MODUL EMaS JPNTrg

MODULE 3
BIOLOGY FORM 4

Chapter 6 : Nutrition

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CHAPTER 6: NUTRITION

SECTION A: OBJECTIVE QUESTION

1. Which of the following process is autotrophic nutrition?

   A. parasitism
   B. saprophytism
   C. holozoic
   D. chemosynthesis

2. Which of the following definition is holozoic?

   A. produce organic molecule from carbon dioxide and water using light
   B. ingests food and digests it within the body
   C. absorbs nutrients from dead organic material
   D. absorbs nutrients from another living organism

3. Which of the following factors affect the daily energy requirement of a person?

I	Age	II	Blood group
III	Occupation	IV	Body weight

   A. I & II only
   B. I, II & III only
   C. I, II & IV only
   D. I, III & IV only

4. Based on the food guide pyramid, which of the following food we have to eat more

   A. meat and alternative
   B. fruits and vegetable
   C. lipids, salt and sugar
   D. rice and alternative

5. Which of the following substance can cause osteoporosis?

   A. protein
   B. mineral
   C. water
   D. lipid

6.

- Protein deficiency
- The child becomes very thin with a wrinkled skin
- Mental and physical development is impaired

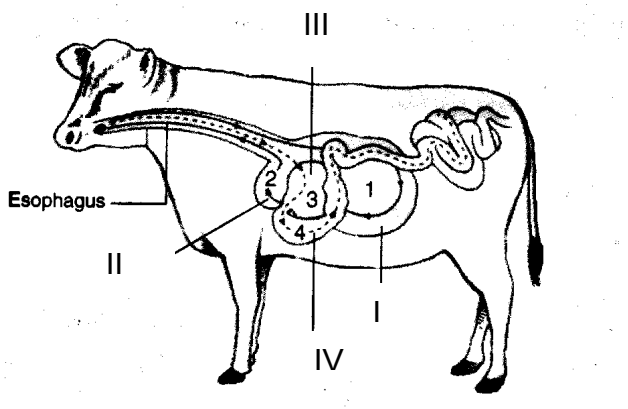
The above statement is referred to

A. merasmus
B. vitamin C
C. scurvy
D. blind color

7. What is the name of semi-fluid that was found in stomach?

A. bolus
B. chyme
C. bile
D. saliva

8.



Which part of the stomach contain microorganism that can digest cellulose?

A. I & II only
B. I & III only
C. II &IV only
D. I, II, III &IV

9. Which of the following are adaptation of small intestine in absorption

I long
II line up by villi
III epithelial of villus have microvillus
IV contain secretion glands

A. I & II only
B. II & III only
C. II & IV only
D. I, II & III only

10. Excess amino acids cannot be stored in the body and broken down in the liver by a process

A. assimilation
B. absorption
C. deamination
D. detoxification

11. How can we avoid constipation?

A. eat more carbohydrates
B. eat more lipid
C. eat more fibre
D. eat more water

12. Constipation can leads

A. small intestine cancer
B. colon cancer
C. gastric
D. ulcer

13. Gastric ulcer because of

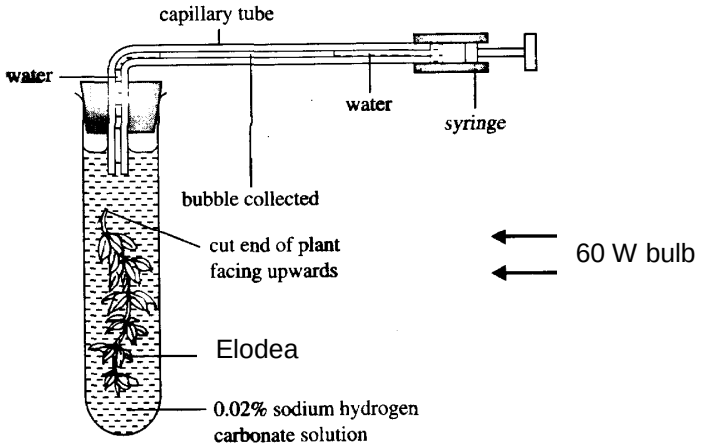
I excess alcohol consumption
II drink more orange juice
III do not eat
IV stress

