المستوى الأول - علم وظائف النبات (ب ١٠٢) (لا ضوئي + مجموعة السلاوص)

Mansoura University
Faculty of Science
Botany Department
El-Mansoura, Egypt

جامعة المنصورة
كلية العلوم
قسم النبات
المنصورة - مصر

Final Examination in Botany
Summer course : September. 2013

Educational Year: 1st Level **Program : Biology**
Subject: (B102) **Courses: Basics of plant Physiology**
Time: 2 hrs **Date: 28 /8/2013** **Full mark:** 60

Q1: Complete the missing in the following :- (10 marks)

1- Fixation of CO_2 into sugars in green tissues occurs through ..... cycle during ..... .
2- In the aerobic conditions CO_2 is released through.....cycle during the process of .....
3- Fermentation of sugars under anaerobic conditions produces ..... + ...
4- Light causes ..... of the ..... pump in the guard cells ,Where ..... ions enter ,flollowed by ..... of the stomata .

Q2: Choose the correct answer : (10 marks) .

1- Appearance of water drops in the early morning on leaf margins and tips is knows as (Transpiration – Guttation) .
2- NAD is considered as (Coenzyme – enzyme inhibitor) .
3- Heavy meals are considered as (Competitive inhibitors – Non.Competitive inhibitors).
4- Passive absorption of water depends on (osmotic pressure – transpiration).
5- Permeability of plant cells to ionized substances includes (Active absorption – passive absorption – or both) .
6- Amylase enzyme causes hydrolysis of (starch – fats) .
7- Accumulation of the end products causes (increase in enzyme activity – decreases enzyme activity) .
8- Terminal oxidation during aerobic respiration prouduces (ATP – H_2O – or both).
9- Aldolase enzyme causes splitting of (Fructose 1,6 – Di [P] و Fructose-6-[P])
10- Succinic dehydrogenase is (Isomerase – Transferase – Oxido reductase) .

Q3: Put (√) or (×) and Correct the wrong answer : (10 marks) .

1- Guttation is due to more water absorption at night by the root . ( )
2- Light reactions during photosynthesis consumes oxygen . ( )
3- Glycolysis causes break down of sugars into mevalonic acid . ( )

4- The starch sugar hypothesis explains the movement of stomata . ( )
5- Gelation is the conversion of Gel to Sol by cooling . ( )
6- Adsorption is a character of the colloids . ( )
7- Ca^{++} ions antagonise Na^{+} ions at the plasma membrane . ( )
8- Lyases are enzymes capable of conversion of the substrate after using water. ( )
9- The hypertonic solution causes increase in cell turgidity . ( )
10- The Competitive inhibitor of enzyme action is not similar to the substrate molecule . ( )

Q4: Write Shortly On : (30 marks)

1- The role of osmosis in plant life .
2- Krebs cycle .(Diagram only)
3- External factors affecting transpiration .
4- Permeability of the plasma membrane to non electrolytes .
5- Transferase and isomerase enzymes with example .
6- Root pressure .

" Best of Luck "

Examiners: Prof.Dr.Samy Abo-Hamed
Prof.Dr.Wafaa M.Shukry
Dr. Rasha M.E.Gamal

Mansoura University Faculty of Science Physics Department	Summer Exam, 2013 ***Physics***	1st Year Phys 101 Time allowed: 2 h

Answer the Following Questions

marks

1. **(a)**What is the temperature change of 25 °C in both °F and °K scale? [6]
   (b)A 50 gram of a metal is heated to 200 °C and then dropped into a beaker containing 400 gram of water initially at 20 °C. If the final equilibrium temperature is 28 °C, find : [9]
   i)The specific heat of metal.
   ii)The total heat transferred to the water in cooling the metal.

