SAMPEL PERCUMA

# Trial STPM 2022 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** **TRIAL STPM 2022**

# BIOLOGY (BIOLOGI) SET 1
# 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** | |

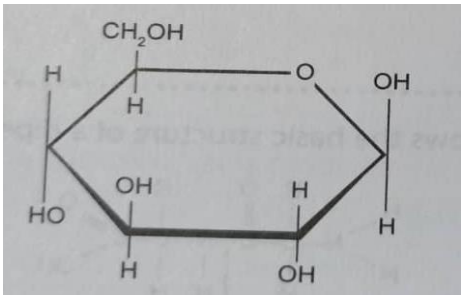
**Instructions to candidates:**

**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 9 printed pages.**

**Section A** [15*marks*]
Answer **all** questions in this section.

**1.** The diagram below shows the structure of a molecule.




The molecule that is produced when these molecules condense to form a polymer is

**A.** Amylose
**B.** Cellulose
**C.** Phospholipid
**D.** Protein

**2.** Which of the following enables proteins to function as buffer?

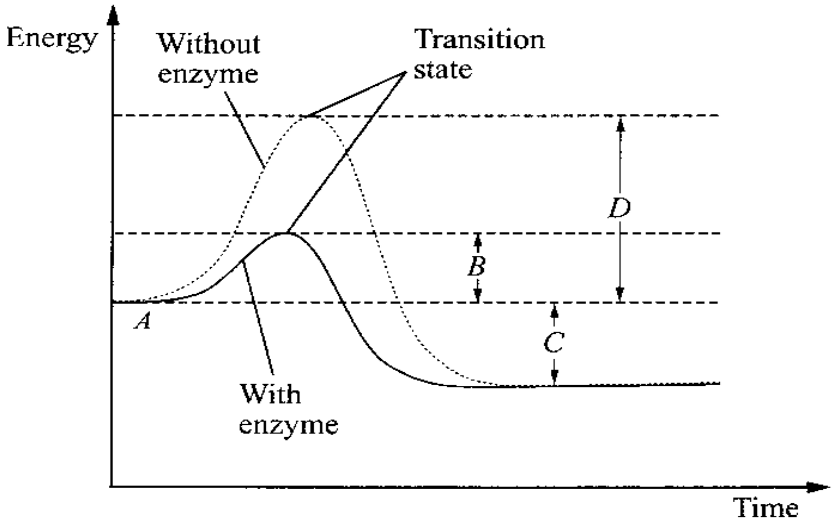
**A.** Proteins contain peptides bonds.
**B.** Proteins are soluble in water.
**C.** Proteins are amphoteric.
**D.** Proteins are non-polar molecules.

**3.** Which of the following statements about a deoxyribonucleic acid molecules are true?

I It consists of two strand which are antiparallel to one another.
II It contains the bases adenine, quinine, thymine and cytosine.
III It contains genetic information in its nucleotides.
IV Its sugar unit is deoxyribose which has a hydroxyl group on the second carbon.

**A.** I and II
**B.** I and IV
**C.** I, II and III
**D.** II, III and IV

**7** The graph below shows the reaction rate with and without an enzyme. Which of the following is the activation energy of the enzyme-catalysed reaction?




**8** The table below shows classes of enzymes and examples of enzymes involved in the reactions that they catalysed.

| *Class of enzyme* | *Example of enzyme in reaction* |
|---|---|
| I Oxydoreductase<br>II Hydrolase<br>III Lyase<br>IV Isomerase | (a) Glucose-1-phosphate $\xrightarrow{\text{phosphoglucomutase}}$ glucose-6-phosphate<br>(b) Pyruvic acid $\xrightarrow{\text{pyruvate decarboxylase}}$ ethanol + carbon dioxide<br>(c) Sucrose $\xrightarrow{\text{sucrase}}$ fructose + glucose<br>(d) Ethanal + NADH $\xrightarrow{\text{alcohol dehydrogenase}}$ ethanol + $NAD^+$ |

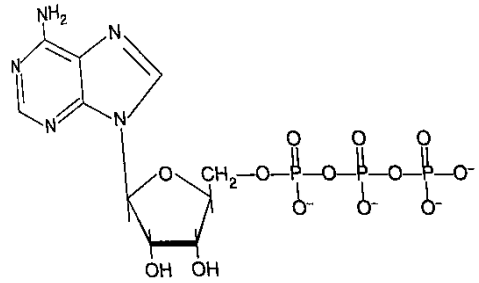
Which of the following is correct for the classes of enzymes and the examples of enzymes?

| | I | II | III | IV |
|---|---|---|---|---|
| **A** | (a) | (c) | (d) | (b) |
| **B** | (b) | (a) | (c) | (d) |
| **C** | (c) | (d) | (b) | (a) |
| **D** | (d) | (c) | (b) | (a) |

**9** The following are the applications of enzyme immobilisation, **except**

**A** production of insulin for diabetic patients.
**B** production of lactose free milk.
**C** a biosensor to detect urea in blood or urine sample.
**D** a dipstick biosensor to monitor blood glucose level.

**10** The diagram shows the structure of ATP.




Which of the following are true about ATP?

I It is a nucleotide molecule.
II It has a purine base.
III It acts as an intermediate energy carrier.
IV Synthesis of the molecule is an endergonic process.

