This is a Class 1 exam

Lebanon Evangelical School for Boys and Girls

...lighting the fires that burn for eternity...

Loueizeh - Baabda

Lebanon Evangelical School

for Boys and Girls Loueizeh - Baabda

SE01 Exam

09NOV2026

Do NOT write in this box. Your MARK will be placed here.

Subject :	Biology	
Class :	9A	
Teacher :	Miss Rahmeh Hilal	
Duration :	1 hour	
You are to answer the questions to this exam on : this exam paper		
Your name :		*Time taken to complete exam*
Your Class :		
Exam Room :		
How many sheets, including cover sheet :		

- Do not open this paper until the teacher in charge instructs you to do so.
- The most important thing to remember in taking an exam is NEVER PANIC.
- If you are caught cheating in this exam, you will be awarded zero for ALL exams that are taken on this day.

Q1.

Biologists classify organisms into different groups. Two of these groups are bacteria and fungi. Complete the passage about bacteria by writing a suitable word or words in each blank space.

(7)

Bacteria are small ..... celled organisms. They have a cell membrane and a cell ..... , made of peptidoglycan (glycoproteins).

Some bacteria are able to use the energy from the Sun to carry out ..... but other bacteria are ..... and feed on dead and decaying organisms.

Bacterial cells do not have a nucleus but most of their genetic material is contained in a circular ..... of DNA. They also have small circles of DNA called ..... in their cytoplasm.

Some bacteria are used by humans in food production.

Other bacteria, such as Pneumococcus, cause disease and so are called ..... .

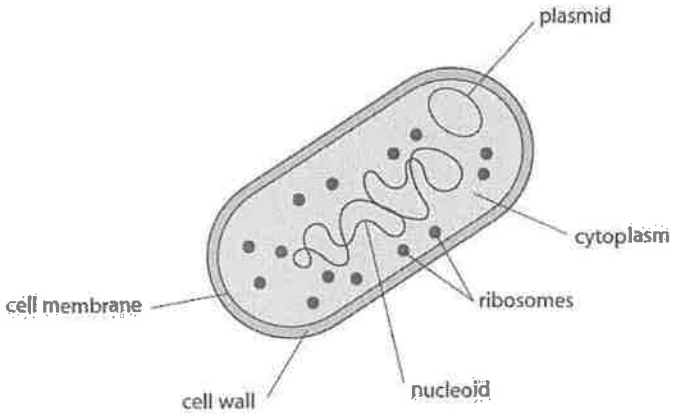
(Total for question 1 = 7 marks)

Q2.

Answer the questions with a cross in the boxes you think are correct ☒. If you change your mind about an answer, put a line through the box ☒ and then mark your new answer with a cross ☒.

P. multocida is a bacterium that causes cholera in chickens.

The diagram shows the bacterium.



(a) Give two structures in this bacterium that are also found in all eukaryotic cells.

(2)

1 .....

2 .....

(b) Scientists investigated the survival of chickens injected with normal *P. multocida* or with weakened *P. multocida*.

The table shows the scientists' results.

Type of injection	Result
normal *P. multocida*	chickens die
weakened *P. multocida*	chickens stay alive

What is a correct conclusion about *P. multocida* from these results?

(1)

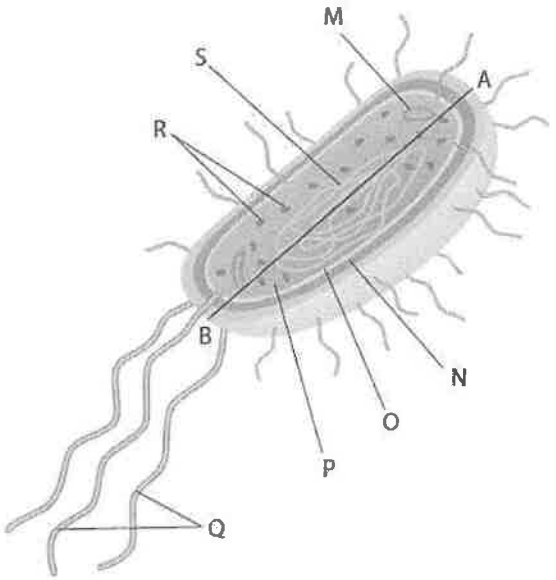
☒ **A** they are decomposers
☒ **B** they are pathogens
☒ **C** they are microscopic
☒ **D** they are non-living

(Total for question 2 = 3 marks)

Q3.

