2914/104 TAXONOMY, CYTOLOGY AND MICROBIOLOGY June/July 2022 Time: 3 hours



THE KENYA NATIONAL EXAMINATIONS COUNCIL

DIPLOMA IN APPLIED BIOLOGY

MODULE I

TAXONOMY, CYTOLOGY AND MICROBIOLOGY

3 hours

INSTRUCTIONS TO CANDIDATES

This paper consists of **TWO** sections; **A** and **B**. Answer **ALL** the questions in section **A** and any **THREE** questions from section **B** in the answer booklet provided. in the answer booklet provided.

Each question in section A carries 4 marks while each question in section B carries 20 marks. Maximum marks for each part of a question are indicated.

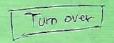
Candidates should answer the questions in English.

This paper consists of 3 printed pages.

Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.

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SECTION A (40 marks)

Answer ALL questions in this section.

1.	State four functions of the cell wall in bacteria.		(4 marks)
2.	Outline four factors that determine the potency of disinfectants.		(4 marks)
3.	Name any two examples of the following types of media:		
	(a) enrichment media;	10 a (1)	(2 marks)
	(b) selective media	" cy co par.	(2 marks)
4.	State four functions of nucleus in a c	celk	(4 marks)
5.	Describe the interphase stage of mito	osis. The bound of the order	(4 marks)
6.	Distinguish between each of the following terms:		
	(a) hypotonic solution and hyper	rtonic solution;	(2 marks)
	(b) phagocytosis and pinocytosis	2. S.CO.	(2 marks)
7.	State the functions of each of the fol	lowing parts of a microscope:	
	(a) body tube; body tube;		(1 mark)
	(b) stage; -2/1, dol on we are		(1 mark)
	0.46	et.	(1 mark)
	(d) coarse adjustment knob. Match each of the following organis	ionsy to con,	(1 mark)
8.	Match each of the following organis	sms with their phylum in kingdom Pr	rotista.
	Organism Ph	ylum	

(4 marks)

Trypanosome

Paramecium

Amoeba

Euglena

Phytoflagellata

Ciliophora

Sarcodina

Zooflagellata

9. (a) Define the term 'binomial nomenclature'. (2 marks)

(b) Distinguish between phylogenetic and phenetic classification. (2 marks)

10. List the taxonomic units in their chronological order. (4 marks)

SECTION B (60 marks)

Answer any THREE questions from this section.

11.	(a)	Highlight ten characteristics of an ideal antiseptic.	(10 marks)
	(b)	Differentiate between an animal and a plant cell.	(10 marks)
12.	(a)	Explain six factors affecting the rate of diffusion.	(12 marks)
	(b)	Describe the general characteristics of kingdom Fungi.	(8 marks)
13.	Descri	Explain the classification of fundi based on formation of spores, giving spec	(20 marks)
14	(a)	Explain the classification of fund based on formation of spores, giving specific	
<i>/</i>	(4)	Explain the classification of fungi based on formation of spores, giving spece examples in each case.	(15 marks)
	(b)	Highlight the economic importance of protists.	(5 marks)
15.	(a)	Describe the three sub kingdoms of kingdom Monera.	(12 marks)
	(b)	Draw and name four types of flagella arrangements in bacteria.	(8 marks)

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