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9700 / CAIE A level Biology / Paper-1/ Multiple Choice Questions

1.2.31-Cell-structures-mixed-bag-Set-2-qp

Total Questions: 11

Questions

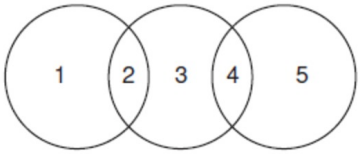
Question 1:

Which function is correct for the description of the cell structure?

	function	cell structure
A	organises microtubules to produce the spindle	membrane-bound sacs, arranged as a flattened sac
B	packages hydrolytic enzymes used in cell	non-membrane bound cylindrical structures
C	synthesises lipids	membranes which surround an enclosed inner cavity
D	synthesises polypeptides	membrane bound spherical structure

Question 2:

The diagram shows some similarities between chloroplasts, mitochondria and typical prokaryotes.



Which row is correct?

	1	2	3	4	5
A	chloroplasts	circular DNA	mitochondria	linear DNA	prokaryotes
B	mitochondria	linear DNA	chloroplasts	70S ribosomes	prokaryotes
C	mitochondria	70S ribosomes	chloroplasts	linear DNA	prokaryotes
D	prokaryotes	70S ribosomes	mitochondria	70S ribosomes	chloroplasts

Questions (Continued)

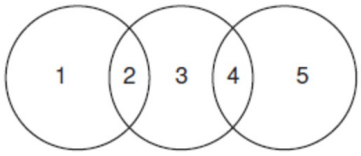
Question 3:

What is the order of size of cell structures?

	largest →			smallest
A	centrioles	ribosomes	lysosomes	nucleoli
B	lysosomes	nucleoli	centrioles	ribosomes
C	nucleoli	lysosomes	centrioles	ribosomes
D	nucleoli	centrioles	ribosomes	lysosomes

Question 4:

The diagram shows some similarities between chloroplasts, mitochondria and typical prokaryotes.



Which row is correct?

	1	2	3	4	5
A	chloroplasts	circular DNA	mitochondria	80S ribosomes	prokaryotes
B	chloroplasts	80S ribosomes	mitochondria	circular DNA	prokaryotes
C	prokaryotes	circular DNA	mitochondria	circular DNA	chloroplasts
D	prokaryotes	70S ribosomes	chloroplasts	80S ribosomes	mitochondria

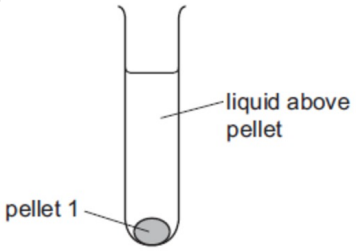
Questions (Continued)

Question 5:

A scientist carried out an experiment to separate cell structures in animal cells.

The cells were broken open to release the cell structures.

This extract was filtered into a centrifuge tube and then spun in a centrifuge. The heaviest cell structure sank to the bottom forming pellet 1, as shown in the diagram.



The liquid above pellet 1 was poured into a clean centrifuge tube and spun in the centrifuge at a higher speed to separate the next heaviest cell structure. This cell structure sank to the bottom, forming pellet 2.

This procedure was repeated twice more to obtain pellet 3 and pellet 4, each containing a single type of cell structure.

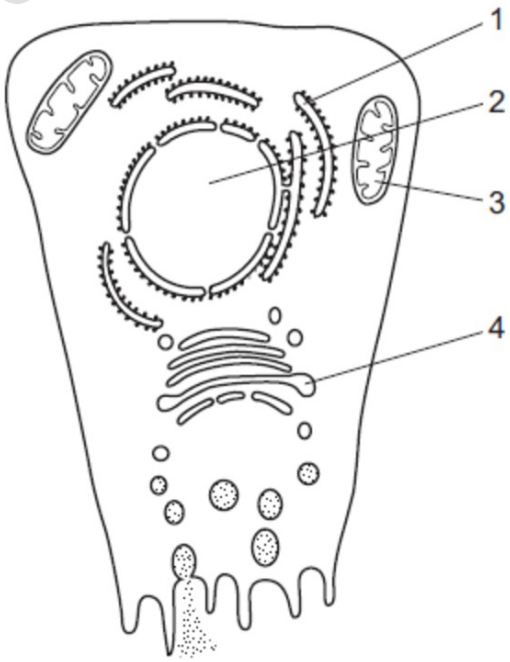
Which row shows the order in which the cell structures were collected?

	pellet 1	pellet 2	pellet 3	pellet 4
A	nucleus	lysosomes	mitochondria	ribosomes
B	nucleus	mitochondria	lysosomes	ribosomes
C	ribosomes	lysosomes	mitochondria	nucleus
D	ribosomes	mitochondria	lysosomes	nucleus

Questions (Continued)

Question 6:

Radioactively-labelled nucleotides are introduced into a cell.



In which cell structures will the radioactivity first become concentrated?

A 1 and 2 **B** 1 and 4 **C** 2 and 3 **D** 3 and 4

Question 7:

Which cell structures can form vesicles?

	cell structure		
	cell surface membrane	endoplasmic reticulum	Golgi body
A	✓	✓	✓
B	✓	✓	✗
C	✓	✗	✓
D	✗	✓	✓

key

✓ = can form vesicles

✗ = cannot form vesicles

Questions (Continued)

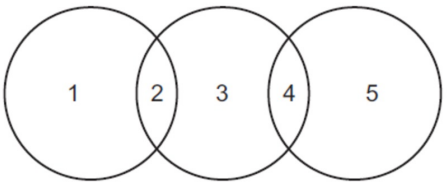
Question 8:

Which row correctly describes the function of the cell structures?

	lysosomes	mitochondria	smooth endoplasmic reticulum	Golgi body
A	digestion of unwanted structures	abundant in sites of active transport	processing of proteins	a stack of flattened sacs
B	digestion of unwanted structures	ATP synthesis	lipid production	glycoprotein production
C	spherical sacs containing hydrolytic enzymes	abundant in sites of active transport	lipid production	glycoprotein production
D	spherical sacs containing hydrolytic enzymes	ATP synthesis	glycoprotein production	lipid production

Question 9:

The diagram shows the relationship between various cells and their components.



Which row is correct?

	1	2	3	4	5
A	80S ribosome	eukaryotic cell	mitochondrion	70S ribosome	prokaryotic cell
B	chloroplast	plant cell	cell wall	prokaryotic cell	80S ribosome
C	circular DNA	nucleus	eukaryotic cell	mitochondrion	70S ribosome
D	prokaryotic cell	circular DNA	chloroplast	membrane bound	70S ribosome

Questions (Continued)

Question 10:

Which cell structures may contain cisternae?

	chloroplast	endoplasmic reticulum	Golgi body	mitochondrion
A	✓	✓	✓	✗
B	✓	✗	✗	✓
C	✗	✓	✓	✗
D	✗	✓	✗	✓

key
✓ = may contain cisternae
✗ = does not contain cisternae

Question 11:

Density gradient centrifuges are used to separate cell structures by their relative density. Larger cell structures have greater density and sink further down the centrifuge tube.

What is the correct order of the cell structures, starting from the top of the centrifuge tube?

A chloroplasts → nuclei → mitochondria → ribosomes

B nuclei → chloroplasts → mitochondria → ribosomes

C ribosomes → chloroplasts → mitochondria → nuclei

D ribosomes → mitochondria → chloroplasts → nuclei