Answer the questions with a cross in the boxes you think are correct ☒. If you change your mind about an answer, put a line through the box ☒ and then mark your new answer with a cross ☒.

The diagram shows a bacterium with some structures labelled.



(Source: © Alila Medical Media / Shutterstock)

(a) (i) Which structure is a plasmid?

(1)

☒ **A** M
☒ **B** N
☒ **C** Q
☒ **D** R

(ii) Which structure is the cell wall?

(1)

☒ **A** N
☒ **B** O
☒ **C** P
☒ **D** Q

(iii) Which structure contains the genetic material used by the bacterium in reproduction?

(1)

☒ **A** N
☒ **B** O
☒ **C** P
☒ **D** S

(iv) Suggest the function of the structures labelled Q.

(1)

.....

.....

.....

(b) (i) State one structure found in animal cells that is not found in bacteria.

(1)

.....

(ii) State one structure found in bacteria that is also found in plant cells.

(1)

.....

(c) Bacteria differ from viruses.

Give two structural differences between a bacterium and a virus.

(2)

1 .....

.....

.....

2 .....

.....

.....

(Total for question 3 = 8 marks)

Q4.

Answer the questions with a cross in the boxes you think are correct ☒. If you change your mind about an answer, put a line through the box ☒ and then mark your new answer with a cross ☒.

All living organisms have certain characteristics.

(a) Describe what is meant by the following characteristics:

(i) respiration

(2)

.....

.....

.....

.....

(ii) control of their internal conditions

(2)

.....

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.....

(b) Organisms are organised into different levels.

What is the correct order of the levels?

(1)

☒ **A** organ, system, tissue, cell, organelle
☒ **B** organ, tissue, cell, system, organelle
☒ **C** organelle, cell, tissue, organ, system
☒ **D** system, cell, organelle, organ, tissue

(c) Yeast is an example of which group of organism?

(1)

☒ **A** animals
☒ **B** bacteria
☒ **C** fungi
☒ **D** protoctists

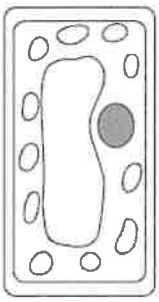
(Total for question 4 = 6 marks)

Q5.

Answer the questions with a cross in the boxes you think are correct ☒. If you change your mind about an answer, put a line through the box ☒ and then mark your new answer with a cross ☒.

Plant cells contain organelles.

The diagram shows a plant cell containing some organelles.



(a) (i) What is the total number of organelles shown in the diagram that absorb light?

(1)

- ☒ **A** 1
- ☒ **B** 6
- ☒ **C** 11
- ☒ **D** 12

(ii) Name an organelle **not** shown in the diagram that makes ATP.

(1)

.....

(b) The magnification of the cell is calculated using this formula.

$$\text{magnification} = \frac{\text{width of cell in diagram}}{\text{actual width of cell}}$$

The actual width of the cell is 40 μm. (1 μm = 1000 mm and 1 cm = 10 mm)
Calculate the magnification of this cell. Show your work.

(2)

Answer .....

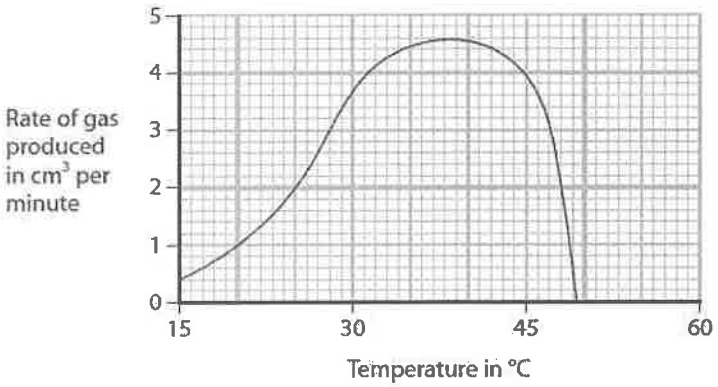
(Total for question 5 = 4 marks)

Q6.