2 **(a)** If 5 m^2 from the sun surface radiate 3.69 x 10^8 J/m^2sec, Calculate the sun temperature (Stefan`s constant is 5.7 x10-8 W/m^2K^2). [7]
(b) A brass disk has a hole 80 mm in diameter punched in its center at 82 °F. If the disk is placed in boiling water, what will be the new area of the hole? [8]
(coefficient of linear expansion α for brass = 9.75 x10^{-6} F^{-1})

3 **(a)** The acceleration ,a, of a particle moving with uniform speed v in a circle of radius r is given [4]

$$a = k r^{\alpha} v^{\beta}$$

determine the values of α and β.
(b)A steel wire of length 250 cm, its mass 15 gm and density 7.5 gm/ cm3. The elongation is 2mm, when 10 kgm is hung on the wire, calculate Young`s modulus. [7]
(c) Calculate the acceleration due to gravity at a point at 300 km from the earth`s surface (the diameter of the earth 1.275x10^7m). [4]

4. **(a)** At certain point in a pipeline the velocity is 1.5 m/sec and the pressure is 2 x10^5 Pa. Find the pressure at a second point in the line 4m lower than the first, if the cross section at the second point is one-half that at the first. The liquid in the pipe is water. [7.5]
   b) the position of a particle moving along the x-axis is given by [7.5]
   x = 0.08 sin (12t+ 0.3) m where t in second
   i) find the amplitude and period of the motion
   ii) Determine the position, velocity and acceleration at t = 0.6 sec.

Mansoura University
Faculty of Science
Physics Department

Course code: Phys 102

September semester 2013
Date: 26-8-2013

1st Level students all Programs
Full Mark: 60
Allowed time: 2 hours
Course title:
Electricity, magnetism and optics

Answer the following questions: Marks

1- a- Calculate the electric field intensity at point P that is located at distance y on the vertical line at the mid-point of a dipole whose length is 2a. 8

b- A point charge Q is placed on the x- axis at x = 2.0 m from the origin. A second point charge, –Q, is placed at x = 3.0 m. If Q = 40 μC, what is the magnitude of the electrostatic force on a 30 μC charge placed at the origin? (K_e=9x10^9 N.m^2/C^2). 7

2- a- Define the following: 8

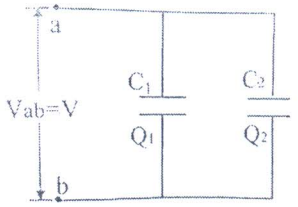
Coulomb's law – Gauss's law –Electric flux – Potential difference.

b- An insulating sphere of radius a has a uniform charge density ρ and total positive charge Q. Calculate the electric field intensity at a point outside the sphere, that is for r 〉 a (inside the sphere) and r 〈 a (outside the sphere). 7

3- a- Define the following: 8

refractive index -Huygens's principle– critical angle- optical path

In Figure, let C_1=6μF, C_2 =3μF and V_{ab} =18 volt. Find the equivalent capacitance, the charge and potential difference for each capacitor when the two capacitors are connected 7



i - In series ii- In parallel

4- a- Discuss how the liquid refractive index is measured using Pulfrich refractometer. 8

b- A green light of wave length 546 nm traveling in air and incident on a slab of transparent material. If the incident ray makes an angle 40° with the normal, and the angle of refraction is 26°. 7

a) Find the index of refraction of the material.
b) Find the wavelength of light in the material.
c) What is the frequency in the medium? (Velocity of light C =3x10^8 m/s)

Best wishes:

Dr Hany Kamal

المستوى الأول - اسس الكيمياء غير العضوية لعام ١٢١ مجموعة السولاجين

Mansoura University
Faculty of Science
Chemistry Department
Subject: Chemistry
Course: Chem. (121)

Summer-Term
First Level
Date: **24/8/2013**
Time Allowed: **2** hours
Full Mark: **60** Marks

1- a. Complete the following table: **(10 marks)**

Element	Electronic Configuration	Element type	Period number	Group number	Quantum Numbers			
					n	l	m	s
^{15}P	.....	.....	.....	.....	....	....	....	....
^{20}Ca	.....	.....	.....	.....	....	....	....	....

b- How many grams of CO_2 will be formed when a mixture containing 1.93 g ethylene and 5.92 g oxygen is ignited? If the actual yield 3.48 g CO_2, What is the % yield of CO_2? (10 marks)

