



FACULTY OF SCIENCE
FAKULTEIT NATUURWETENSKAPPE

DEPARTMENT OF BOTANY AND PLANT BIOTECHNOLOGY
DEPARTEMENT PLANTKUNDE EN PLANTBIOTEGNOLOGIE

MODULE

MCB2A01
BACTERIOLOGY & VIROLOGY
BAKTERIOLOGIE & VIROLOGIE

CAMPUS
KAMPUS

APK
APK

EXAM
EKSAMEN

15 JULY 2014 (11:30-13:30)
15 JULIE 2014 (11:30-13:30)

ASSESSOR (S)

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INTERNAL MODERATOR
INTERNE MODERATOR

DR E. VENTER

DURATION 2 HOURS
TYDSDUUR 2 URE

MARKS: 110
PUNTE: 110

NUMBER OF PAGES:
AANTAL BLADSYE:

10 PAGES (SECTION A: p.2 SECTION B: p.6)
10 BLADSYE (AFDELING A: p.2 AFDELING B: p.6)

INSTRUCTIONS:
INSTRUKSIES:

ANSWER ALL THE QUESTIONS (SECTION A: 12 SECTION B: 11)
BEANTWOORD AL DIE VRAE (AFDELING A: 12 AFDELING B: 11)

NAME & SURNAME:

NAAM & VAN:

STUDENT NUMBER:

STUDENTENOMMER

TELEPHONE NUMBER:

TELEFOONNOMMER:

SECTIONS COMPLETED:

AFDELINGS VOLTOOI:

A:

/ 55

B:

/ 55

TOTAL MARKS:

/ 110

TOTAL

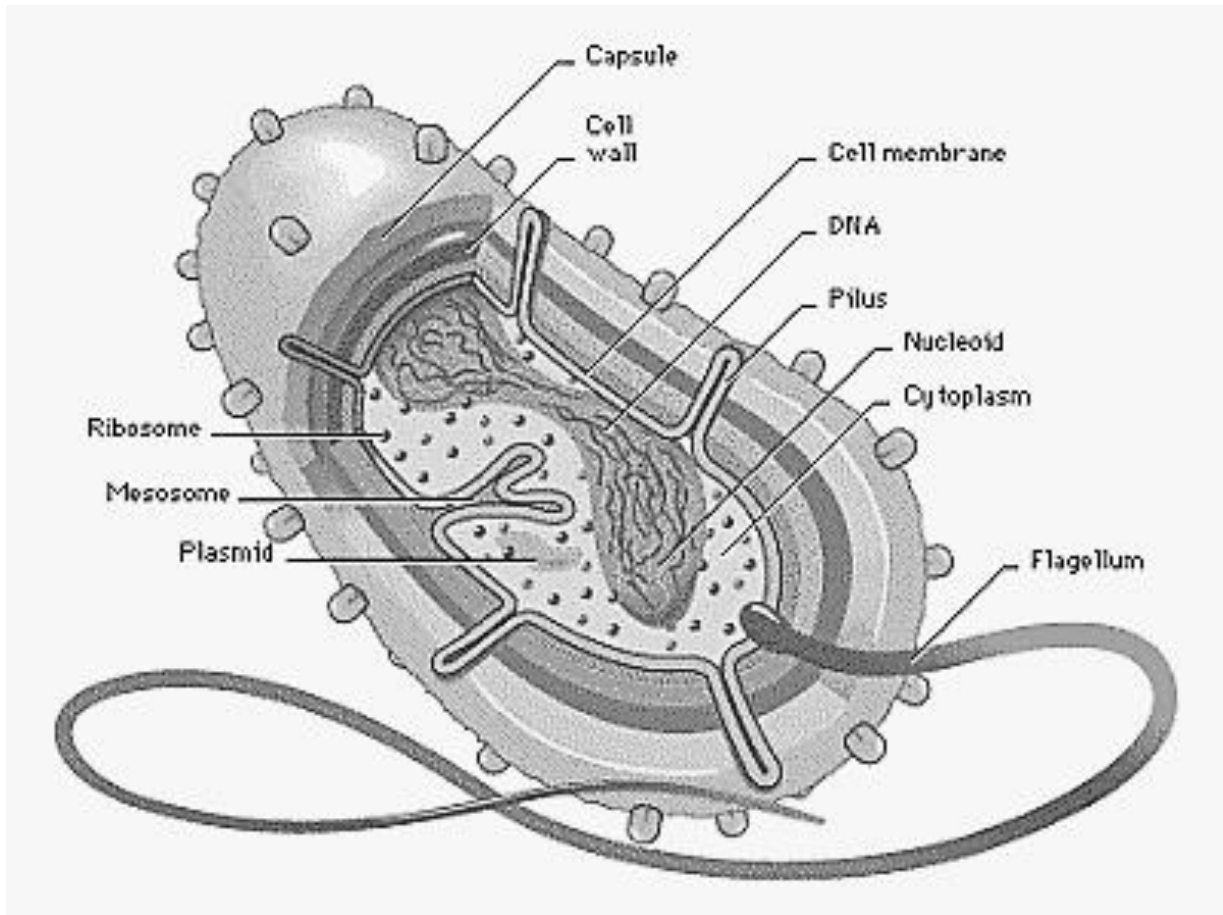
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SECTION A: BACTERIOLOGY

QUESTION / VRAAG 1

[10]

Label the following / Benoem die volgende:



QUESTION / VRAAG 2

[4]

Discuss four survival mechanisms found in bacteria?