Biologists classify organisms into different groups. One group of organisms is fungi.

A student investigates the effect of temperature on the rate of anaerobic respiration in yeast.

The student measures the rate of gas produced in cm^3 per minute.
The graph shows their results.



Explain the effect that increasing temperature has on the rate of gas production by the yeast.

(3)

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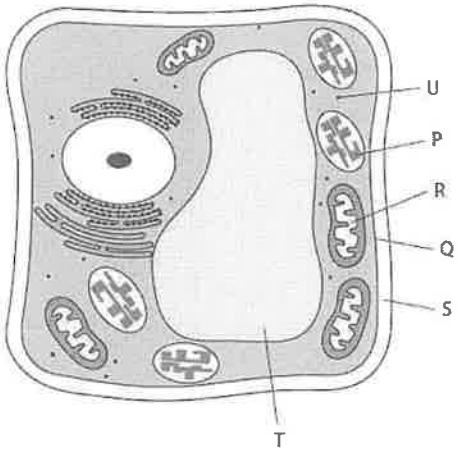
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(Total for question 6 = 3 marks)

Q7.

Answer the questions with a cross in the boxes you think are correct ☒. If you change your mind about an answer, put a line through the box ☒ and then mark your new answer with a cross ☒.

The diagram shows a plant cell with some structures labelled.



(a) Which structure is the cell vacuole?

(1)

☐ **A** P
☐ **B** R
☐ **C** S
☐ **D** T

(b) Which structure is the site of photosynthesis?

(1)

☐ **A** P
☐ **B** Q
☐ **C** R
☐ **D** T

(c) Which structure is the cell wall?

(1)

☒ **A** P
☒ **B** Q
☒ **C** S
☒ **D** T

(d) Structure U is the site of protein synthesis in the cell.
What is the name of structure U?

(1)

☒ **A** chloroplast
☒ **B** mitochondrion
☒ **C** ribosome
☐ **D** starch granule

(Total for question 7 = 4 marks)

Q8.

(a) Describe how stem cells are different from other cell types.

(2)

.....

.....

.....

.....

(b) Stem cells from a donor can be used for stem cell therapy.

Human blood cells are produced in bone marrow.
Explain how using stem cells from the bone marrow enables doctors to treat a number of different blood conditions.

(3)

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(Total for question 8 = 5 marks)

Q9.

Answer the questions with a cross in the boxes you think are correct ☒. If you change your mind about an answer, put a line through the box ☒ and then mark your new answer with a cross ☒.

Structures in living organisms are made up of biomolecules. The three main types of biomolecules are carbohydrates, lipids and proteins.
Answer the below questions on biomolecules.

(a) How many of the below are monosaccharides? **(1)**

- Glucose
- Sucrose
- Starch
- Galactose

☐ **A** one
☐ **B** two
☐ **C** three
☐ **D** four

(b) Which of the below describes what maltose is made of? (1)

☐ **A** two glucose molecules
☐ **B** two fructose molecules
☐ **C** one glucose molecule and one glycogen molecule
☐ **D** one galactose molecule and one glucose molecule

(c) Which polysaccharide makes up plant cell walls? (1)

☐ **A** chitin
☐ **B** murein
☐ **C** cellulose
☐ **D** glycogen

(d) Which phrase best describes glycogen? (1)

☐ **A** it is a polysaccharide of glucose used for energy storage in animals and fungi
☐ **B** it is a polysaccharide of glucose used for energy storage in plants
☐ **C** it is a disaccharide of glucose used for energy storage in animals and fungi
☐ **D** it is a disaccharide of glucose used for energy storage in plants