A. I & II only
B. I & IV only
C. I, II & III only
D. I, II & IV only

14. Patient with anorexia nervosa may seek treatment in the form of

A. counseling
B. medication
C. religion
D. health

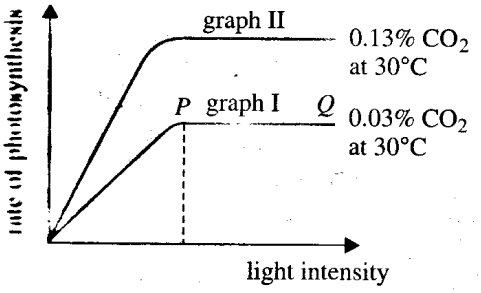
15. The diagram shows an experiment on photosynthesis



Water bath at 30° C

Which of the following will increase the rate at which gas bubbles are released in the experiment?

A. using a 20 W bulb
B. using a water bath at 50°C
C. replacing *Elodea* with *Hydrilla*
D. using sodium hydrogen carbornate solution 1.0 %



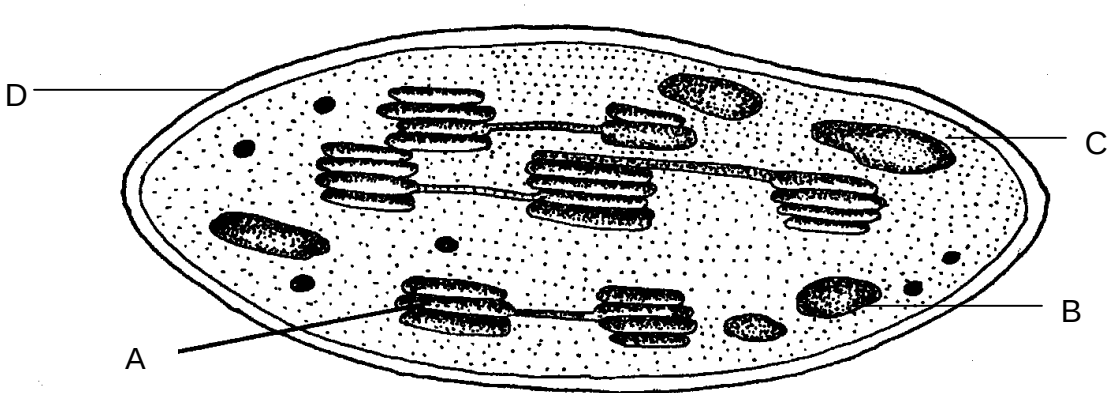
16. Which factors are limiting factor in the graph?

A. light intensity & temperature
B. carbon dioxide concentration & temperature
C. light intensity
D. temperature

17. What is the process that water split into hydrogen ion and hydroxyl ion?

A. Hydrolysis
B. Lysis
C. Photolysis
D. Condensation

18. Which part of the chloroplast that light reaction takes place?



19. Genetic engineering is a technique

A. seed are sown directly
B. plant culture in solution
C. plant suspended in special chamber
D. transfer of beneficial genes from one organism to another organism

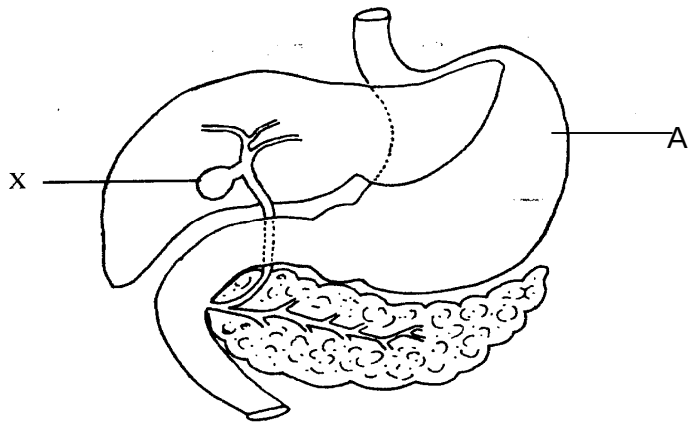
20.

Milk is heated to 63^{o}C for 30 minutes or 72^{o}C for 15 second followed by rapid cooling to below 10^{o}C

A. fermentation
B. canning
C. cooking
D. pasteurization

SECTION B: STRUCTURE QUESTION

1.