2- a. True and false (Give the reason for the correct response): **(10 marks)**

i. ***T – F*** The size of K is smaller than K^+. (At. No.=19)
ii. ***T – F*** The ionization energy of nitrogen atom is less than oxygen atom.
iii. ***T – F*** The wave length is the distance between two adjacent crests or troughs.
iv. ***T – F*** The way electrons are arranged in an atom is called electron configuration.
v. ***T – F*** In the periodic table, the group with greatest tendency toward electron gain is group 7A.

b. On the basis of VBT, what is the kind of hybridization & geometry of the following:

i. NH_3 (atomic numbers: H = 1, N = 7)
ii. SF_6 (atomic numbers: F = 9, S = 16)

3- a. Complete the following statements: **(5 marks)**

i. On the basis of **VSEPR** theory, AlF_3 (**^{13}Al**) has ..... structure with bond angle equal to ....., while SF_6 (**^{16}S**) has ..... structure with bond angle equal to .....
ii. How many moles of O_2 are produced when 3.34 moles of Al_2O_3 decompose?.....
iii. **From Born-Haber cycle for $MgCl_2$:** ΔH_f= ..... + ...+ ..... - ..... - .....
iv. The electronegativity is ....., while the electron affinity is .....

b- What is the frequency of infrared radiation that has a wavelength of 1.35×10^3 nm? (the speed of light is $C = 3 \times 10^8$ ms^{-1}). **(5 marks)**

4. a- Draw the Lewis structure & calculate formal charge for the following: **(7 marks)**

i. **HNO_3**, (atomic number: H=1, O=8, N=7)
ii. **CO_3^{2-}**, (atomic number: O=8, C=6)

b- How much water must be added to 25.0 cm^3 of 0.5 M KOH solution to produce a solution whose concentration is 0.350 M ? **(3 marks)**

المستوى الأول - مجموعة البيولوجي - ع ١٠٢ - ١ - تقسيم المملكة الحيوانية

Mansoura University
Faculty of Science
Zoology Department
Subject: Zoology
Code: Z102
Courses: Principles of Animal Taxonomy
Academic Year: 2012-2013

Summer Term
Final Exam
1st Level Biology Program Students
Date: 28 August, 2013
Time Allowed: 2 hrs
Full Mark: 60

Answer All the Following Questions

Question No. 1. Answer the following parts: **(20 marks)**

A. Describe the life cycle of each of the following: **(10 Marks)**

- *Fasciola gigantica* and *Schistosoma*

B. Complete the following: **(5 Marks, 0.5 Mark for each space)**

- The main unit of the excretory system of Platyhelminthes is ……, most of them are ……., except members of the Family Schistosomatidae.
- Mehlis gland play an important role in ……..……
- Egg hatching of *Schistosoma* pass through five stages; ……., ……., ……., ……., & ……..…….
- …….. is liberated from egg searching for ……

C. Compare between the Following: **(5 Marks)**

1- *Classes of Platyhelminthes*.

2- Cercaria of blood flukes and Cercaria of liver flukes.

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Question No. 2.Write Short Notes on the Following: **(20 marks)**

A. Write short notes on FIVE ONLY of the following: **(10 marks)**

1. Excretion and respiration of sponge.
2. Stony corals (formation and examples).
3. *Sepia*.
4. Classification of *Mollusca*.
5. *Scolopendra*.
6. Economic importance of *Mollusca* & *Echinodermata*.

Question No. 3. Answer the following: (20 marks)

A. Choose the correct answer from the following: (10 marks, each statement of one Mark)

1- Aristotle Classify animals according to:

A- Their way of living & habitat. B- Their body parts & type of food.

C- Presence or absence of blood D- All of them

2- He is known as the Father of Taxonomy:

A) Carl Linnaeus. B) MFA. C) Aristotle D) John Ray

3- Asexual reproduction in Protozoa occurred by

A) Binary fission B) Budding. C) Conjugation. D) (A & B)

4- *Amoeba proteus* lives in.....

