

٣٧. من الأساليب التي يمكن اللجوء إليها في إدارة الأزمة (A) المناورة والالتفاف B. الضغوط الاقتصادية C. الدبلوماسية D. كل ما سبق
٣٨. من طرق علاج الشائعات (A) المنطقية في التعامل B. نشر الحقائق C. التوعية D. كل ما سبق
٣٩. تستمد المبادئ الأخلاقية من: (A) المصادر الدينية B. الفطرة الإنسانية C. الوثائق الأخلاقية D. كل ما سبق
٤٠. من الاشكاليات الأخلاقية (A) تضارب المصالح B. التمييز C. اساءة استخدام الموارد D. كل ما سبق
٤١. مجموعه من الوظائف المتشابهة التي يمكن أن يقوم بها فرد واحد عند اللزوم. (A) المهنة B. العمل C. السرقة العلمية D. الوظيفة
٤٢. من أخلاقيات مهنة التحاليل الطبية التبليغ فورا في حالة نتائج ايجابية لمرض (A) الجرب B. شلل الأطفال C. الكوليرا D. كل ما سبق
٤٣. المساحة النموذجية لمستخدمي العمل (A) ٢ متر مربع B. ٤ متر مربع C. ١٦ متر مربع D. ٢٠ متر
٤٤. مما يجب ان تحتويه شئمة الاسعافات الأولية على (A) ملينات B. مقلصات C. قطن طبي وشاش D. كل ما سبق
٤٥. الرعاف هو (A) صدمة عصبية B. رعشة الجسم C. نزيف دموي من الانف D. كل ما سبق
٤٦. من الخطوات الرئيسية عند تنفيذ عملية مواجهة الكوارث (A) الانذار والتحذير B. الاخلاء C. الايواء D. كل ما سبق
٤٧. ترويض التلوث الصناعي يتم ب (A) الصناعة الخضراء B. التدوير C. التوازن البيئي D. كل ما سبق
٤٨. من مجالات الأخلاقيات البيولوجية (A) تأجير الارحام B. القرصنة البيولوجية C. سرقة الجينات D. كل ما سبق
٤٩. من أهم الأسباب التي تؤدي إلى حدوث الحرائق (A) الجهل والإهمال B. التخزين السيئ C. الاعطال الكهربائية D. كل ما سبق
٥٠. السلامة الفيزيائية: هي مجموعة من الإجراءات والتدابير المتخذة لحماية الأصول المادية، مثل، (A) المباني B. المعدات C. البيانات D. الكل

انتهت الأسئلة:

مع تمنياتي بالتفوق

أ.د. ناصر الشيمي



Assiut University - Faculty of Science
Second semester- Final Exam 2026
Department of Physics

Program: MRP
Level : (1)
Date: 6/6/2026
Time: 2 hours



Code: UR 023

Course title: History of science and technology

Name: ID: Total: 50 Marks

السؤال الأول: ضع علامة (V) امام العبارة الصحيحة وعلامة (X) امام العبارة الخاطئة: (٢ x ١٥ = ٣٠ درجة)

- ١- تعتمد نظرية "التشكل المتعاقب" على فكرة أن الجنين يوجد مكتملاً داخل رأس الحيوان المنوي أو داخل البويضة، وما عملية التزاوج إلا تنشيط للموه فقط. ()
- ٢- من أهم الاعتراضات التي واجهت نظرية دارون (شمولية التكوين) هي مشكلة "الأعضاء المفقودة" حيث يولد الأطفال بأعضاء كاملة حتى لو كان أحد الوالدين مبتور الطرف. ()
- ٣- بحسب نظرية أرسطو، يشترك كل عنصر من العناصر الأربعة في خاصيتين مع عنصر آخر. ()
- ٤- اعتقد المصريون القدماء أن كلمة "كمت" تشير إلى تربة النيل السوداء. ()
- ٥- تقول نظرية الفلوجستون إن المادة عندما تحترق تفقد "الفلوجستون" ويتبقى منها الرماد. ()
- ٦- أثبت لافوازييه أن عملية الصدا يصاحبها زيادة في الوزن نتيجة اكتساب شيء من الهواء. ()
- ٧- علم الأحياء هو العلم الذي يدرس كل ما يتعلق بالمادة والحركة والضوء والطاقة. ()
- ٨- من الأدلة على ظاهره التأثير الكهروضوئي ان الضوء يسير في خطوط مستقيمة التي قدمها العالم بلانك. ()
- ٩- استند العلم في الحضارة الإغريقية بشكل أساسي إلى التجربة العملية والمفاهيم التطبيقية المباشرة. ()
- ١٠- المسار الثوري في العلم يتميز بالديناميكية والتمرد على القوانين القديمة الراسخة. ()
- ١١- اعتقد أرسطو أن الجنين يتكون من الشكل (الرجل) والمادة (المرأة). ()
- ١٢- تعد ظاهرة التكاثر البكري التي اكتشفها العالم شارلي بونيه في حشرة المن، دليلاً علمياً قاطعاً يؤيد صحة نظرية التخلق المسبق التي نادى بها سفامردام. ()
- ١٣- اعتقد المصريون القدماء أن كلمة "كمت" تشير إلى ماء النيل. ()
- ١٤- تجربة الأرنب الرمادي التي قام بها فان ليفينهوك دليل على دور الأنثى في تحديد الصفات. ()
- ١٥- أطلق داروين مصطلح "البريجمات" على الخلايا الجزعية في الجسم. ()

السؤال الثاني: اختر الإجابة الصحيحة مما يأتي: (٢ x ١٠ = ٢٠ درجة)

- ١- وفقاً لافتراض ماكس بلانك، فإن الطاقة المنبعثة من الجسم الأسود تكون :
 - أ- متصلة ومستمرة
 - ب- عبارة عن وحدات منفصلة (كمات)
 - ج- قابلة للتقسيم اللانهائي
 - د- متصلة فقط

٢- من هو العالم الذي اشتق صيغة رياضية لتفسير إشعاع الجسم الأسود عند الأطوال الموجية القصيرة ؟

أ- اللورد ريلي

ب- جيمس جينز

ج- فيلهلم فين

د- ماكس بلانك

٣- وفقًا لنظرية أرسطو، إذا اجتمعت خاصيتا "البرودة" و"الرطوبة" يتكون عنصر:

أ- النار

ب- الهواء

ج- الماء

د- التراب

٤- العالم الذي دعم نظرية بلانك من خلال تفسير "الظاهرة الكهروضوئية" عام ١٩٠٥ هو:

أ- إسحاق نيوتن

ب- توماس ادنثون

ج- ألبرت أينشتاين

د- ماكس بلانك نفسه

٥- صاحب نظرية "التشكل المتعاقب" (Epigenesis) هو :

أ- أرسطو

ب- وليام هارفي

ج- داروين

د- ليفين هوك

٦- العالم الذي ادعى رؤية إنسان صغير (homunculus) داخل الحيوان المنوي هو :

أ- هارفي

ب- أنطون فان ليفين هوك

ج- جالينوس

د- مندل

٧- ما هي الظاهرة التي أجبرت "بلانك" على التخلي عن المفهوم الكلاسيكي للطاقة ؟

أ- قوانين الحركة لنيوتن

ب- سرعة الصوت

ج- الضوء في الماء

د- إشعاع الجسم الأسود

٨- العالم الذي رسم خريطة لمواقع الكواكب واعتبر الأرض مركز الكون هو:

أ- أرسطو.

