SAMPEL PERCUMA

Trial STPM 2023 Biologi Semester 1 Kelantan

Set penuh: Kertas Percubaan STPM

Sem 1 · Biologi

Sampel ini: 8 muka surat. Set penuh ada:

- 3 fail PDF
- Semester 1: kertas percubaan (trial) negeri, subjek yang dipilih + skema
- Blueprint 30 hari Semester 1 (setiap subjek)
- Semester 3: percubaan 2024, 10 subjek, banyak negeri, soalan + skema dalam satu fail

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Sampel bermula di muka surat sebelah

Nombor kad pengenalan..... Nombor pusat/angka giliran.....

964/1 **STPM 2023**

BIOLOGY (BIOLOGI)
PAPER 1 (KERTAS 1)
One and a half hours(1 jam 30 minit)
SIJIL TINGGI PERSEKOLAHAN MALAYSIA
(MALAYSIA HIGHER SCHOOL CERTIFICATE)

For Examiner usage	
Section A	
15 questions	
Section B	
16	
17	
Section C	
Total	

Instructions to candidates:

DO NOT OPEN THIS QUESTION PAPER UNTIL YOU ARE ALLOWED TO DO SO
Answer all questions in Section A.
Answer all questions in Section B.
Answer two questions only in Section C.
All working should be shown. For numerical answers, unit should be quoted wherever appropriate.
Answer may be written in English or Malay.

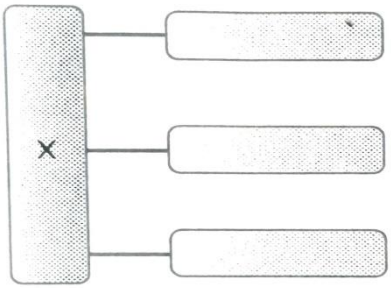
This question paper consists of 13 printed pages.

STPM 2023 - 964/1

Section A [15 *marks*]

*Answer **all** questions.*

1. The diagram below shows a simple drawing of triglyceride.



Which statement is **not** true about molecule ***X*** before condensation to form triglyceride?

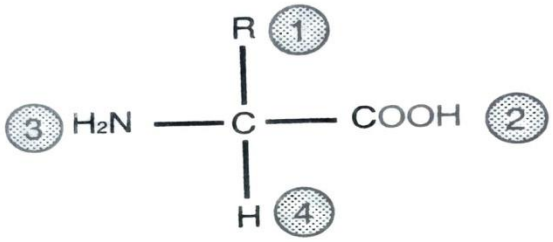
A. It is a type of alcohol.