A) Small intestine of Man. B) Large Intestine of Man.

C) Blood D) Freshwater (ponds, lakes, slow streams)

5- The *Amoeba* secretes a cyst formed of two layers for protection. Inside the cyst the *Amoeba* divides numerous times forming many small ones, this process is called.....

A) Sporulation B) Binary fission C) Multiple fission D) Conjugation

6- *Entamoeba histolytica* lives in .....

A) Small intestine of Man B) Large intestine of Man C) Blood D) Fresh water

7- *Euglena* shows some characters of plants such as

A) Chloroplasts B) Pellicle C) Myonemes D) Binary fission

8- The intermediate host of *Trypanosoma* is .....

A) Female *Anopheles* B) Male *Anopheles* C) Tse Tse fly D) Female *Culex*

9- *Plasmodium* is an important protozoan parasite of man causing

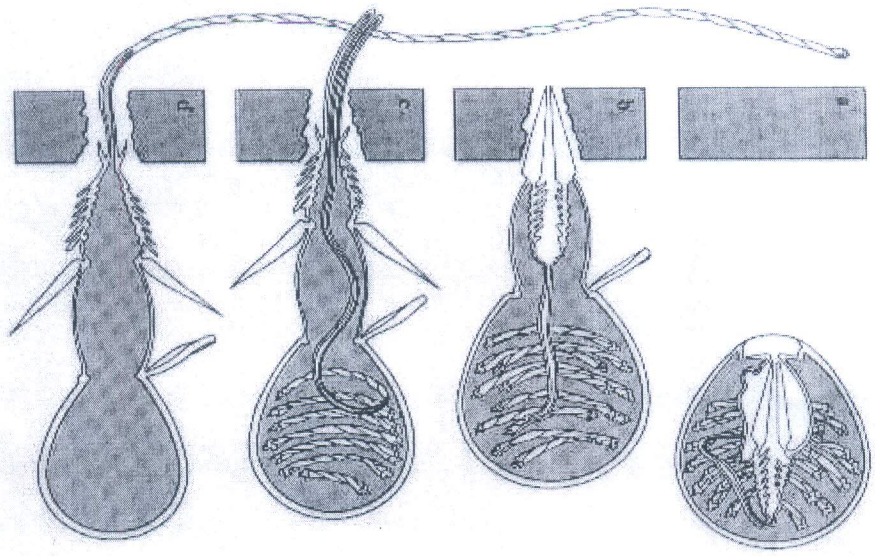
A) Malaria B) Sleeping sickness C) Dysentry D) Liver disease

10- Conjugation of *Paramecium* means fusion of.....

A) Two *Paramecia* B) Three *Paramecia* C) Four *Paramecia* D) Six *Paramecia*

B- The following diagram represents the stages of ..... **(5 marks)**

a..... b..... c..... d.....



d c b a

C. Choose the correct answer of the following: **(5 marks)**

1. **Phylum *Cnidaria* is classified into:**

   a) Class Hydrozoa. b) Class Scyphozoa. c) Class Anthozoa. d) All of them.

2. **Class Arachnida are Arthropods including species some of them are terrestrial and others are aquatic; they respire through:**

   a) Simple diffusion and flam cells. b) Gills, lung books & trachea.

   c) Lungs & trachea. d) Chelicerae & simple diffusion.

3. **Excretion in *Allolobophora* takes place through:**

   a) Simple diffusion. b) Nephridae. c) Contractile vacuoles. d) Lung books.

4. **Water exit from sponge body through:**

   a) Mouth opening. b) Osculum. c) Pores. d) None.

5. ***Obelia* medusa has ..... of radial canals:**

   a) 2 types. b) 3 types. c) 4 types. d) 5 types

B. Mark (√) or (X) for the following statements: **(5 marks, each statement of 0.5 Mark)**

1- Aristotle is the scientist that establishes the binomial and Italic nomenclature.

2- Protozoa are subdivided based upon their means of Nutrition.