ب- بطليموس.

ج- فيثاغورث.

د- طاليس.

٩- اعتمد البحث العلمي في الحضارات القديمة (مثل المصرية والبابلية) على :

أ- التفكير الفلسفي المجرد

ب- الواقعية والميل إلى الاستفادة العملية المباشرة

ج- التنبؤ بالمستقبل عبر السحر

د- دراسة الميتافيزيقا فقط

١٠- وفقًا لنظرية أرسطو، يمكن تحويل المعادن الرخيصة إلى ذهب عن طريق:

أ- تغيير نسب العناصر الأربعة المكونة للمادة وخواصها

ب- تعريض المعادن لدرجات حرارة منخفضة

ج- إضافة عنصر الأكسجين إلى المعدن ٣

د- فقدان المعدن لغاز الفلوجستون

End of Exam

With all my best wishes

Dr. Suzan Abu El-Hassan



Assiut University - Faculty of Science
Second semester- Final Exam 2025
Department of Physics

Program: MRP
Level : (1)
Date: 31 /5/2026
Time: 2 hours
Total: 50 Marks



Course title: Zoology

Code: MRPZ 124 Z

Part I (20 Marks)

Q1: Choose the correct answer A, B, C or D: Δ (20Marks/ 1for each)

1. Blood cells belong to which of the following tissues?

- a) Skeletal connective tissue b) Epithelial tissue
c) Vascular connective tissue. d) Nervous tissue.

2. Rank the following terms from the simplest to the most complex.

- a) Organelles, cells, tissues, organs, organism
b) Cells, organelles, organs, tissues, organism
c) Tissues, cells, organelles, organs, organism
d) Organs, cells, organelles, tissues, organism

3. Which organelles modify, sort and package proteins in the cell?

- a) Mitochondria b) Ribosomes c) Golgi complex d) Lysosomes

4. The entrance of liquid materials across the cell membrane is called.....

- a) Phagocytosis b) Pinocytosis c) Exocytosis d) Plasmolysis

5. are cube-like cells with large, spherical central nuclei.

- a) Psedostratified columnar epithelium. b) columnar epithelium.
c) Cubodial epithelium d) squamous epithelium.

6. Which one of the following is NOT considered a connective tissue?

- a) Cartilage b) Bone c) Muscle d) Blood

7. The nucleus is enclosed in a double membrane known as.....

- a) Sarcoplasm b) Nuclear envelope c) Cell membrane d) Nucleoplasm.

8. All types of connective tissue originate from.....

- a) Mesoderm b) Endoderm c) Ectoderm d) All of them

9. Which membranous organelles are concerned with synthesis of lipids?

- a) Golgi apparatus b) Nucleus
c) Smooth Endoplasmic Reticulum d) Rough Endoplasmic Reticulum

Δ Remember ■ Understand ● Apply ◊ Analysis *Evaluate ○ Create

10. The epithelial tissue which present in the wall of blood vessels.....
- a) Simple cubodial epithelium. b) stratified squamous epithelium
c) Simple squamous epithelium. d) Transitional epithelium.
11. All of the following are membranous organelles except.....
- a) Mitochondria b) Endoplasmic reticulum
c) Golgi complex d) Cilia.
12. Thelie on either side of the membrane but are not bound to its hydrophobic interior.
- a) Integral protein. b) Peripheral protein.
c) Cholesterol. d) Carbohydrates.
13. Bone and cartilage are
- a) Skeletal connective tissue b) Vascular connective tissue
b) Connective Tissue Proper. d) Epithelial tissue.
14. Which of the following molecules would NOT be found in animal plasma membranes?
- a) Proteins b) Phospholipids
c) Cholesterols d) Nucleic acids
15. The epithelial tissue which is present in the skin.....
- a) Simple cubodial epithelium.
b) Stratified squamous epithelium Keratinized
c) Simple squamous epithelium.
d) Stratified squamous epithelium non-Keratinized.
16. What type of gland secretes its product through a duct or tube?
- a) Endocrine b) Exocrine c) Holocrine d) goblet cells
17.support and protect neurons as they do not participate in signal transmission.
- a) Neurons b) Neuroglia c) Axons d) Myofibrils
18. The plasma membrane of muscle fibers is known as
- a) Sarcoplasm b) Sarcolemma c) neurolemma d) Nucleoplasm
19. acts as thermal insulation.
- a) Bones. b) Fibers. c) Connective tissue d) Epithelial tissue.
20. The axons of several neurons collect together to form.....
- a) muscles b) nerve. c) Schwan's cell. d) Nissl granules

Part II(30 Marks)

Q2: Choose the appropriate description or function (from Table II) for each structure in the Table I (10 marks) ■:

Table I:

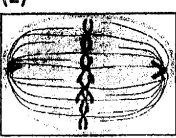
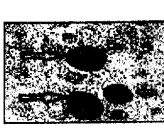
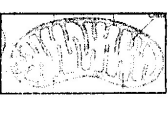
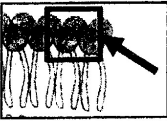
(1)  (.....)	(2)  (.....)	(3)  (.....)	(4)  (.....)	(5)  (.....)
(6)  (.....)	(7)  (.....)	(8)  (.....)	(9)  (.....)	(10)  (.....)