(a) Named juice that secretes in A

……

[1 mark]

(b) Give two function of hydrochloric acid in A

1. ……

2. ……

[2 mark]

(c) Explain how the food digested in A

……

……

……

……

……

……

[4 mark]

(d) Explain what happen to the same type of food when enter in small intestine?

……

……

……

……

……

[5 mark]

2. (a) List out the factors that effect photosynthesis

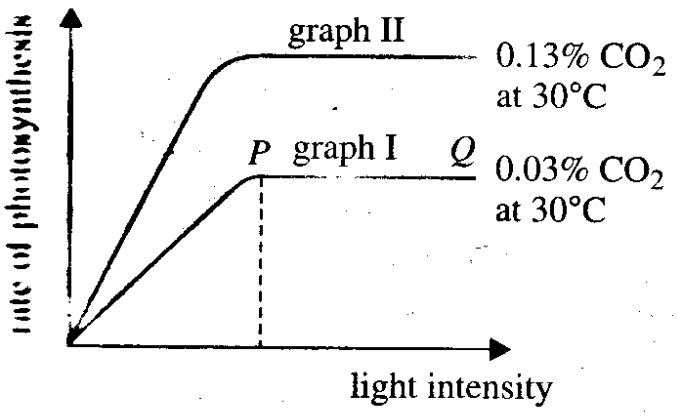
1. ……..

2. ……..

3. ……..

[3 mark]

(b)



Explain graph I and II

……

……

……

……

[4 mark]

(c) (i) Explain what is mean by limiting factor

……

[1 mark]

(ii) What is the limiting factors in the graph?

……

[1 mark]

(d) Green house is a place where we can control the factor that effect photosynthesis. Explain how those factors can be controlled?

……

……

……

……

[3 mark]

SECTION C: ESSEI QUESTION

1. (a) (i) Draw a cross section of a dicotyledonous leaf to show tissues that involved in photosynthesis

(ii) Based on a diagrams, explain the adaptation of leaf to increase photosynthesis

[10 mark]

(b) Ali has a blocked bile duct. He takes fried rice with fried egg and 'teh tarik' as his breakfast.
Explain how digestive process in his alimentary canal and how his problem affected the digestion of his food.

[10mark]

SECTION D: PAPER 3

1. Experiment carried out to determine effect of light intensity on rate of photosynthesis as shown in figure 3.

   Concentration of carbon dioxide is constant by using 1 g of sodium hydrogen carbonates dissolved in water. The apparatus is set up 60cm from light sources. Gas that release can replace volume of water as shown figure 4. Volume of water that was replace in burette is a volume of gas released by photosynthesis.

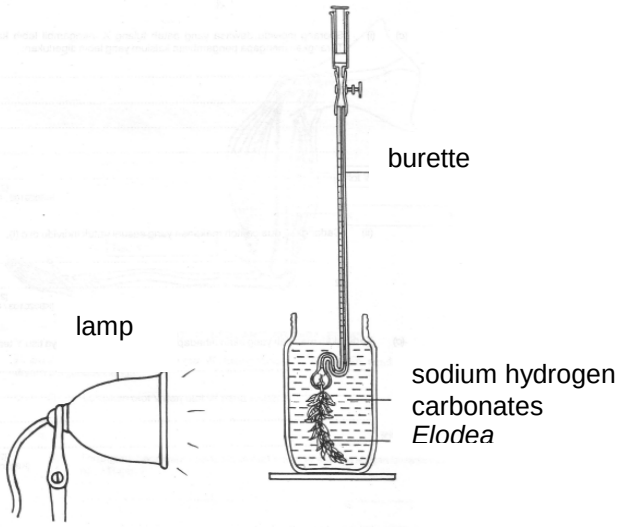
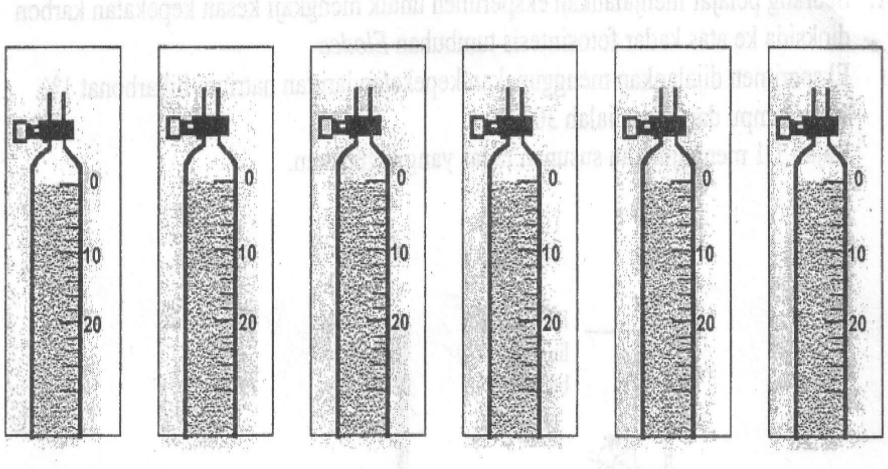


