. The molting process is found in

a. Insects only b. All Arthropods c. Avian d. Animal Kingdom

49. The number of harmful insects is about

a. 1000 b. 2000 c. 10000 d. 20000

50. The lateral sides of insect segments are called

a. Tergum b. pleuron c. sternum d. chitin

B. Indicate whether the following statements are true (T) or false (F)

1. The hind legs of honey bee worker are used as digging organ. ( )
2. The taenidia give the trachea their rigidity. ( )
3. In gradual metamorphosis the immature stage is called naiad. ( )
4. The 8th and 9th segments of abdomen are called visceral region. ( )
5. In the cockroach the accessory glands are three pairs. ( )
6. The aorta is a simple tube with a number of ostia. ( )
7. In ametamorphosis, all immature stages resemble adults. ( )
8. The fore wings of beetles called elytra. ( )
9. Culex mosquito transmits plague. ( )
10. Seizing legs are the forelegs of cockroach. ( )
11. The hind wing of Culex mosquito is membranous ( )
12. The hind wing of cockroaches is membranous ( )
13. Fleas transmit epidemic typhus ( )
14. Weevils belong to Order Coleoptera ( )
15. Beetles belong to Order Coleoptera ( )
16. Moths belong to Order Coleoptera ( )
17. Mosquitoes belong to Order Coleoptera ( )
18. Mantis belong to Order Coleoptera ( )
19. Cockroaches belong to Order Odonata ( )
20. Silverfish belong to Order Coleoptera ( )
21. Insects have four wings on pro- and mesothorax. ( )
22. Wasps belong to Order Hymenoptera ( )
23. Ants belong to Order Hymenoptera ( )
24. House fly and mosquitoes are social insects ( )
25. Bedbugs are controlled by using bed nets ( )

C. Matching:

1. Labrum	a. the part where salivary duct open near it
2. Labium	b. the first part of chewing MP
3. Hypopharynx	c. the second jaw of chewing MP
4. Mandibles	d. the first jaw of chewing MP
5. Maxillae	e. the last part of chewing MP

Illustrate with fully labelled drawings each of the following (20 Marks, 5 each)

a- Male reproductive system
b- Insect digestive system
c- Insect tracheal system
d- Insect integument

GOOD LUCK

Examiners:

Dr. Iman El-Husseiny **Dr. Samar El-Kholy**

جامعة طنطا

كلية العلوم

قسم الرياضيات

المستوى الأول – الفصل الدراسي الأول – شعبة البيولوجى

كود المقرر: MA 1121

اسم المقرر: رياضيات عامه (1)

التاريخ: 2023/1/10

الدرجة الكلية للامتحان: 100 درجة

زمن الامتحان: ساعتان

من فضلك أجب عن الأسئلة التالية (كل سؤال 25 درجة):-

السؤال الأول:

(أ) باستخدام الطرق التي درستها أوجد قيمة النهايات التالية:

1- $\lim_{x\to 2} \frac{\sqrt{x^2+5}-3}{x^2-2x}$

2 – $\lim_{x\to a} \frac{\frac{1}{x}-\frac{1}{a}}{x-a}$

3 – $\lim_{x\to 4} \frac{|x-4|}{x-4}$

4- $\lim_{x\to 0} \frac{(x-5)^2-25}{x}$

(ب) حدد هل التقرير الآتى قانون أم تناقض أو غير ذلك $[(p \to q) \to \neg(q \to p)] \leftrightarrow (p \leftrightarrow q)$.

السؤال الثاني:

(أ) باستخدام التعريف الأولي لمشتقة الدالة اوجد $\frac{dy}{dx}$ إذا كانت $y = 2x^2 + 3x + 1$.

(ب) باستخدام خواص المحددات اوجد قيمة z إذا كان $\begin{vmatrix} 1 & 1 & 1 \\ 1 & z & z^2 \\ 1 & z^2 & z^4 \end{vmatrix} = 0$

(ت) أوجد $\frac{dy}{dx}$ إذا كانت $y = \sqrt{2x}\tan x^3$.