3- Protozoa are unicellular eukaryotic animals.

4- Encystment in Protozoa occurs under unfavorable conditions.

5- The infective stage of *Entamoeba histolytica* is the cyst with 8 nuclei.

6- The result of conjugation process in *paramecium* is 4 new animals.

7- The infective stage of *Plasmodium* is called sporozoite.

8- The binary fission in *Paramecium* leads to the formation of 4 individuals.

9- The fever in *Plasmodium* infection is a result of the complete cycle in liver cells.

10- The Sexual cycle of *Plasmodium* in Female *Anopheles* occurs in the gut wall.

C. Complete the following sentences with the suitable answer:

(5 marks, each space 0.5 Marks)

1- Why male Anopheles can't transmit malaria to man? ……..

2- Why female Anopheles pours saliva when sucking blood of man?.....

3- In Malaria infection every 48 or 72 hrs a fever occurred which is a result of ……..

4- The chief mode of nutrition in Euglena is …….. where the food is manufactured photo-synthetically by …… as in plants.

5- The fresh water forms of Protozoa have a ……..which regulates the osmotic pressure.

6- The fast movement in Euglena is by ……..

7- The infective stage of *Entamoeba coli* is ……..

8- *Paramecium* reproduces asexually by …….. And sexually by ……

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مع خالص تمنياتنا بالنجاح و التوفيق

د./ شادية فريد حمادة د./ محمد فتحى أبو النور د./ إيمان أحمد الشباسى

إنتهت الأسئلة

Mansoura University **Faculty of science** **Zoology Department** **Subject: Zoology** **Course(s):Principals of cell biology, histology and genetics (Z101)**		**Educational year: 2012-2013** **Programs: Chemistry- Zoology, Chemistry- Botany, Microbiology, Environmental science** **Date: 19/8/2013** **Time Allowed: 2 hours** **Full Mark: 60 Mark**

Part 1. Cytology: (20 Mark)

A-Make a labeled diagram for each of the following:- **(10 Marks)**

1- Mitochondria. 2- Plasma membrane. 3-Lysosomes.

B- Mention the function for each of the following:- **(10 Marks)**

1- Smooth endoplasmic reticulum.

2- Lysosomes.

3- Nucleolus.

4- Cell membrane

Part 2. Histology: (20 Mark)

Choose the correct answer

1…….. is an example for exocrine gland.

a- Salivary gland b-Pancreas c-Liver

2-……exists in areas where absorption occurs.

a- Simple cuboidal b- Simple columnar c-Simple squamous

3-Transitional epithelium is found in ……

a- urinary bladder b-urethra c- a and b

4- ……..are avascular and polarized.

a- Epithelial tissues b-Connective tissue c- Nervous tissue

5-..... are present in the dorsal part of the nasal cavity.

a- Gustatory cells b-Olfactory cells c-Auditory cells

6- All of the following is an example of connective tissue except

a) Blood b) Bone c) Abdominal muscles

7- Cardiac muscles are attached to each other through .....

a) Tendons b) Intercalated discs c) Actin filaments

8- Inter-vertebral discs is an example of.....

a) Fibro cartilage b) Spongy bone c) Hyaline cartilage

9- Adipose tissue of hypodermis is an example of.....connective tissue.

a) Dense regular b) Supportive c) Loose

10- The jelly like ground substance of bone is .....

a) Hyaluronic acid b) Chondroitin sulfate c) Keratin sulfate

Part 3. Genetics: (20 Marks)

Write short notes on TWO of the follows: (10 marks each)

1) Explain the process of central dogma (protein expression)
2) Gel electrophoresis
3) State two different ways of DNA sequencing

Best wishes,

Dr. Doaa A. Sakr

, Dr. Mohamed E. Abdraboh

مجموعة السرايا ١١٤

جامعة المنصورة كلية العلوم قسم الرياضيات	المستوى الأول المادة: تفاضل وتكامل كود المادة: ر١١٢ برامج : الكيمياء - الكيمياء الحيوية - كيمياء وحيوان -كيمياء ونبات - جيولوجيا - جيوفيزياء - ميكروبيولوجى - علوم بيئة	الفصل الدراسي الصيفى دور سبتمبر ٢٠١٣ الزمن : ساعتان التاريخ:السبت: ٢٠١٣/٨/١٧ الدرجة الكلية : ٨٠ درجة