**A** I and IV
**B** I, II and III
**C** II, III and IV
**D** I, II, III and IV

**11** What are the products of anaerobic respiration in animal cells?

I ATP
II Carbon dioxide
III Ethanol
IV Lactic acid

**A** I and II
**B** I and IV
**C** I, III and IV
**D** I, II, III and IV

**12** Which of the following are the characteristics of bacteria *Nitrosomonas* and *Nitrobacter*?

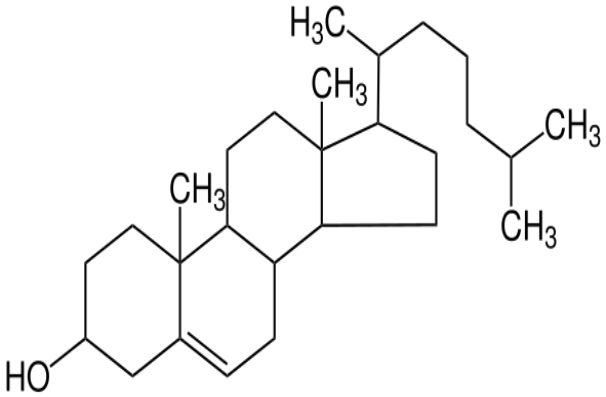
I They are chemoautotrophs.
II They use carbon dioxide as an inorganic carbon source.

**Section B** [15 marks]

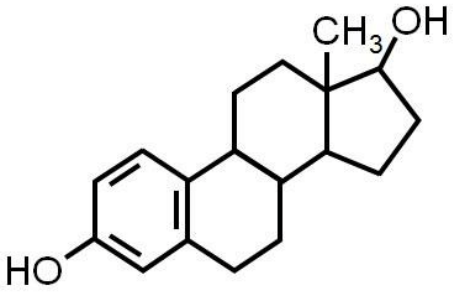
*Answer* **all** *questions in this section.*

*Write the answers in the spaces provided.*

**16** The diagram below shows the structure of lipids.




***X***




***Y***

(a) Name the type of lipids shown in the diagram. [1 mark]

……

(b) Name ***X*** and ***Y*** [2 marks]

***X***:……

***Y***:……

(c) Draw a circle that shows hydrophilic end at structure ***X***. [1 mark]

(d) State a characteristic of this lipids based on its polarity.Explain your answer.

[2 marks]

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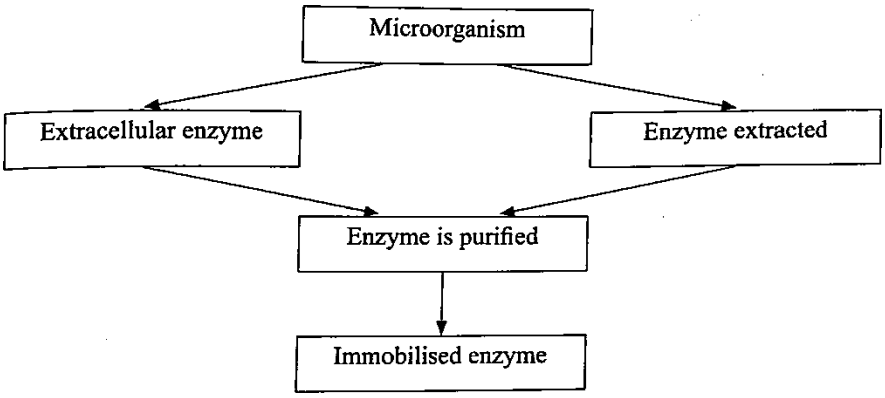
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(e) State a function of ***X*** in the plasma membrane. [1 mark]

……

……

**17** The diagram below shows two methods in which enzymes can be produced for industrial processes.




(a) What is meant by 'enzyme immobilisation'? [2 marks]

……

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(b) Explain briefly three ways in which enzymes can be immobilized. [3 marks]

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(c) State three advantages of using immobilized enzymes. [3 marks]

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

**18** (a) Describe five factors which would affect the rate of diffusion of molecules across a cell's plasma membrane. [10 marks]

(b) Describe the relationship between water potential with solute potential and pressure potential in plants. [5 marks]

**19** According to the International Union of Biochemistry (IUB), enzymes are divided into several classes.

(a) Define enzyme and state the different classes of enzymes. [6 marks]

(b) Choose three classes of the enzyme and describe their functions by referring to an examples. [9 marks]

**20** (a) Explain the effect of light intensity on the reactions which occur in photosynthesis. [5 marks]

(b) Explain the limiting factor which affect the rate of photosynthesis. [10 marks]

# Scheme for Trial STPM Biology Term 1 2022 Set 1

## Section A

| Nu. | Answer |
|---|---|
| 1 | B |
| 2 | C |
| 3 | C |
| 4 | B |
| 5 | D |
| 6 | D |
| 7 | B |
| 8 | D |
| 9 | A |
| 10 | D |
| 11 | B |
| 12 | A |
| 13 | C |
| 14 | B |
| 15 | C |

## Section B

16. (a) Steroids **[1 mark]**

(b) ***X***: Cholesterol

***Y***: Oestrogen **[2 marks]**

TAMAT SAMPEL

# Suka sampel ini?

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