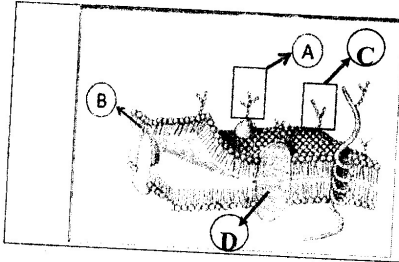
Table II:

(A) Play an important role during cell division.
(B) The outcome of spermatogenesis.
(C) Heterogeneous rounded bodies with digested elements.
(D) Metaphase of mitosis cycle.
(E) Responsible for cell respiration.
(F) It formed of communicating flat tubules (cisternae) with rough surfaces.
(G) The movement of small, uncharged molecules (like: O ₂ and CO ₂) through the lipid bilayer.
(H) Anaphase of mitosis cycle.
(I) Non-membranous organelles known as power-house of the cell.
(J) Transport of molecules from low to high concentration (need ATP).
(K) It coordinates the cell's activities: growth, metabolism, protein synthesis and cell division.
(L) The hydrophilic head of the phospholipid molecule.
(M) The hydrophilic tail of the phospholipid molecule.
(N) responsible for lipid, carbohydrate and mineral metabolism.

Δ Remember ■ Understand ● Apply ◇ Analysis *Evaluate ○ Create

Q3: Complete the following (10 Marks):

1. consists of two identical sister chromatids connected by
2. restrict the movement of phospholipids and thus modulate the fluidity and movements of all membrane components.
3., a simple division of the nucleus and cytoplasm (occurs in *Amoeba*).
4.



Identify:

Lable A:....., Lable B:.....

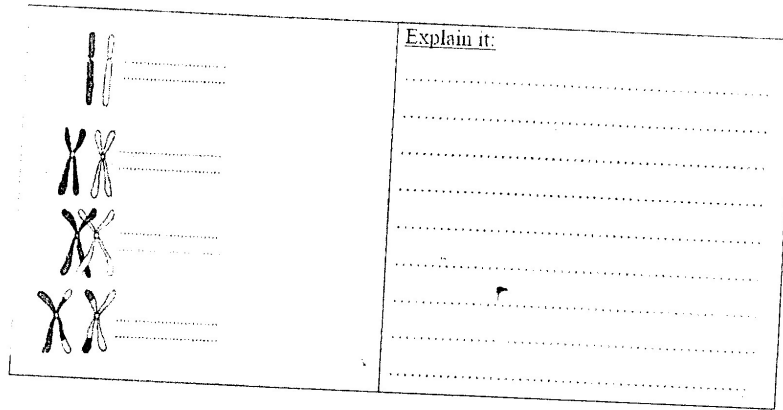
Lable C:....., Lable D:.....

A+C=....., Function in:

Q4: Write about the prophase stage of the 1st Meiotic cell division (10 Marks): Δ

and complete the following stages:

and complete the following stages:



End Of Exam

With my best wishes

Dr. Asmaa Ramadan

Δ Remember

■ Understand

- Apply

Analysis

*Evaluate

☐ Create

-4-

Assiut University
Faculty of Science
Department of Physics
Date:18/5/2026



Final exam
Second semester 2025/2026
General Pysics1 (100P)
Time:2 hours

Q1 Put letter (T) for true statements and letter (F) for false statements.
(25 P0ints one for each)

1	The acceleration of an object is directly proportional to the force acting on it.	()
2	The value of the kinetic friction coefficient and Static friction coefficient is <1	()
3	The Y-component of the velocity remains constant in the parabolic path of a projectile	()
4	The direction of the kinetic friction is in the opposite direction of external force acts on an object.	()
5	If the force is perpendicular to the displacement, the force does no work.	()
6	The mass of each atom of a particle equals total mass of the particle per number of atoms	()
7	Is the following equation dimensionally correct? $T = 2\pi(L/g)^{1/2}$	()
8	1 erg equals 10^7 joule	()
9	The radial acceleration for any object arises from the change in its speed.	()
10	The Scalar product $\underline{A} \cdot \underline{B}$ equals the magnitude of A multiplied by the projection of B on A.	()
11	It is not possible for an object to have motion in the absence of forces act on it	()
12	The force of static friction f_s is equal to the applied external force F as far as there is no motion.	()
13	Work done on a body equals the change in its kinetic Energy.	()

14	The acceleration of a freely falling object depends on its initial motion of the object	()
15	Two vectors $\underline{A}$ and $\underline{B}$ are said to be equal if $ \underline{A} = \underline{B} $ and they are in the opposite direction.	()
16	In the isobaric process the volume kept constant	()
17	The most common application of the zeroth law of thermodynamic can be seen in thermometers	()
18	Latent heat (L): is defined as the heat quantity required to change the phase of 1 g of a substance without changing its temperature or pressure.	()
19	When a gas converted to a liquid, energy is released	()
20	The average coefficient of area expansion is $3/2$ times of the average coefficient of volume expansion	()
21	Melting occurs when a solid changes to liquid and the energy is released	()
22	A good conductors have a high thermal conductivity	()
23	The system which exchange only energy with surrounding , is called isothermal system	()
24	The work done by the system is negative but the work done on the system is positive	()
25	In the isobaric process the volume kept constant	()

25 points one for each)

a) 9.80 m b) 19.6 m c) 31.9 m d) 24.5 m

a) 17 m/s b) 3 m/s c) 25 m/s d) 5 m/s

- The bus experiences by greater acceleration than the fly.
- The fly experiences by greater acceleration than the bus.
- Neither the bus nor the fly experiences by the acceleration.
- Both the bus and the fly experience by the same acceleration.

a) It's possible for an object to have motion in the absence of forces on the object.
b) It's possible to have forces on an object in the absence of motion of the object.
c) Neither (a) nor (b) is correct.
d) Both (a) and (b) are correct

- A.B is smaller than $|A|/|B|$
- A.B is larger than $|A|/|B|$
- A.B could be larger or smaller than $|A|/|B|$, it depends on the angle between them.
- A.B equals $|A|/|B|$

[illegible]

a. 43.4°
b. 53.1°
c. 62.4°
d. 85.24°

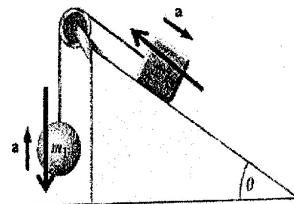
a. $h=21.68\text{ m}$ b. $h=29.36\text{ m}$
c. $h=35.8\text{ m}$ d. $h=45.6\text{ m}$

a. you are rich than your friend
b. your friend is rich than you
c. you and your friend are equally rich
d. non of all

35. In the figure below if $m_1 = 10 \text{ kg}$, $m_2 = 5 \text{ kg}$,

$\theta = 30^\circ$, find the acceleration

- a. $a = 4.9 \text{ m/s}^2$ b. -4.9 m/s^2
c. 1.35 m/s^2 d. -1.35 m/s^2



36. Using Q_{10} , find the tension T

- a. 49 N b. 73.5 N
c. 98 N d. 135 N

37. A golf ball is released from rest from the top of a very tall building. Neglecting air resistance, calculate its position after 5 sec

- a. 122.5 m b. -122.5 m
c. 245 m d. -245 m

38. Consider the following controls in an automobile: gas pedal, break, and steering wheel. Which of the them cause an acceleration.