B. It contains three hydroxyl group.

C. It forms ester bonds with fatty acids.

D. Its formula is $C_3H_6O_3$.

2. The diagram below shows an amino acid.



The peptide bond is formed between groups

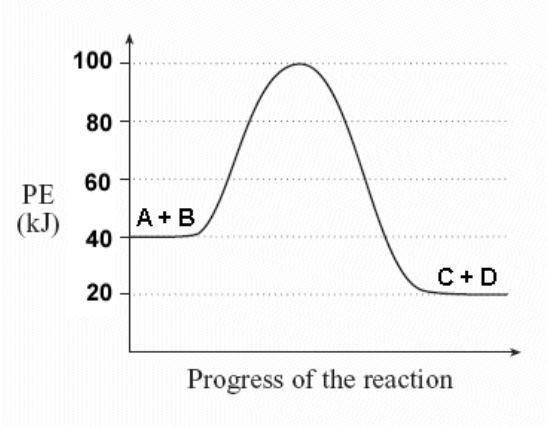
A. 1 and 2

B. 1 and 4

C. 2 and 3

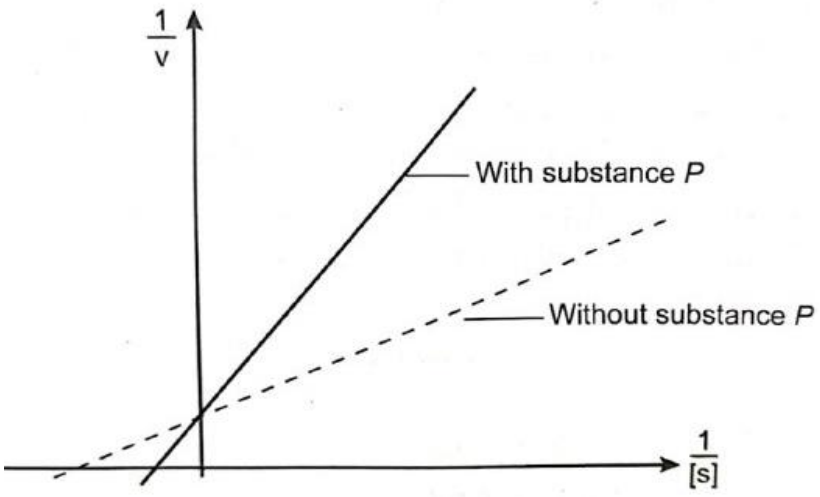
D. 1 and 3

7. Which of the following is **true** pertaining potential energy graph of the reaction without enzyme below:



A. The reaction requires 100 kJ energy to achieve transitional state.
B. When enzyme is added, the activation energy is said to be lowered if the energy required for the reaction is lesser than 60 kJ.
C. The transitional state can be obtained if the activation energy is not reached.
D. The higher the activation energy, the faster the chemical reaction of [A+B] to form [C+D].

8. The graph below shows the Lineweaver-Burke plot for an enzyme-catalysed reaction with and without the presence of substance P



12.What are the products that can be formed from carbon atoms in a glucose molecule during anaerobic respiration in an yeast cell?

I Carbon dioxide

II Pyruvate

III Ethanol

IV Lactate

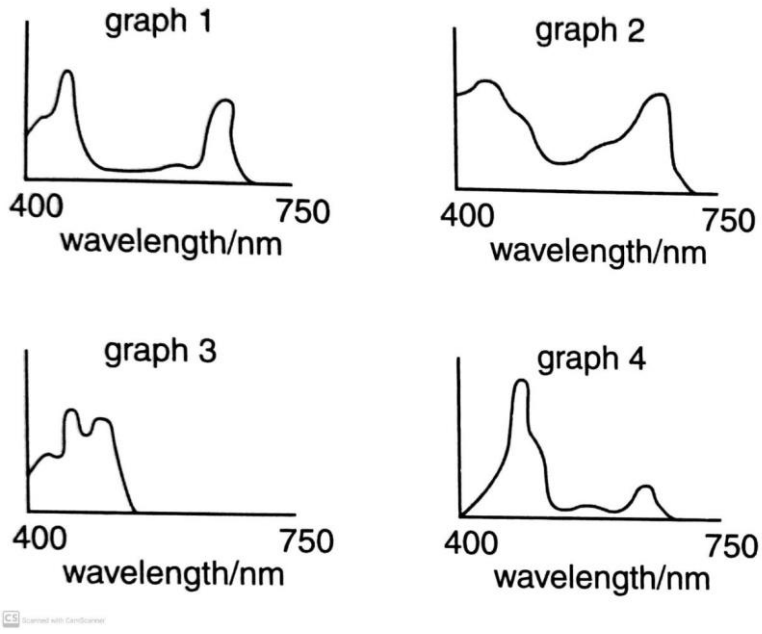
A. I only

B. I and III

C. II and III

D. II and IV

13. Three of the four graphs below show the absorption spectra of photosynthetic pigments. The other graph shows the action spectrum of photosynthesis for a spinach plant containing these pigments. The x-axes show wavelength. Three of the y-axes show the percentage light absorbed while the other shows the rate of photosynthesis measured by the rate of evolution of oxygen.

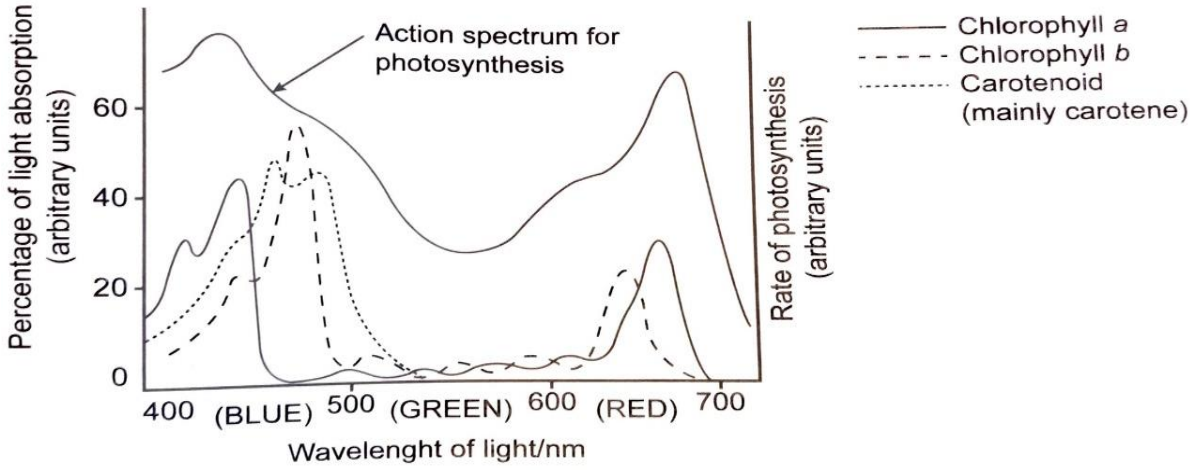


Section B [15 marks]