أجب عن الأسئلة الآتية

السؤال الأول: (٢٠ درجة)

(١) عين المجال والمدى للدوال الآتية:

$g(x) = \sqrt{x-3}$, $f(x) = \sqrt{x^2-25}$ ثم أوجد gof , fog. (١٠ درجات)

(٢) أوجد المجال والمدى للدالة $f(x) = \frac{x-2}{x+1}$ ، ثم إثبت ان لها معكوس واوجده. (١٠ درجات)

السؤال الثانى: (٢٠ درجة)

(١) إحسب النهايات الآتية: (١٢ درجة)

$(i)\ \lim_{x\to 0} \frac{e^{2x}-1}{x}$, $(ii)\ \lim_{x\to 0} \frac{1-cos2\,x}{x^2}$

$(iii)\ \lim_{x\to \infty} \left(\frac{x+3}{x}\right)^x$, $(iv)\ \lim_{x\to 0} \left(\frac{1}{x} - \frac{1}{sin\,x}\right)$

(٢) أوجد قيمة الثابت A لكى تكون الدالة الأتية متصلة عند $x = 0$. (٨ درجات)

السؤال الثالث: (٢٠ درجة)

(١) أوجد المشتقة الأولى للدوال الاتية: (١٢ درجة)

$(i)\ x^2 + x\,sin^{-1}y = y\,e^x$, $(ii)\ y = (sin\,x)^x$

$(iii)\ y = e^{-3x}\ ln(x^3+1)$, $(iv)\ y = tan^3(5x^2+1)$

(٢) أوجد معادلتى المماس والعمودى للمنحنى $y = x^3 - 2x^2 - 3$ عند النقطة $(x_0, y_0) = (1, -4)$.

(٨ درجات)

السؤال الرابع: (٢٠ درجة)

إحسب التكاملات الآتية:- (كل جزء ٤ درجات)

$(i)\ \int cos^4 x\ sin^3 x\,dx$, $(ii)\ \int_0^1 (x^3+1)^3\ x^2\,dx$

$(iii)\ \int \frac{e^{tan^{-1}x}}{1+x^2}\,dx$, $(iv)\ \int_0^{\pi} cos^2(3x)\,dx$, $(v)\ \int x^2\,e^x dx$

انتهت الأسئلة ،،، مع التمنيات بالنجاح والتفوق ...

أسرة التدريس...

المستوى : الأول المادة : جبر وهندسة كود المادة : (ر١١١)	كلية العلوم – قسم الرياضيات	دور: سبتمبر ٢٠١٣ الزمن : ساعتان التاريخ : ٢٠١٣/٨/١٧

البرامج: كيمياء-الكيمياء الحيوية- كيمياء وحيوان- ميكروبيولوجى- كيمياء ونبات-علوم بيئة- جيولوجيا- جيوفيزيقا

أجب عن الأسئلة الآتية: **الدرجة الكلية :** ٨٠ درجة

السؤال الأول:

أ – باستخدام مبدأ الاستنتاج الرياضي اثبت أن :

$$1^2 + 2^2 + 3^2 + \cdots + n^2 = \frac{n}{6}(n+1)(2n+1)$$ (١٠ درجات)

ب – حلل الكسر $\frac{16x+7}{(3x+1)^2(x+2)}$ إلى كسوره الجزيئية (١٠ درجات)

السؤال الثاني:

أ – عين معادلة القطع المكافىء الذى رأسه (2- , 4) و بؤرته (2- , 6) ثم اوجد طول الوتر البؤرى العمودى وكذلك معادلتى المحور والدليل مع الرسم (١٢ درجة)

ب – اوجد المقياس والسعة للعدد المركب $z = \frac{3+i}{1-3i} + \frac{2-5i}{1+3i}$. (٨ درجات)

