CHEMISTRY ONLINE
TUITION

Phone: +442081445350

www.chemistryonlinetuition.com

Email:asherrana@chemistryonlinetuition.com

BIOLOGY

BIOLOGICAL MOLECULE

Level & Board	AQA (A-LEVEL)
TOPIC:	LIPIDS
PAPER TYPE:	SOLUTION - 2
TOTAL QUESTIONS	5
TOTAL MARKS	37

Lipids - 2

1.

(a)

RNA - Bacterium & HIV

Cell wall - Bacterium

Enzyme Molecule - Bacterium & HIV

Capsid – HIV

(b) The DNA polymerase joins the free nucleotides together to form a phosphodiester bond. This means the nucleotides are bonded together forming new DNA

(c)

DNA is double stranded whereas mRNA is single stranded

mRNA has introns and DNA doesn't

DNA is longer and mRNA is shorter

OR

DNA is a self-replicating molecule that carries genetic information. mRNA is a product of transcription that determines the amino acid sequence of a specific protein. DNA has a double-stranded structure. mRNA has a single-stranded structure.

2.

(a) Triglyceride contains 3 fatty acids whereas phospholipid molecule contains 2 fatty acids and a phosphate molecule

OR

The main structural difference between a phospholipid and a triglyceride is that a phospholipid has a highly polar phosphate head group. Additionally a phospholipid has two fatty acid tails, while a triglyceride has three fatty acid tails.

(b)

Add a few drops of ethanol to the food solution.

Shake the test tube and leave for one minute.

Pour the ethanol into a test tube of water.

If the solution turns cloudy, the food contains lipids.

(c) Unsaturated fats, which are liquid at room temperature, are different from saturated fats because they contain one or more double bonds and fewer hydrogen atoms on their carbon chains. Unsaturated fats come from plants and occur in the following kinds of foods: Olives.

(d) The fat substitute substrate is not complementary shape to the lipase enzymes active site therefore cannot bind/fit to the active site meaning enzyme substrate complex cannot form.

(e) Its too big

3.

(a) ATP is made from ADP and a phosphate molecule by the enzyme ATP synthase

(b)

To provide energy from metabolic reactions such as transport

To provide energy for the breaking of large molecules into smaller ones e.g.) starch into glucose.

(c) A 3D image was produced

(d) Cristae

(e) MIA

magnification=image/actual

8.1cm x10 81mm x1000 81000um

I am Sorry !!!!!

magnification=81000/4

magnification= 20250 times

4.

(a)

Transport through a channel protein Q

Transport of small, non-polar molecules P

Transport of glucose with sodium ions S

(b) Y is an enzyme, where enzyme substrate complexes are made that makes cellulose join to Beta glucose

(c) Cell wall forms outside cell surface membrane, has cellulose on it on the outside

(d) Hydrogen

5.

(a)

Glucose

Fructose

(b)

0 - 1.17×10^{-3}

2 - 1.50×10^{-3}

4 - 1.83×10^{-3}

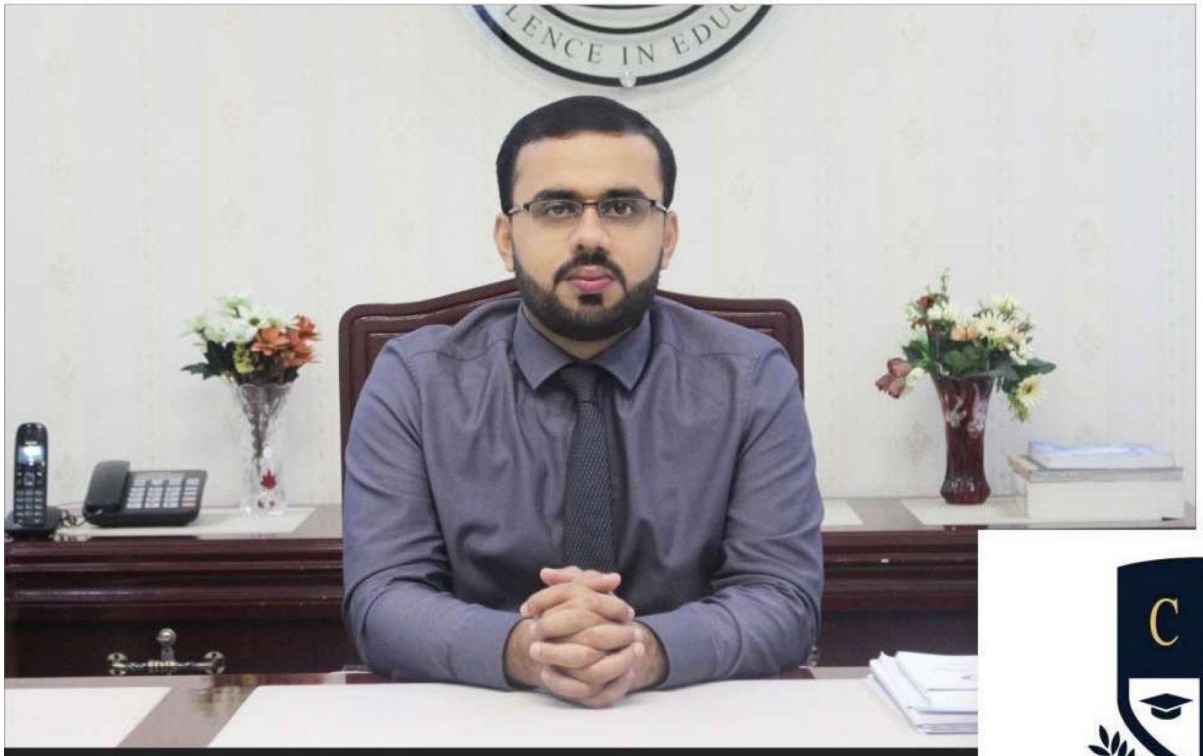
6 - 2.5×10^{-3}

8 - 3.33×10^{-3}

10 - 4×10^{-3}

12 - 4×10^{-3}

(c) As the days increase the rate of hydrolysis of sucrose by SPS increases. This shows that sucrose hydrolysis in linked to some aspects of growth. There is faster hydrolysis SPS activity as plant grows up to 8 days. Growth remains the same after 8 days because SPS activity is levelling off.



DR. ASHAR RANA

M.B.B.S / MS. CHEMISTRY

CHEMISTRY ONLINE TUITION

Phone: +442081445350
www.chemistryonlinetuition.com
Email: asherrana@chemistryonlinetuition.com

- Founder & CEO of Chemistry Online Tuition Ltd.
- Completed Medicine (M.B.B.S) in 2007
- Tutoring students in UK and worldwide since 2008
- CIE & EDEXCEL Examiner since 2015
- Chemistry, Physics, Math's and Biology Tutor

CONTACT INFORMATION FOR
CHEMISTRY ONLINE TUITION

- UK Contact: 02081445350
- International Phone/WhatsApp: 00442081445350
- Website: www.chemistryonlinetuition.com
- Email: asherrana@chemistryonlinetuition.com

Address: 210-Old Brompton Road, London SW5 OBS, UK