السؤال الثالث:

(أ) باستخدام المصفوفات أوجد مجموعة الحل (إن وجد) للمعادلات الآتية:

$x - 4y + 7z = 14$, $-2x + 9y - 16z = -31$, $x - 7y + 13z = 23$

(ب) أذا كانت $y = \frac{x^2+3}{\sin x + 3\cos x}$. أوجد $\frac{dx}{dy}$.

(ت) اذا كانت $f(x) = \frac{6}{x-3}$ و $g(x) = \frac{1}{x}$ فاوجد $f \circ g(x)$ ومجالها.

السؤال الرابع:

(أ) باستخدام جبر الكافو المنطقي التقرير $\neg(\neg p \wedge \neg q) \equiv (p \vee q)$

(ب) باستخدام الاستنباط الرياضي تحقق من صحة التقرير التالي

$$1^2 + 2^2 + 3^2 + \cdots + n^2 = \frac{n(n+1)(2n+1)}{6}$$

(ت) أوجد قيمة k بحيث تكون الدالة $f(x) = \begin{cases} x+k & if\ x < 2 \\ kx^2+1 & if\ x \geq 2 \end{cases}$ متصلة عند النقطة $x = 2$.

خالص الأمنيات لكم بالتوفيق،،،

أ.د. هشام رأفت العلوصي

جامعة طنطا

كلية العلوم

قسم الرياضيات

المستوى الأول – الفصل الدراسي الأول – شعبة البيولوجى

اسم المقرر: رياضيات عامه (1)	كود المقرر: MA 1121
زمن الامتحان: ساعتان	الدرجة الكلية للامتحان: 100 درجة
	التاريخ: 2023/1/10

من فضلك أجب عن الأسئلة التالية (كل سؤال 25 درجة):-

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خالص الأمنيات لكم بالتوفيق،،،

أ.د. هشام رأفت العلوصي

	TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF PHYSICS			
	EXAMINATION FOR (FIRST LEVEL) BIOPHYSICS		EXAMINAR: PROF.DR. AYMAN ELTAHAN	
	COURSE TITLE:	Biophysics 1		COURSE CODE: PH1103
DATE:	24 / 01 / 2023	TERM: FIRST	TOTAL ASSESSMENT MARKS: 100	TIME ALLOWED: 2 HOURS

Answer the fowling questions:

First question:

1- Choose the correct answer:

I **Sphygmonometer is a device to measure**

A) Heart electric activity B) Pressure difference of manometer C) Blood pressure

II **Yield point in stress-strain curve is**

A) Applied hooks law B) Applied Plastic region C) Not applied hooks law

III **If you have two parallel papers, air velocity between them is higher than outside**

A) The two papers will approach B) The two papers will spread away C) Not affected

IV **Equilibrium of rigid body occurred when:**

A) The sum of forces on the body equals to zero. B) The sum of torques is equal to zero C) Both A & B

V **If the streamlines of fluid become far to each other**

A) Pressure will increase and velocity decrease B) Pressure will decrease and velocity increase C) Pressure and velocity will decrease.

2- What does it mean by Nernest equation?

3- A 4 m long bar has a rectangular cross section 0.03 m by 0.06 m. If it is subjected to a 20000 N force along its length, what is the stress?

Second question:

1- Compare between: center of mass & center of gravity.

2- Write Bernoulli's equation and show how it can verify the conservation law of energy.

3- Write down the main conditions of Ideal flow.

Continue

4- **Correct the wrong if found:** (write the correct word only instead of wrong)

a) The streamlines of fluid can cross, if the cross-section area becomes smaller.
b) At resting (Vi= -90mV) the permeability of the membrane is very low for K+ ions but higher for Na+ ions.
c) The flow of K+ ions from inside the axon to outside is due to the electric field.
d) Electrocardiograph is a device for measuring the Blood pressure.
e) Elastic limit applied hook's law.

Third question:

1- Show graphically the main points on Stress-Strain curve (drawing only).

2- Draw and show the main function of the nerve cell?