- a. The gas pedal and steering wheel b- The gas pedal only

- c. The break and gas pedal d. All the three controls

39- A person weighs a fish of mass m on a spring scale attached to the ceiling of an elevator, the elevator is upward with acceleration a , What is the weight of the fish.

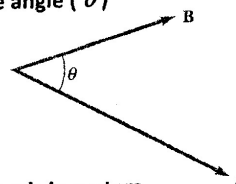
- a. $W = mg (1 + a/g)$ b. $W = mg (1 - a/g)$
c. $W = mg$ d. Non of all

40-Suppose you are running at a constant velocity and you wish to throw a ball and you want to catch it as it comes back down. In which direction should you throw a ball relative to you.

- a. Straight up b. In the forward direction
c. At an angle depends on your running d. Non of all

41- If $\vec{A}$ and $\vec{B}$ are two vector starting from the same origin, the angle (θ) between them is .

- a. $\cos^{-1} \left(\frac{\vec{A} \cdot \vec{B}}{|\vec{A}| |\vec{B}|} \right)$ b. $\sin^{-1} \left(\frac{\vec{A} \cdot \vec{B}}{|\vec{A}| |\vec{B}|} \right)$
c. $\tan^{-1} \left(\frac{\vec{A} \cdot \vec{B}}{|\vec{A}| |\vec{B}|} \right)$ d. $\cot^{-1} \left(\frac{\vec{A} \cdot \vec{B}}{|\vec{A}| |\vec{B}|} \right)$



42- A particle moves according to the equation $x = 10 t^3$ where x is in meters and t is in seconds, the instantaneous acceleration at $t = 2 \text{ sec}$ is

- a. $a = 80 \text{ m/sec}^2$ b. $a = 120 \text{ m/sec}^2$
c. $a = \text{Zero m/sec}^2$ d. $a = 60 \text{ m/sec}^2$

43-A segment of steel railroad track has a length of 30 m when the temperature is 10.0°C . What is its length when the temperature is 30.0°C , where $\alpha = 11 \times 10^{-6}$

- a. 30.0066 m b. 30.066 m c. 30.0099 m d. 30.099 m

44- The temperature of a sample of copper with a mass of 25 gm changed from 20°C to 40°C when absorbed 50 calories of heat energy. What is the specific heat of copper.

- a) $0.1 \text{ J/kg}^\circ\text{C}$ b) $418.6 \text{ J/kg}^\circ\text{C}$ c) $418.6 \text{ cal/kg}^\circ\text{C}$ d) $418.6 \text{ J/gm}^\circ\text{C}$

45- One day when the temperature reaches to 50°F , covert it to Kelven scale.

- a. 315°F b. 287°F c. 283°F d. 277°F

20-The adiabatic proses meaning

- a. Constant temperature b. constant volume
c. Constant pressure d. constant heat quantity

46- To convert the temperature from Celsius scale to Fahrenheit scale ,we use the relation

- a. $T_f = 5/9 T_c + 32$ b. $T_f = 5/9 (T_c + 32)$
c. $T_f = 1.8 T_c + 32$ d. $T_f = 1.8 (T_c + 32)$

47. An ideal gas occupies a volume of 100 cm^3 at 20°C and pressure of 100 N/m^2 , Find The number of moles of the gas inside the container. (Using $R=8.314\text{ J/mole. K}$)

- a. $13.6 \times 10^{-6}\text{ mole}$ b. $3.1 \times 10^{-6}\text{ mole}$
c. $4.11 \times 10^{-6}\text{ mole}$ d. $7.2 \times 10^{-6}\text{ mole}$

48- During phase change of any substance , the temperature is

- a. Increases b. decreases c. remain constant d. None of all

49- The energy can be transfer between two touched objects by

- a. Conduction b. Convection c. Radiation d. All of the m

50- What heat quantity require to convert 1gm of water to steam using

$L_v = 2.66 \times 10^6\text{ J/Kg}$

- a. 62 J b. 333J c. 419 J d. 2260J



ASSIUT UNIVERSITY
FACULTY OF SCIENCE
PHYSICS DEPARTMENT



Course Title: General Physics2
Code: P 105
Instructor: Dr. Ahmed M. Amry
No. of Pages: 6

Program: All Programs
Date :18/05/2026
Time: 2 h
Total Mark: 50 Degree

Second Semester- Final Exam 2025-2026

Physical Constants:

$K_e = 8.99 \times 10^9 \text{ Nm}^2/\text{C}^2$	$G = 6.67 \times 10^{-11} \text{ Nm}^2/\text{kg}^2$	$m_p = 1.67 \times 10^{-27} \text{ kg}$
$\epsilon_0 = 8.854 \times 10^{-12} \text{ F/m}$	$m_e = 9.11 \times 10^{-31} \text{ kg}$	$e = 1.60 \times 10^{-19} \text{ C}$
	$\mu_0 = 1.256 \times 10^{-6} \text{ N A}^{-2}$	$c = 299\,792\,458 \text{ m s}^{-1}$

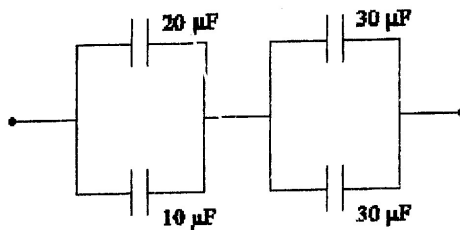
Part I: Multiple Choice: Choose the correct answer: (40 Marks).

- Two identical charges, 2.0 m apart, exert forces of magnitude 4.0 N on each other. The value of either charge is:
A. $1.8 \times 10^{-9} \text{ C}$ B. $2.1 \times 10^{-5} \text{ C}$ C. $4.2 \times 10^{-5} \text{ C}$ D. $1.9 \times 10^5 \text{ C}$
- An electric field is most directly related to:
A. the momentum of a test charge B. the kinetic energy of a test charge
C. the potential energy of a test charge D. the force acting on a test charge
- An isolated charged point particle produces an electric field with magnitude E at a point 2 m away. At a point 1 m from the particle the magnitude of the field is:
A. E B. 2E C. 4E D. E/2
- A charged oil drop with a mass of $2 \times 10^{-4} \text{ kg}$ is held suspended by a downward electric field of 300 N/C. The charge on the drop is:
A. $+1.5 \times 10^{-6} \text{ C}$ B. $-1.5 \times 10^{-6} \text{ C}$ C. $+6.5 \times 10^{-6} \text{ C}$ D. $-6.5 \times 10^{-6} \text{ C}$
- A charge of $2.0 \mu\text{C}$ moves along the direction of an electric field of strength 100 V/m through a distance of 0.5 m. The change in potential energy is:
A. $-100 \mu\text{J}$ B. $+100 \mu\text{J}$ C. $-50 \mu\text{J}$ D. $+50 \mu\text{J}$
- The capacitance of a parallel-plate capacitor is:
A. proportional to the plate area
B. proportional to the charge stored
C. independent of any material inserted between the plates
D. proportional to the potential difference of the plates