Figure 3

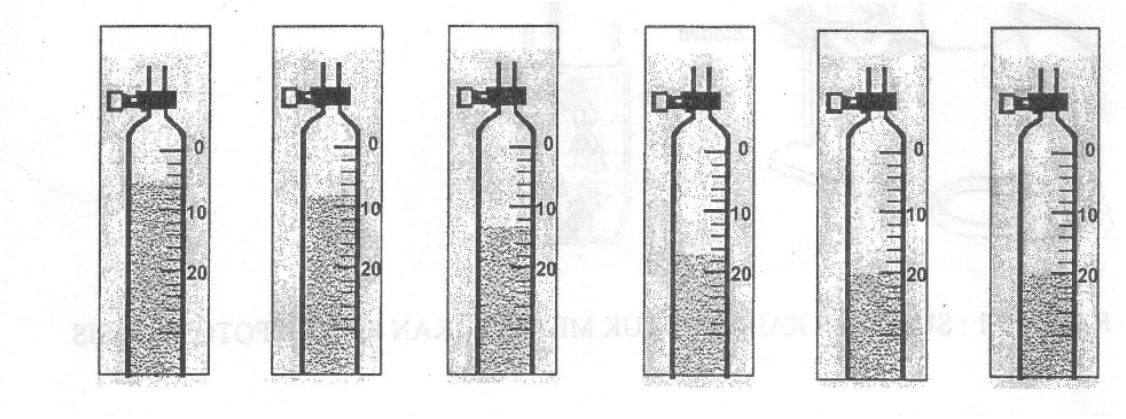
The apparatus is change at different distance 50cm, 40cm, 30cm, 20cm and 10cm as shown in figure 4.

After 5 minutes, bubbles release replace volume of water as shown in table 1.



Distance from light source	60cm	50cm	40cm	30cm	20cm	10cm

Figure 4



Distance from light source	60cm	50cm	40cm	30cm	20cm	10cm
Volume of oxygen (cm^3)						

Table 1

(a) Record volume of oxygen release in table 1

[*3marks*]

(b) (i) State two observation from table 1

1. ……

……

2. ……

……

[*3marks*]

(ii) State the inference which corresponds to the observation in (b) (i).

1 ……

……

3. ……

……

[*3marks*]

(c) Complete table 2 based on this experiment

Variable	Method to handle the variable
Manipulated variable …….. ……..	…… ……
Responding variable …….. ……..	…… ……
Controlled variable …….. ……..	…… ……

Table 2

[3*marks*]

(d) State the hypothesis for the experiment

……

……

……

[3*marks*]

(e) (i) Based on table 1, construct a table and record the result of the experiment which includes the following aspects:

- Distance from light source
- Volume of oxygen release
- Rate of photosynthesis

Rate of photosynthesis = V/t

V= Volume of oxygen cm^3

t= time, 5 minutes

[3*marks*]

(ii) On the graph provided, draw the graph of rate of photosynthesis against distance of light source [3*marks*]

(f) Based on the graph, state the relationship between light intensity and rate of photosynthesis

……

……

……

[3marks]

(g) This experiment was repeated using two grams of sodium hydrogen carbonate which has dissolved in water. The apparatus is set up 30cm from light source. Predict volume of oxygen gas that will produce and explain why?.

……

……

……

[3marks]

(h) Based on the result of the experiment, what can you deduce about the rate of photosynthesis?

……

……

……

[3marks]

(i) Another group of students investigate other factors that effect the rate of photosynthesis.

water	Number of stomata	temperature
Concentration of chlorophyll	Concentration of carbon dioxide	

Classify the above factors into environmental factor and intrinsic factor that affected the rate of photosynthesis.

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[3marks]