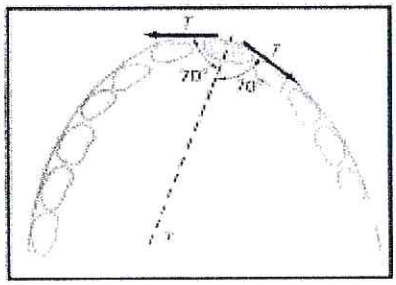
3- A blood vessel of radius r splits into 50 vessels, each with radius r/15. If the average velocity in the larger vessel is v, find the average velocity in each of the smaller vessels.

4- **Complete:** (write the missing part only)

a) The space parameter λ is - - - - - -.
b) The rotation of the object around the pivot point not depends on - - - - - -
c) Hook's law, elongation is directly proportional with - - - - - - - -.
d) Bending over without lifting any load puts high stress on - - - - - - - -.
e) The T peak in Electrocardiograph is associated with - - - - - - - -.

Forth question:

1- In this figure, the wire band has a tension T of 5 N along it. It is therefore exerting a force of 5 N on the tooth (to which it is attached) in the two directions shown. Calculate the resultant force on the tooth due to the wire.



2- What does it mean by Sodium-Potassium pump?

3- Suppose the load force Fℓ =2000N and a person will exert a force Fa = 500N to balance that load.

(i) Find the ratio? (ii) Find M.A.?

4- Give example on your body to show the different types of levers.

Good Luck

	TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF PHYSICS			
	EXAMINATION FOR (FIRST LEVEL) BIOPHYSICS		EXAMINAR: PROF.DR. AYMAN ELTAHAN	
	COURSE TITLE:	Biophysics 1		COURSE CODE: PH1103
DATE:	24 / 01 / 2023	TERM: FIRIST	TOTAL ASSESSMENT MARKS: 100	TIME ALLOWED: 2 HOURS

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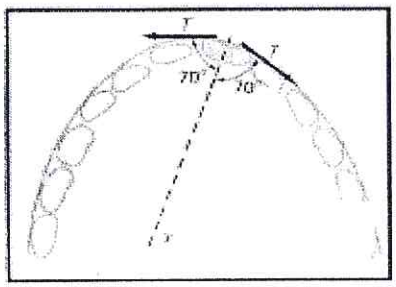

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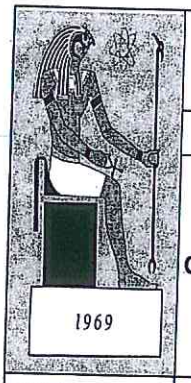	TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF PHYSICS			
	EXAMINATION FOR FRESHMEN (FIRST YEAR) STUDENTS OF BIOLOGY SECTION			
	COURSE TITLE:	امتحان خواص مادة وحرارة (فيزياء عامة 1) Properties of matter& heat General physics 1 لطلاب المستوي الاول شعبه العلوم البيولوجية		COURSE CODE:PH1123
DATE:	15/1/2023	TERM: FIRST	TOTAL ASSESSMENT MARKS: 100	TIME ALLOWED 2 HOURS

Answer The Following Questions

First question: *(25 mark)*

a) Draw

i. The Maximum and Minimum End Thermometer

ii. Constant volume Hydrogen Thermometer.

iii. Callender and Barnes (continuous flow method) for measuring the electrical Equivalent of Heat.

b) 4 gm of a substance at 50°C dropped into the Bunsen`s ice calorimeter caused the mercury thread in the capillary- tube to move through 5.4 cm, the cross- section area of the tube was 0.005 cm^2 . (1gm of ice occupies 1-09 cm^3. Calculate the specific heat of the substance.

Second question: *(25 mark)*

a) Explain how you can determine the specific heat of a solid by the method of mixture.

b) Draw only Joule`s paddle- wheel experiment for determining the mechanical equivalent of heat.

Third question: *(25 mark)*

a) Write the dimensions and units of (Power- Viscosity - Elastic modulus)

b) The time of oscillation t of a small drop of liquid under surface tension depend upon the density (ρ), radius (r) and surface tension (γ). Prove dimensionally that $t = k\sqrt{\frac{\rho r^3}{\gamma}}$

c) The piston in an engine takes 12 sec to undergo six complete vibration. Find the period, frequency, and angular velocity of the vibration.