(e) Which of the below describes the components of a triglyceride? (1)

☐ **A** one glycogen molecule and three fatty acids
☐ **B** one glycogen molecule and three amino acids
☐ **C** one glycerol molecule and three fatty acids
☐ **D** one glycerol molecule and three amino acids

(f) Which of the below is the building-block of proteins? (1)

- ☐ **A** chitin
- ☐ **B** monosaccharides
- ☐ **C** fatty acids
- ☐ **D** amino acids

(g) Enzymes are proteins. Which statement is **incorrect** about enzymes? (1)

- ☐ **A** the structure of the enzyme determines its function
- ☐ **B** enzymes are specific to certain substrates
- ☐ **C** enzymes are affected by the reaction they catalyse
- ☐ **D** the active site of the enzyme binds to the substrate

(h) Which biomolecules are stored in the body? (1)

- ☐ **A** none
- ☐ **B** proteins and lipids
- ☐ **C** carbohydrates and lipids
- ☐ **D** carbohydrates, proteins and lipids

(i) Starch is made of: (1)

- ☐ **A** many fructose molecules
- ☐ **B** many galactose molecules
- ☐ **C** many glycerol molecules
- ☐ **D** many glucose molecules

(j) Which of the below is not a function of lipids? (1)

- ☐ **A** makes up cell membranes
- ☐ **B** is used to make some hormones
- ☐ **C** increases the rate of metabolic reactions
- ☐ **D** acts as an insulator to reduce heat loss from the body

(Total for question 9 = 10 marks)

Total for paper = 50 marks

Q1.

- Single/one/umicellular (1)
- Wall (1)
- Photosynnthesis (1)
- Decomposers (1)
- Chromosome (1)
- Plasmids (1)
- Pathogens (1)

Q2.

(a) Two of the below:

- Cell membrane (1)
- Cytoplasm (1)
- Ribosomes (1)
- DNA (1)

(b) B (1)

Q3.

(a) (i) A (1)

(ii) A (1)

(iii) D (1)

(iv) to move/to swim (1)

(b) (i) One of the below:

- Membrane-bound organelles (1)
- Nucleus (1)
- Mitochondria (1)
- ER (1)
- Golgi (1)
- Lysosomes (1)

(ii) One of the below:

- Cell wall (1)
- Cell membrane (1)
- Cytoplasm (1)
- Ribosomes (1)

(c) Viruses are: (or the reverse for bacteria)

- Smaller (1)
- Do not have a cell wall (1)
- Have a protein coat (1)
- Do not have ribosomes (1)
- Do not have a cytoplasm (1)
- Do not have a cell membrane (1)
- Do not have plasmids (1)

Q4.

(a) (i) Reactions that release energy (1) within cells (1)

(ii) Keeping specific internal conditions (temperature, glucose levels, water content, blood pressure, carbon dioxide concentration) (1) within a specific range (1)

(b) C (1)

(c) C (1)

Q5.

(a) (i) C (1)

(ii) Mitochindria (1)

(b) Width of the cell = 2 cm = 20 mm = 20,000 μm (1)

Magnification = 20,000 μm /40 μm = 500 (1)

Q6.

- An increase in temperature results in an increase in kinetic energy (and molecules move faster) (1)
- This results in more enzyme-substrate collisions (1)
- Above the optimum temperature, the enzyme **denatures** and can no longer fir the substrate (1)

Q7.

(a) D (1)

(b) A (1)

(c) C (1)

(d) C (1)

Q8.

(a) Two of the below:

- They are undifferentiated/unspecialised cells (1)
- That can become different **cell types** (1)
- They can continue to divide (1)

(b) Three of the below:

- They can differentiate into different types of blood cells (1)
- To treat diseases of red blood cells (1)
- To treat diseases of white blood cells (1)
- To treat cancer/conditions in the bone marrow (1)

Q9.

(a) B (1)
(b) A (1)
(c) C (1)
(d) A (1)
(e) C (1)
(f) D (1)
(g) C (1)
(h) C (1)
(i) D (1)
(j) C (1)