- 7) Experimenter A uses a test charge q_0 and experimenter B uses a test charge $2q_0$ to measure an electric field produced by stationary charges. A finds a field that is:
- the same in both magnitude and direction as the field found by B
 - greater in magnitude than the field found by B
 - less in magnitude than the field found by B
 - opposite in direction to the field found by B
- 8) Electric field lines:
- are trajectories of a test charge
 - are vectors in the direction of the electric field
 - cross each other in the region between two point charges
 - are none of the above
- 9) Two thin spherical shells, one with radius R and the other with radius $2R$, surround an isolated charged point particle. The ratio of the number of field lines through the larger sphere to the number through the smaller is:
- 1
 - 2
 - 4
 - 0.5
- 10) The electric field at a distance of 10 cm from an isolated point particle with a charge of $2 \times 10^{-9} \text{ C}$ is:
- 1.8 N/C
 - 180 N/C
 - 18 N/C
 - 1800 N/C
- 11) An isolated charged point particle produces an electric field with magnitude E at a point 2 m away from the charge. A point at which the field magnitude is $E/4$ is:
- 1 m away from the particle
 - 0.5 m away from the particle
 - 2 m away from the particle
 - 4 m away from the particle
- 12) Choose the INCORRECT statement:
- Gauss' law can be derived from Coulomb's law
 - Coulomb's law can be derived from Gauss' law and symmetry
 - Gauss' law applies to a closed surface of any shape
 - According to Gauss' law, if a closed surface encloses no charge, then the electric field must vanish everywhere on the surface
- 13) A particle with charge $5.0\text{-}\mu\text{C}$ is placed at the corner of a cube. The total electric flux in $\text{N} \cdot \text{m}^2 / \text{C}$ through all sides of the cube is:
- 0
 - 7.1×10^4
 - 9.4×10^4
 - 5.6×10^5
- 14) The SI unit of electric flux is
- V.m
 - $\text{N.m}^3/\text{C}$
 - $\text{N.m}/\text{C}$
 - V/m

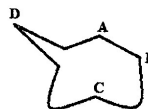
- 15) A 5-cm radius conducting sphere has a surface charge density of $2 \times 10^{-6} \text{ C/m}^2$ on its surface. Its electric potential, relative to the potential far away, is:
 A. $1.1 \times 10^4 \text{ V}$ B. $2.2 \times 10^4 \text{ V}$ C. $2.3 \times 10^5 \text{ V}$ D. $3.6 \times 10^5 \text{ V}$

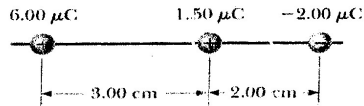
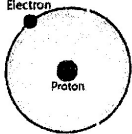
- 16) What is the equivalent capacitance of the combination shown



- A. $20 \mu\text{F}$
 B. $40 \mu\text{F}$
 C. $30 \mu\text{F}$
 D. $10 \mu\text{F}$
- 17) A particular nearsighted person is unable to see objects clearly when they are beyond 2.5 m away (the far point of this particular eye). What should the focal length be in a lens prescribed to correct this problem?
 A. $f = +0.28 \text{ m}$ B. $f = -0.28 \text{ m}$ C. $f = +2.5 \text{ m}$ D. $f = -2.5 \text{ m}$
- 18) The potential difference between two points is 100 V. If a particle with a charge of 2 C is transported from one of these points to the other, the magnitude of the work done is:
 A. 200 J B. 100 J C. 50 J D. 5 J
- 19) The distance between eyepiece and objective lens in a certain compound microscope is 23.0 cm. The focal length of the eyepiece is 2.50 cm, and that of the objective is 0.400 cm. What is the overall magnification of the microscope?
 A. $M = -400$ B. $M = +400$ C. $M = +800$ D. $M = -800$
- 20) A parallel-plate capacitor with air between the plates has an area $A = 2 \times 10^{-4} \text{ m}^2$ and a plate separation $d = 1 \text{ mm}$. Find its capacitance.
 A. 1.77 F B. 1.77 pF C. $1.77 \mu\text{F}$ D. $5.77 \mu\text{F}$
- 21) You charge a parallel-plate capacitor, remove it from the battery, and prevent the wires connected to the plates from touching each other. When you pull the plates apart to a larger separation, do the capacitance C :
 A. increases. B. decreases. C. fluctuates D. remains constant.
- 22) An electron is accelerated from rest through a potential difference V . Its final speed v is proportional to:
 A. V B. V^2 C. $\sqrt{V}$ D. $1/V$

- 23) Light passes from a material with index of refraction 1.3 into one with an index of refraction 1.2. Compared to the incident ray, the refracted ray....
 A. bends toward the normal. B. bends away from the normal.
 C. is undeflected. D. none of the above
- 24) A beam of light of wavelength 550 nm traveling in air is incident on a slab of transparent material. The incident beam makes an angle of 40° with the normal, and the refracted beam makes an angle of 26° with the normal. Find the index of refraction of the material.
 A. 1.47 B. 0.68 C. 1.0 D. 1.68
- 25) You charge a parallel-plate capacitor, the battery remains connected to the capacitor while you pull the plates apart to a larger separation, do the energy stored U_E :
 A. increases. B. decreases. C. remains constant. D. fluctuates
- 26) A parallel-plate capacitor has plates of dimensions 2.0 cm by 3.0 cm separated by a 1.0 mm thickness of paper its dielectric $\kappa = 3.7$. Find its capacitance.
 A. 20 pF B. $20\text{ }\mu\text{F}$ C. 20 F D. $2.0\text{ }\mu\text{F}$
- 27) A light ray is incident on the surface of water ($n = 1.33$) at an angle of 60° relative to the normal to the surface. The angle of the reflected wave is
 A. 30° B. 40° C. 35° D. 60°
- 28) Light is refracted through a diamond. If the angle of incidence is 30° , and the angle of refraction is 12° , what is the index of refraction?
 A. 0.41 B. 2.4 C. 1.3 D. 1.8
- 29) The speed of light changes when it goes from ethyl alcohol ($n_1 = 1.361$) to carbon tetrachloride ($n_2 = 1.461$). The ratio of the speed v_2 in carbon tetrachloride to the speed v_1 in ethyl alcohol, v_2/v_1 , is
 A. 1.07 B. 1.99 C. 0.93 D. 0.76
- 30) The charge tends to accumulate at which location in the irregularly shaped conductor shown in the figure?
 A. A B. B C. C D. D
- 31) A solid conducting sphere has a net charge of $+2Q$ surrounded by a conducting spherical shell with a net charge of $+5Q$. What is the accumulated charge value on the outer surface of the shell?
 A. $+7Q$ B. $+5Q$ C. $+3Q$ D. $+2Q$