Fourth question: *(25 mark)*

a) With what velocity should a body be projected at a height of 30 km from the ground so that it becomes the satellite of the earths. Also calculate the time period of revolution of the satellite. Radius of the earth = 6370km, the value of g= 9.8m/sec.

b) Explain the difference between bulk modulus and shear modulus.

c) Draw and explain the stress- strain diagram.

EXAMINERS	PROF. DR. MOHAMED ISMAIL	DR. SHROUK ELASHRY

Best wishes

1969	TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF PHYSICS			
	EXAMINATION FOR FRESHMEN (FIRST YEAR) STUDENTS OF BIOLOGY SECTION			
	COURSE TITLE:	امتحان خواص مادة وحرارة (فيزياء عامة 1) Properties of matter& heat General physics 1 لطلاب المستوي الاول شعبه العلوم البيولوجية		COURSE CODE:PH1123
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EXAMINERS	PROF. DR. MOHAMED ISMAIL	DR. SHROUK ELASHRY

Best wishes

الامتحان من (٢) ورقات وش وظهر (ملاحظة).

	TANTAUNIVERSITY- FACULTY OF SCIENCE - DEPARTMENT OF ZOOLOGY			
	EXAMINATION FOR FRESHMEN (1ST YEAR STUDENTS) OF BIOLOGY			
	COURSE TITLE:	GENERAL ZOOLOGY 1		COURSE CODE: ZO 1101
DATE: 22	JAN., 2023	TERM: SUMMER COURSE	TOTAL ASSESSMENT MARKS: 150	TIME ALLOWED: 2 HOURS

Part 1-Environmental relations: **(37.5 Marks)**

Choose the correct answer:

1- The sum of the physical and biological factors which prevent a species from reproducing at its maximum rate is ...

a. Environmental resistance b. Environmental allopatry c. Environmental sympatry

2- .....is a dynamic biological unit which is greatly influenced by fluctuating environment.

a. Organism b. Organelle c. Organ

3- Organisms have an ecological minimum and maximum with a range in between represent the limit of tolerance

a. Bergmann's law b. Shelford's law c. Liebige's law

4- Environmental resistance is often.....when a species is first introduced into a new territory.

a. High b. Law c. Balanced

5- The interaction between the environmental resistance of the habitat and biotic potential of the organism is....

a. Reproductive potential. b. Survival potential. c. Balance of nature.

6- The biosphere includes:

a. Marine. b. Fresh water. c. a &b.

7- Microenvironment means:

a. Biotic conditions only. b. Local surrounding of the organism. c. Physical condition only.

8- Biotope is:

a.The primary unit in the biosphere. b.Secondary unit in the biosphere. c. Preparatory unit in the biosphere.

9- The functional aspects of ecosystem are:

a. The number of species. b. The life history of species. c. The flow of energy.

10- The distribution and growth of different organisms in an ecosystem are controlled by:

a.Biotic and a biotic features of the environment b. The types and numbers of species c. The cycling of nutrients

11- Amensalism means:

a.One species is harmed by any other species that derives benefit.

b. One species is harmed by any other species that derives no benefit.

c.One benefits but does not affect the other.

12- Stenobathic means:

a. Refers to depth b.Refers to habitat selection. c.Refers to depth

13-Allopatric Speciation means:

a.Two individuals of a population become separated spatially.

b.Two individuals of a population becomewithin the same area.

c. Two individuals of a population do not affect each other.

14- Edaphon means:

انظر خلفه

a.All the organisms that spend a significant portion of their life cycle within a soil profile.

b.All the organisms that spend a significant portion of their life cycle within stem.

c.All the organisms that spend a significant portion of their life cycle within the leaves.

