<u>Immunity - AS 9700 June 2022</u>

 June 	/2023/P	aper_9700	/11/No.39
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Which blood cell type does **not** recognise, engulf and digest non-self particles?

- A macrophages
- **B** neutrophils
- **C** phagocytes
- D T-killer cells

2. June/2023/Paper 9700/11/No.40

Repeated infections with malaria result in more effective immunity to malaria.

Which type of immunity is responsible for the more effective immunity?

- A artificial active
- **B** artificial passive
- C natural active
- **D** natural passive

3. June/2023/Paper_9700/12/No.40

A successful vaccination programme provides a level of immunity where the majority of a population is protected.

There are several factors that can affect the success of a vaccination programme.

Which row correctly shows the factors that can affect the success of a vaccination programme?

	frequent mutation of the pathogen	vaccination from eight weeks old	pathogen is able to invade T-cells	booster vaccinations needed frequently
Α	1	✓	x	✓
В	✓	x	✓	✓
С	x	✓	✓	x
D	✓	X	✓	x

key

√ = affects

x = does not affect

	Mo	noclonal antibodies are produced using the hybridoma method.
	Wh	at are removed from the spleen of a mouse to produce monoclonal antibodies?
	Α	antigens
	В	clones
	С	lymphocytes
	D	myeloma cells
5.		//2023/Paper_9700/22/No.3 Is of the immune system respond to the presence of non-self antigens.
	(a)	Outline the features of non-self antigens.
		[3]
	(b)	Four different types of cells of the immune system are shown in Table 3.1.
		Complete Table 3.1:
		 use a tick () if the description applies to the named cell of the immune system use a cross () if the description does not apply.

4. June/2023/Paper_9700/13/No.40

decemention of call	cell of the immune system						
description of cell	B-lymphocyte	plasma cell	T-helper cell	T-killer cell			
able to go through a number of cell cycles (clonal expansion)							
main role is to secrete cytokine during an immune response							
present during a primary immune response to a virus							

(c)	The cell	cycle ca	n be div	ided into	different	parts
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В

С

Complete sentences A, B and C to provide more information about the mitotic cell cycle.

The part of the cell cycle that occurs immediately after mitosis is
The part of the cell cycle in which the S phase occurs is
The main event that occurs during the S phase is

[Total: 10]

[3]

6. June/2023/Paper_9700/23/No.4

Food crops such as barley and wheat contain gluten. Gluten contains two proteins, glutenin and gliadin.

(a) (i) Table 4.1 contains descriptions of the structures of glutenin and gliadin.

Complete Table 4.1 by writing the level of protein structure that applies to each description.

Table 4.1

			Table	e 4.1
			description	level of protein structure
	_	•	tein is a single polypeptide that forms tructure	
	% of ycine	the a	amino acids in a glutenin molecule are	
_	adin a		glutenin molecules contain regions of neets	*96
				[3]
		(ii)	Many genes in eukaryotic cells contact contain introns.	ain introns. The genes that code for gliadin do not
			Explain how a lack of introns in a glian primary transcript.	adin gene affects the production of mRNA from the
			10000	[1]
(b)		liac r die	disease is a condition in which the ir	nmune system of a person responds to gluten in
			ac disease, there is a response to the nat are produced as a result of gliadin	ne presence of peptides (short chains of amino n digestion.
	(i)		-	of digestion are often as large as 33 amino acids umbers of these peptides at the same time.
		Suç	ggest and explain how gliadin peptide	es are transported into intestinal cells.

(ii)		presence of gliadin causes the immune system of a person with coeliac disease to ond by producing anti-gliadin antibodies.
		cribe the sequence of events that results in the immune system producing anti- lin antibodies.
		.89
		[4]
		[Total: 10]
		/Paper_9700/12/No.39 ement correctly explains why viruses are unaffected by penicillin?
Α	Penicill	lin only affects host cell metabolism.
В	Penicill	lin only binds with 70S ribosomes.
С	Penicill	lin only blocks mRNA synthesis in prokaryotes.
D	Penicil	lin only blocks peptidoglycan synthesis.
		/Paper_9700/12/No.40 esses characterise the mode of action of phagocytes?
	1	antibody production
	2	receptor binding
	3	endocytosis
	4	exocytosis
	5	hydrolysis
Α	1, 2 an	d 4 B 1 and 4 only C 2, 3, 4 and 5 D 3 and 5 only

7.

8.