Answer **all** *questions.*

Write the answers in the spaces provided.

16. The chlorophyll in a pondweed consisted of several important photosynthetic pigments, that are, chlorophyll a which is blue-green, chlorophyll b which is green and carotenoid which is orange. The graph below shows the absorption and action spectrum of these pigments.



(a) Name analytical technique to separate pondweed pigments.

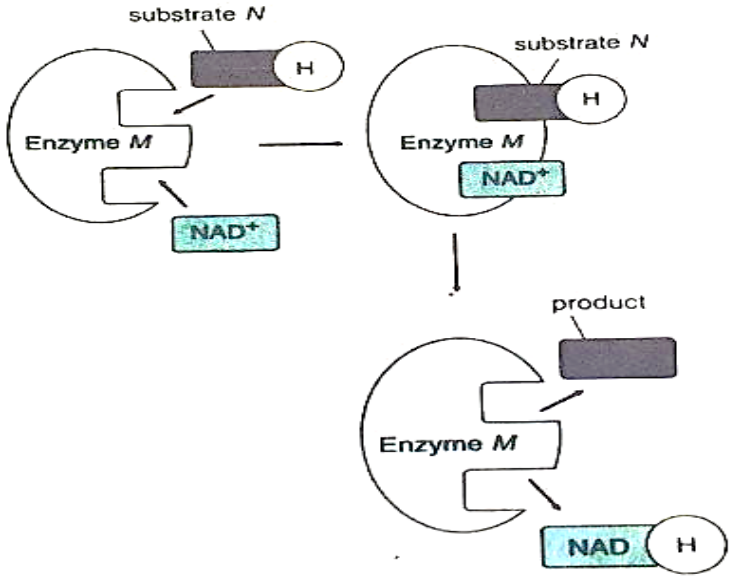
[1 mark]

……

(b) State a pigment that has smallest size of molecule according to R_f value based on the graph. [1 mark]

……

17 The diagram below shows the reaction of enzyme ***M*** on substrate ***N***. Enzyme ***M*** requires a cofactor for its catalytic activity.



(a) (i) What is a cofactor? [1 *mark*]

……..

(ii) How do cofactors work in assisting an enzymatic reaction? [1 *mark*]

……..

(b) (i) Based on the diagram above, identify the type of cofactor for enzyme ***M***. [1 *mark*]

……..

(ii) What is the function of this cofactor? [1 *mark*]

……..

Section C [30 *marks*]
Answer **two** questions only in this section.

18. a) With the aid of a labelled diagram, explain the structure of the following plant tissues:

i) Parenchyma tissue [4 marks]

ii) Sclerenchyma tissue [4 marks]

b) Describe the formation of exocrine and endocrine glands [7 marks]

19. (a) Describe the main stages of glycolysis in cells. [9 marks]

(b) Describe what is meant by oxidative phosphorylation. [6 marks]

20. (a) Light is an important factor in the process of photosynthesis in plants. Describe how NADPH and ATP molecules are generated during the light dependent reaction. [10 marks]

(b) Using a suitable example, state the differences between C_3 and C_4 plants. [5 marks]

Kertas soalan tamat

Answers :

1. D

2. C

3. D

4. C

5 C

6.B

7. B

8. B

9. C

10. B

11. A

12.B

13.B

14 B

15 A

16. (a) Paper chromatography [1 mark]

(b) Carotone (carotenoid) [1 mark]

(c) - Absorption spectrum represents specific absorbance of isolated chloroplast pigment **whereas** action spectrum represents the actual rate of a physiological activity in the living cells.

- Absorption spectrum is a graph of the relative absorption of different wavelenghts of

light by a pigment **whereas** action spectrum is a graph showing the effectiveness of different wavelengths of liquid in stimulating a process (rate of photosynthesis).

[2 marks]

TAMAT SAMPEL

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