15- Temporarily inactive geophiles.

a.Organisms that live in the soil in a stable manner for a large part of their life

b.Organisms that live in the soil for only certain phases of their life

c.organisms that are very well adapted to life in soil and cannot leave this environment

II- Write short notes on humus and its benefits **(7.5 Marks)**

Part 2 Histology:

Choose the correct answer: **(30 Markes)1-**

1 - Tissue is a group of similar cells having same ..... and perform a specific function.
a- organ b- origin c- origen d- function

2- Cells of epithelial tissue are anchored by.....
a- basement membrane b- Gap junction c-Plasma membrane c-free surface

3- Connective tissue consists of widely spaced cells within .....
a- Intercellular matrix b-Intracellular matrix c- Matrix d- basement membrane

4- Neurons are ..... cells
a- excitable b-support c- non excitable d-glial

5- Fixed or permanent connective tissue cells include.....
a- Leukocytes b- plasma cella c- mast cells d-fat cells

6- .....is a modified columnar cell to secrete mucus.
a- Goblet cell b-mast cell c-fibroblast d-pigment cell

7- Walls of capillaries are lined by.....
a- squamous cells b-cuboidal cells c- stratified cells d- columnar cells

8- White fibers of connective tissue mainly formed of .....
a- elastin b- collagen c- reticulin d-fibrogen

9- Multipolar neurons have ..... processes.
a- one b- two c- three d- more

10-Extrinsic proteins in plasma membrane are attached to .....
a-polar surface b-hydrophobic surface c- non polar surface d- elastin

11- Elastic fibres present in .....
a- arteries b- between muscles c- tendons d-ligaments

12- Eosin stain are specific for .....
a- cytoplasm b- nucleus c- fibres d- protein

13- ..... are responsible for receiving nerve impulse .
a- dendrites b- axon c-axon terminal d- soma

14- ..... are responsible for formation of collagen elastic fibers.
a- fibroblast b- histocytes c- mast cells d- osteocytes

15- Polar sides of plasma membreane are directed .....
a- exteriorly b- interiorly c- middle d-in betwee

2-Compare between Neurons and Glial cells. (7.5Marks)

Part 3 - Embryology: **(37.5 Marks)**

(A): Explain with drawing only gastrulation in frog.(7.5 Marks)

(B): Choose the correct answer: **(30 Marks)**

انقل خلفه

1- During the development of gonads in human embryo, primordial germ cells migrate to the .....

a. germinal ridge b. embryonic kidney c. gut

2- Insects have ..... ovum.

a. mesolecithal b. centrolecithal c. telolecithal

3- Shell membranes in chick egg are type of ..... membranes.

a. primary b. tertiary c. secondary

4- Third cleavage in Amphioxus is ..... type.

a. unequal holoblastic b. equal meroblastic c. unequal meroblastic

5- If the embryo become female, primitive sex cord become .....

a. ootids b. oogonia c. ova

6- During Amphioxus gastrulation, involution occurs in .....

a. macromeres b. gastrocoel c. blastopore cells

7- Type B spermatogonium has ..... number of chromosomes.

a. diploid b. haploid c. tetraploid

8- Fertilized Amphioxus ovum has .....

a.one polar body b.grey crescent c. two polar bodies

9- Late blastula of frog has .....

a. eccentric blastocoel b. eccentricgastrocoel c. eccentric blastocoel and gastrocoel

10- Invagination of ..... occur during the frog gastrulation.

a.bottle cells b. macromeres c. ectodermal pigmented cells

11- The new cavity formed during frog gastrula is .....

a.archentron

b. gut

c.blastocoel

12- Gastrulation of Amphioxus occurs

a. invagination then involution b.invagination then epiboly c.epiboly then involution

13-During neurolation process of Amphioxus, the roof of the neural plate formed by .....

a.neural folds cells

b.epidermal cells

c. notochordal cells

14- In the region of the dorsal lip of blastopore, the cells roll inward (involute) and forms :

a.mesoderm

b.archentron

c.mes-endoderm layer

15- The notochord in Amphioxus developed from .....

a.ventral endodermal cells

b.middle dorsal cells of mes-endodem

c.lateral dorsal cells of mes-endonerm

Part 4Physiology:

Question 1: (Please answer it in the bubble sheet)