- 32) The repulsive force between two identical 1 C charges separated by 300 m is:
 A. 100 kN B. 100 N C. 1 kN D. 10 kN
- 33) Assume that a certain spherical mirror has a focal length of +10.0 cm. Locate the image for object distances of 35 cm?
 A. 25 cm, behind the mirror B. 25 cm, behind the mirror
 C. 25 cm, front the mirror D. 16.7 cm, front the mirror
- 34) From the previous question, describe the image.
 A. Virtual - Erected - Magnified B. Real - Erected - Diminished
 C. Virtual - Inverted - Magnified D. Real - Inverted - Diminished
- 35) An air-filled parallel-plate capacitor has a capacitance of 1 pF. The plate separation is then doubled, and a wax dielectric is inserted, completely filling the space between the plates. As a result, the capacitance becomes 2 pF. The dielectric constant of the wax is:
 A. 0.25 B. 0.5 C. 2 D. 4
- 36) Determine the electric field strength at a point 1.00 cm to the left of the middle charge shown in the figure.

 A. $2 \times 10^{-7} \text{ N/C}$ B. $8 \times 10^7 \text{ N/C}$ C. $8 \times 10^{-7} \text{ N/C}$ D. $2 \times 10^7 \text{ N/C}$
- 37) The following charges are located inside a submarine: 5 μC, -9 μC, 27 μC, and -84 μC. Calculate the net electric flux through the hull of the submarine?
 A. $-6.89 \text{ Nm}^2/\text{C}$ B. zero C. $220 \text{ Nm}^2/\text{C}$ D. $540 \text{ Nm}^2/\text{C}$
- 38) The difference in potential between the accelerating plates in the electron gun of a TV picture tube is about 25000 V. If the distance between these plates is 1.5 cm, what is the magnitude of the uniform electric field in this region?
 A. 1.67 MN/C B. zero C. 100 N/C D. 55 N/C
- 39) The electron and proton of a hydrogen atom are separated (on the average) by a distance of approximately $5.3 \times 10^{-11} \text{ m}$. The magnitudes of the electric force and the gravitational force between the two particles are:

 A. $8.2 \times 10^{-8} \text{ N}$, $3.6 \times 10^{-47} \text{ N}$ B. $8.2 \times 10^{+8} \text{ N}$, $3.6 \times 10^{-47} \text{ N}$
 C. $8.2 \times 10^{-8} \text{ N}$, $3.6 \times 10^{+47} \text{ N}$ D. $8.2 \times 10^{+8} \text{ N}$, $3.6 \times 10^{+47} \text{ N}$
- 40) The concave mirror equation can be expressed as:
 A. $\frac{1}{p} + \frac{1}{q} = -\frac{1}{f}$ B. $\frac{1}{p} + \frac{1}{q} = \frac{1}{f}$ C. $\frac{1}{p} - \frac{1}{q} = \frac{1}{f}$ D. $-\frac{1}{p} + \frac{1}{q} = \frac{1}{f}$

Part II: True or False: Answer the Following Questions (10 Marks)

- 41) The electric charge is always conserved. True | False.
- 42) The electric field can be described using the unit of N/C. True | False.
- 43) When charges have the same sign, the force between them is repulsive.
True | False.
- 44) Electric field lines were first introduced by Faraday. True | False.
- 45) The electric field vector at a point is tangent to the electric field line at that point. True | False.
- 46) Electrical insulators are materials where electrons can move relatively freely.
True | False.
- 47) The radius of curvature of a spherical mirror is twice its focal length. True | False.
- 48) The magnification produced by a flat mirror is always +1. True | False.
- 49) The near point of a normal human eye is about 25 cm. True | False.
- 50) Light's velocity in any medium is more than in a vacuum. True | False.

End of Exam

COURSE COORDINATOR

Amry

Dr. Ahmed M. Amry

	Assiut University - Faculty of Science Second semester- Final Exam 2025-2026 Department of Physics	Program: MRPP 111 Level: (1) Date:23/05/2026 Semester: 2nd semester Time: 2 hours	
Course title: General Physics			Code:MRPP111

Question 1: Select the correct answer (30 degrees) (Δ , ■, ●, ◇, *)

1. Newton's law of universal gravitation is expressed as:		
a) $F = G \frac{m_1 m_2}{r}$	b) $F = G \frac{m_1 m_2}{r^2}$	c) $F = G \frac{m_1 + m_2}{r^2}$
2. Which of the following equations correctly represents the dimensional equation of pressure		
a) MLT^{-1}	b) $ML^{-2}T^{-2}$	c) $ML^{-1}T^{-2}$
3. The displacement (Δx) is correlated with particle final speed (v_f) according to the following relation		
a) $v_f = v_i + 2a\Delta x$	b) $v_f = v_i + 2a(\Delta x)^2$	c) $v_f^2 = v_i^2 + 2a\Delta x$
4. Given a vector $\vec{A} = 4\hat{i} - 2\hat{j}$, which of the following correctly represents the magnitude and direction of $\vec{A}$?		
a) $ A = 4.47 \text{ m}, \theta = 332$	b) $ A = 4.47 \text{ m}, \theta = 26.5$	c) $ A = 3.47 \text{ m}, \theta = 26.5$
5. For an object of weight W resting on an inclined plane at angle θ . Under which condition does the normal force equal the object's weight?		
a) Does not depend on θ	b) $\theta = 90$	c) $\theta = 0$
6. If a car is released from rest at the top of an incline of angle θ and traveled a distance x along the incline, which of the following equation correctly represent its final speed v_x ?		
a) $v_x = 2x\sin\theta$	b) $v_x = \sqrt{2x\sin\theta}$	c) $v_x = \sqrt{x\sin\theta}$
7. If an object of mass m is suspended on a spring scale inside an elevator moving upward with acceleration a_y , which equation represents the tensile force T in the spring scale?		
a) $T = m(g + a_y)$	b) $T = m(g - a_y)$	c) $T = m(a_y - g)$
8. Object A has a charge of $2 \mu\text{C}$, and object B has a charge of $6 \mu\text{C}$. Which statement is true?		
a) $F_{AB} = -3F_{BA}$	b) $3F_{AB} = -F_{BA}$	c) $F_{AB} = -F_{BA}$
9. For a moving negative charged object with mass (m) and charge (q) in a uniform electric field ($\vec{E}$). Express the acceleration vector ($\vec{a}$) of the particle in terms of the field and θ between $\vec{a}$ and $\vec{E}$ vectors		
a) $\vec{a} = \frac{q\vec{E}}{m}, \theta = 180$	b) $\vec{a} = \frac{q\vec{E}}{m}, \theta = 0$	c) $\vec{a} = \frac{q\vec{E}}{m}, \theta < 90$