السؤال الثالث:

أ- باستخدام طريقة كرامر اوجد حل المعادلات الآتية:

$x - 3y + z = 6$, $x + y + z = 2$, $3x + 2y + z = 3$ (١٠ درجات)

ب- اكتب معادلة القطع الناقص $16x^2 + 9y^2 - 18y + 64x - 71 = 0$ في الصورة القياسية موضحا جميع المعلومات الخاصة به مع الرسم . (١٠ درجات)

السؤال الرابع :

أ- اوجد نقطة تقاطع المستقيمين $3x - 2y + 1 = 0$, $x + 2y - 5 = 0$ والزاوية بينهما ثم اوجد معادلة المستقيم الذي يمر بنقطة التقاطع ويوازى المستقيم $2x + 3y + 7 = 0$ (١٠ درجات)

ب – اذا كانت $z = (1 - i\sqrt{3})$ اوجد قيمة $z^{\frac{4}{3}}$ (١٠ درجات)

مع أطيب التمنيات بالتوفيق: اسرة التدريس

Mansoura University
Faculty of Science
Botany Department
El-Mansoura, Egypt

جامعة المنصورة
كلية العلوم
قسم النبات
المنصورة - مصر

Final Examination in Botany
Summer course : September. 2013

Educational Year: 1st Level **Program : Biology**
Subject: (B102) **Courses: Basics of plant Physiology**
Time: 2 hrs **Date: 28 /8/2013** **Full mark:** 60

Q1: Complete the missing in the following :- (10 marks)

1- Fixation of CO_2 into sugars in green tissues occurs through ..... cycle during ..... .
2- In the aerobic conditions CO_2 is released through.....cycle during the process of .....
3- Fermentation of sugars under anaerobic conditions produces ..... + ...
4- Light causes ..... of the ..... pump in the guard cells ,Where ..... ions enter ,flollowed by ..... of the stomata .

Q2: Choose the correct answer : (10 marks) .

1- Appearance of water drops in the early morning on leaf margins and tips is knows as (Transpiration – Guttation) .
2- NAD is considered as (Coenzyme – enzyme inhibitor) .
3- Heavy meals are considered as (Competitive inhibitors – Non.Competitive inhibitors).
4- Passive absorption of water depends on (osmotic pressure – transpiration).
5- Permeability of plant cells to ionized substances includes (Active absorption – passive absorption – or both) .
6- Amylase enzyme causes hydrolysis of (starch – fats) .
7- Accumulation of the end products causes (increase in enzyme activity – decreases enzyme activity) .
8- Terminal oxidation during aerobic respiration prouduces (ATP – H_2O – or both).
9- Aldolase enzyme causes splitting of (Fructose 1,6 – Di [P] – Fructose-6-[P])
10- Succinic dehydrogenase is (Isomerase – Transferase – Oxido reductase) .

Q3: Put (√) or (×) and Correct the wrong answer : (10 marks) .

1- Guttation is due to more water absorption at night by the root . ( )
2- Light reactions during photosynthesis consumes oxygen . ( )
3- Glycolysis causes break down of sugars into mevalonic acid . ( )

4- The starch sugar hypothesis explains the movement of stomata . ( )
5- Gelation is the conversion of Gel to Sol by cooling . ( )
6- Adsorption is a character of the colloids . ( )
7- Ca^{++} ions antagonise Na^{+} ions at the plasma membrane . ( )
8- Lyases are enzymes capable of conversion of the substrate after using water. ( )
9- The hypertonic solution causes increase in cell turgidity . ( )
10- The Competitive inhibitor of enzyme action is not similar to the substrate molecule . ( )

Q4: Write Shortly On : (30 marks)

1- The role of osmosis in plant life .
2- Krebs cycle .(Diagram only)
3- External factors affecting transpiration .
4- Permeability of the plasma membrane to non electrolytes .
5- Transferase and isomerase enzymes with example .
6- Root pressure .

" Best of Luck "

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