1. **Which of the following are the micronutrients?**

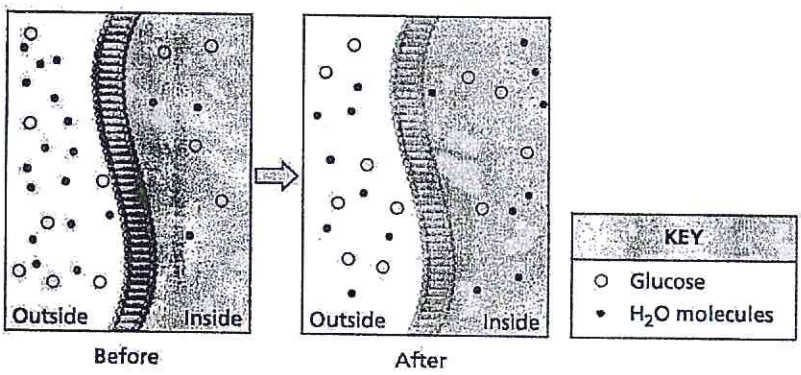
(a) Vitamins and Minerals
(b) Proteins and Vitamins
(c) Carbohydrates and Fats
(D)Proteins and Minerals

2. **The power house of cell is called**

a) Cell wall
b) Mitochondria
c) Ribosomes
d) Nucleus

3. **The diagram shows the movement of molecules across a cell membrane**

(a) F
(b) G
(c) H
(d) J



Which conclusion can be drawn from the diagram?

F Only water molecules move into the cell by diffusion.
G Only glucose molecules move into the cell by active transport.
H Both water molecules and glucose molecules move into the cell by diffusion.
J Both water molecules and glucose molecules move into the cell by active transport.

4. **The exchange of gases between the external environment and the lungs**

(a) Respiration
(b) External respiration
(c) Cellular respiration
(d) None of the above

5. **Which of these organs are situated in the thoracic cavity?**

(a) Stomach
(b) Kidney
(c) Heart
(d) Ovaries

6. **In which part of the respiratory system, gaseous exchange takes place?**

(a) Alveoli
(c) Larynx

(4) ← الصفحة الأخيرة

(b) Pharynx
(d) Trachea

7. Where does most of the digestive process take place?

(a) Small intestine
(b) Large intestine
(c) Stomach
(d) All of the above

8. When cells take in food particles through active transport, what is it called?

(a) Exocytosis
(b) Pinocytosis
(c) Osmosis
(d) Phagocytosis

9. Chloroplast is found in

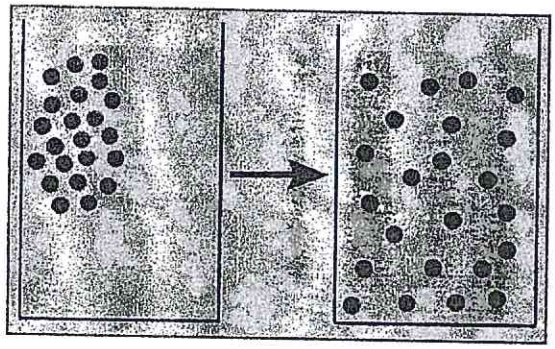
a) Plant cell only
b) Animal cell only
c) Both of these
d) None of these

10. The carbohydrates, proteins, fats are the nutrients which are needed by the body in large amount and this is called as

(a) Micronutrients
(b) Macronutrients
(c) Artificial nutrients
(d) None of them

11. This picture shows:

a) Osmosis
b) Diffusion
c) Facilitated diffusion
d) Active transport



12. What does the liver do to help digestion?

(a) Makes important enzymes

(b) Neutralizes stomach acid

(c) Produces bile

(d) Regulates insulin

13. Which of the following are parts of the human respiratory system?

(a) Trachea
(b) Diaphragm
(c) The lungs

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(d) All of the above

14. Which of these is not included in the vascular system?
a) Heart
b) Blood vessels
c) Blood
d) Lungs

15. Which of the following gas is released out during the process of respiration?

(a) Oxygen
(b) Hydrogen
(c) Carbon dioxide
(d) None of the above

Second question(Please answer it in the answer book)

Define each of the following

1- Phagocytosis and pinocytosis
2- Facilitated diffusion and osmosis
3- Blood clotting

Best wishes!

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