A particle with charge $+q$ moves across two parallel plates separated by a perpendicular distance d under the influence of a uniform electric field $\vec{E}$. The work done by the electric field W_F on the particle is:

- | | | |
|--------|----------|-----------|
| a) E | b) qEd | c) $-qEd$ |
|--------|----------|-----------|

A parallel-plate capacitor carries charge Q on one of its plates. The net charge stored on the capacitor is:

- | | | |
|---------|---------|----------|
| a) $2Q$ | b) Zero | c) $-2Q$ |
|---------|---------|----------|

12. The resistance R of a wire made of a specific material can be increased when:

- a) The length increases and the cross-sectional area decreases
- b) The length decreases and the cross-sectional area increases
- c) The length increases and the cross-sectional area increases
- d) The length decreases and the cross-sectional area decreases

13. The resistivity ρ of a conducting material varies with temperature according to the relation

- | | | |
|--|---|---|
| a) $\rho_T = \frac{\rho_0}{[1 + \alpha(T - T_0)]}$ | b) $\rho_T = \rho_0[1 + \alpha(T - T_0)]$ | c) $\rho_T = \rho_0[1 - \alpha(T - T_0)]$ |
|--|---|---|

14. Three resistors R_1 , R_2 , and R_3 are connected in **series**. The equivalent resistance of the combination is

- | | | |
|---------------------------|---|-------------------------------|
| a) $R_{eq} = R_1 R_2 R_3$ | b) $\frac{1}{R_{eq}} = \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}$ | c) $R_{eq} = R_1 + R_2 + R_3$ |
|---------------------------|---|-------------------------------|

15. Two capacitors connected in **series** with capacitance of $2\mu F$ and $5\mu F$ are connected in parallel with third capacitor of $3\mu F$. Hence, the equivalent capacitance equals to:

- | | | |
|---------------------------------|-----------------------|----------------------------------|
| a) $C_{eq} = \frac{31}{7}\mu F$ | b) $C_{eq} = 10\mu F$ | c) $C_{eq} = \frac{30}{31}\mu F$ |
|---------------------------------|-----------------------|----------------------------------|

16. In a closed electrical circuit loop, Kirchhoff's Voltage Law states that:

- a) The algebraic sum of currents at a junction is zero
- b) The algebraic sum of voltages around any closed loop is zero
- c) The total resistance in series is the sum of individual resistances
- d) The product of current and resistance equals voltage

17. Three capacitors with capacitances C_1 , C_2 , and C_3 are connected in **parallel**. The equivalent capacitance of the combination is

- | | | |
|-------------------------------|---|---|
| a) $C_{eq} = C_1 + C_2 + C_3$ | b) $C_{eq} = \frac{C_1 C_2 C_3}{C_1 + C_2 + C_3}$ | c) $\frac{1}{C_{eq}} = \frac{1}{C_1} + \frac{1}{C_2} + \frac{1}{C_3}$ |
|-------------------------------|---|---|

18. When a charged particle is placed in a uniform electric field, the force acting on it is directed:

- a) Along the electric field if the charge is positive
- b) Opposite to the electric field if the charge is positive
- c) Along the electric field if the charge is negative
- d) Perpendicular to the electric field for all charges

19. The resistance R of a wire made of a given material depends on which parameters?

- a) Length and cross-sectional area of the wire
- b) Resistivity of the material and dimensions of the wire
- c) Temperature of the material
- d) All of the above

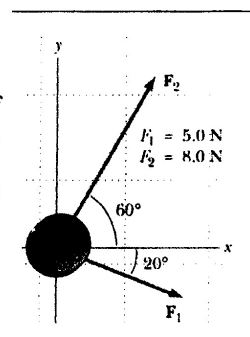
20. Three resistors are connected as follows: $R_1 = 4 \Omega$ and $R_2 = 6 \Omega$ are connected in series, and this series combination is connected in parallel with $R_3 = 15 \Omega$. A current source supplies $I = 6 \text{ A}$ to the entire circuit. What is the total power dissipated?

- a) 108 W
- b) 144 W
- c) 216 W

Question 2: Solve the following problems (20 degree): (Δ , $\blacksquare$, $\bullet$, $\diamond$, $*$)

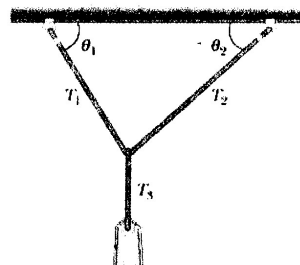
Problem 1: (4 degrees):

A hockey puck of mass 0.3 kg slides on a horizontal, frictionless surface of an ice rink. Two forces act on the puck, as shown in the figure: $F_1 = 5.0 \text{ N}$ and $F_2 = 8.0 \text{ N}$. Determine the net force acting on the puck and its resulting acceleration.



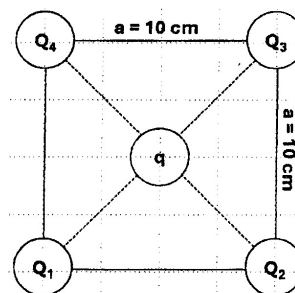
Problem 2: (4 degrees):

A weight of 325 N hangs from three connected wires according to the following figures. Two wires make angles with horizontal plans $\theta_1 = 60^\circ$ $\theta_2 = 25^\circ$. If the system in equilibrium, find the tension in each wire T_1 , T_2 , and T_3



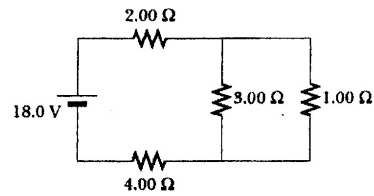
Problem 3: (4 degrees):

Four charged objects are placed at the corners of a square, with charges $Q_1 = 6 \mu\text{C}$, $Q_2 = 3 \mu\text{C}$, $Q_3 = -2 \mu\text{C}$, and $Q_4 = -8 \mu\text{C}$, as shown in the figure. A fifth charged object with charge $q = -4 \mu\text{C}$ is located at the center of the square. Determine the net force vector acting on the central charge and calculate the magnitude of this force.



Problem 4: (4 degrees):

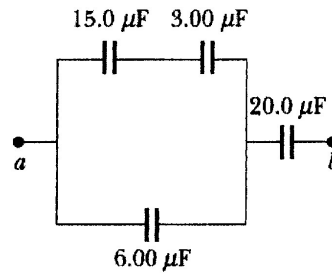
Calculate the power delivered to each resistor in the circuit shown in the next figure.



Problem 5: (4 degrees):

Four capacitors are connected as shown in the next figure.

- (a) Find the equivalent capacitance between points a and b.
(b) Calculate the charge on each capacitor if the potential difference $V_{ab} = 15\text{ V}$.



End of Exam

Best Regards

Exam Committee

Prof. Essam F. Abo Zeid

Dr Ahmed Galal

Δ Remember

■ Understand

● Apply

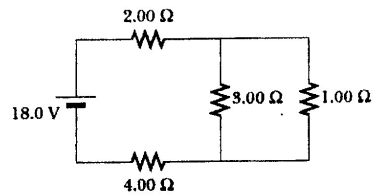
◇ Analysis

* Evaluate

○ Create

Problem 4: (4 degrees):

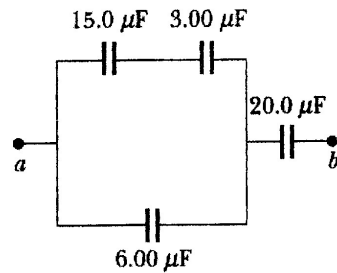
Calculate the power delivered to each resistor in the circuit shown in the next figure.



Problem 5: (4 degrees):

Four capacitors are connected as shown in the next figure.

- (a) Find the equivalent capacitance between points a and b.
- (b) Calculate the charge on each capacitor if the potential difference $V_{ab} = 15 \text{ V}$.



End of Exam

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Δ Remember

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● Apply

◊ Analysis

* Evaluate

○ Create

	Assiut University- Faculty of Science Second Semester- Final Exam 2025-2026 امتحان نهاية الفصل الدراسي الثاني الاجابة في ورقة البابل	Program: All Level : all Date: ٤ يونيو ٢٠٢٥ الزمن: ساعتان	
Course Title: المقرن: أخلاقيات المهنة والسلامة المهنية		Code: 300 F	
Instructors: Prof. Dr. Naser Elshimy د.ناصر الشيمي			
Important:	No. of pages 2	No. Of questions 2	Total Mark: ٥٠ درجة

السؤال الاول: في ورقة البابل ظلل (T) للعبارة الصحيحة أو ظلل (F) للعبارة الخاطئة لما يأتي: (٣٠ درجة)

١١- يرتدي متخصصي السلامة المهنية خوذة ذات لون اخضر.	١- السلامة والامانة والصدق من أخلاقيات البحث العلمي وغيره.
١٢- يؤدي تطبيق قوانين الملكية الفكرية الي دفع عجلة الابداع والابتكار.	٢- مثلث الاطفاء يشمل حرارة ووقود واكسجين .
١٣- التخريب السيبراني يمكن أن يؤثر على الأبحاث وخاصة الحساسة.	٣- يعرف التدريب بأنه نشاط منظم لتحسين الأداء الوظيفي.
١٤- نظام إدارة السلامة والصحة المهنية يشمل التخطيط والتنفيذ والمراجعة والتحسين .	٤- التخلص من مخلفات العامل يكون بالحرق الآمن ودفن الرماد في مدفن آمن.
١٥- الأيزو تعني تطبيق أنظمة إدارة السلامة داخل الشركات والمؤسسات.	٥- يعرف التقرير بأنه عرض كتابي او شفوي لموضوع معين يقدمه فرد او مجموعه.
١٦- في اختبارات الزواج فإن الإفشاء عن الامراض التي قد توجد في احد الطرفين يعتبر مبرر.	٦- علم السلامة المهنية يشمل كيفية حماية العاملين وتحقيق بيئة عمل آمنة ومستقرة.
١٧- الاعتقاد بأن الأخلاقيات هي مجرد الالتزام بالقوانين واللوائح يعد خطأ شائع.	٧- طفاية الحريق ذات المسحوق الجاف تصلح لاطفاء ككل انواع الحرائق.
١٨- تعرف الكوارث بأنها حوادث مفاجئة تقوى الطبيعة او الانسان.	٨- يعد سرقة علمية استخدم افكار من موقع على الانترنت والاشارة اليه.
١٩- لتطبيق أخلاقيات المهنة بفعالية، يجب على المؤسسات وضع ميثاق أخلاقي .	٩- تدوير المخلفات يعتبر ثروة ضخمة ومسار لجودة البيئة والحياة.
٢٠- المفاجأة و الاضطراب والارتباك من سمات الطوارئ والازمات .	١٠- رقم ٢ المكتوب اسفل الزجاجات البلاستيكية يعني انها آمنة الاستخدام.

 ٣٠- خطر مادة مهيجة	 ٢٩- مياة صالحة للشرب	 ٢٨- ممنوع العوم	 ٢٧- مخاطر اشعاعية	 ٢٦- مخاطر بيولوجية	 ٢٥- نقطة تجمع	 ٢٤- مخاطر متنوعة	 ٢٣- ممنوع التدخين	 ٢٢- جرس طوارئ	 ٢١- احذر استنشاق الغاز
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السؤال الثاني: في ورقة البابل ظلل حرف A او B او C او D للإجابة الصحيحة: (٢٠ درجة)

- ٣١- حقيبة الانسكابات الكيميائية تستخدم ل (A-احتواء-B-متصاص-C-تجديد -D- كل ما سبق) الترسبات الكيميائية والسوائل الخطرة.
- ٣٢- مراحل مستويات السلامة البيولوجية BSL (A-٤-B-٥-C-٦-D-٩)
- ٣٣- علامات الإنزام تكون (A- باللون الأزرق-B- الاحمر -C- الابيض-D-البي)
- ٣٤-.....هو تركيز المادة التي تؤدي لوفاة نصف مستخدميها اذا تم تناولها دفعة واحدة (A-LC50-B-LOL-C-LEL -D-LD50)
- ٣٥- من عناصر السلامة المهنية : (A- تقييم المخاطر -B- خطط الطوارئ -C- التدابير الوقائية -D-كل ما سبق)
- ٣٦- من حالات عدم الامانة البحثية : (A-اختلاق-B-التلفيق والتزوير-C-التلاعب بالصور-D-كل ما سبق)