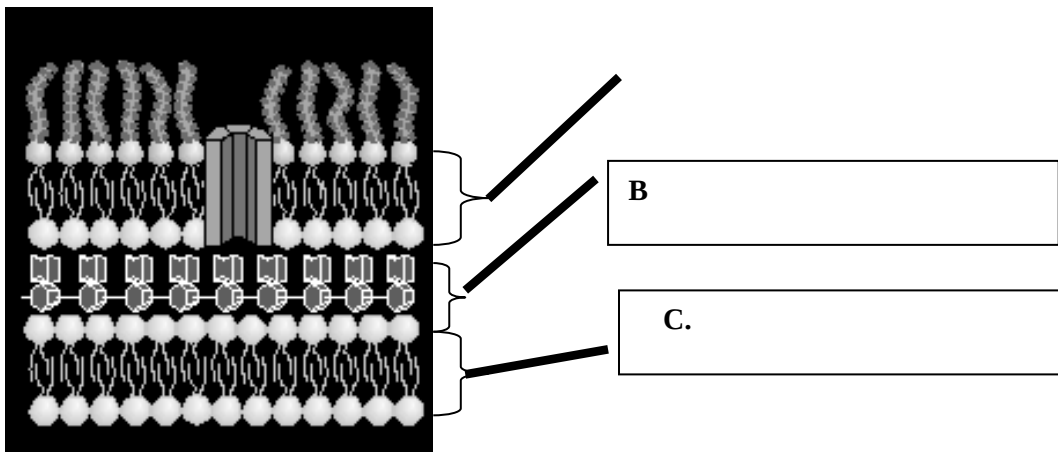
Bespreek vier oorlewingsmeganismes wat voorkom in bakterieë.

- Cell wall
- Capsule
- Endospore
- plasmids
- Pili

QUESTION / VRAAG 3

[3]

Provide labels for the following structures / Voorsien byskrifte aan die volgende:strukture



QUESTION / VRAAG 4

[3]

What is Lipid A?

Wat is Lipied A?

QUESTION / VRAAG 5

[4]

What are plasmids and why are they significant?

Wat is plasmiede en waarom is hulle belangrik?

QUESTION / VRAAG 6

[3]

Discuss the role of viruses in bacterial identification.

Bespreek die rol van virusse in bakteriese identifikasie.

QUESTION / VRAAG 7

[6]

a) Name 3 side effects of antibiotics.

(3)

Noem 3 newe-effekte van antibiotika.

b) List the antibiotics that target the bacterial cell wall.

(3)

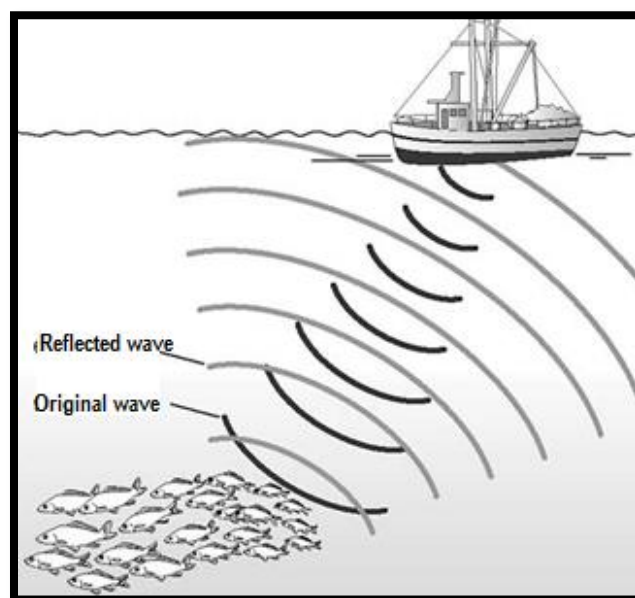
Noem die antibiotika wat op die bakteriese selwand inwerk.

QUESTION 8 / VRAAG 8

[4]

Deliberate on the general and medical role of the waves depicted in the illustration below.

Delibereer oor die algemene en mediese rol van die golwe voorgestel in die onderstaande skets.



QUESTION / VRAAG 9

[3]

Give the name of the diseases (common name) that the following bacteria cause:

Gee die naam van die siektes (algemene naam) wat deur die volgende organismes veroorsaak word:

a) *Staphylococcus aureus*: _____ (1)

b) *Salmonella*: _____ (1)

c) *Coxiella burnetti*: _____ (1)

QUESTION / VRAAG 10

[3]

Describe the principle of the bacterial death curve.

Bespreek die beginsel van die bakteriese sterwingskromme.

QUESTION /VRAAG 11

[6]

Discuss and draw *Helicobacter pylori*.

*Bespreek en teken *Helicobacter pylori*.*



QUESTION / VRAAG 12

[6]

How do bacterial cells divide and reproduce?

Hoe verdeel en reproduseer bakteriese selle?

6

TOTAL MARKS BACTERIOLOGY:

/ 55

SECTION B: VIROLOGY

QUESTION / VRAAG 1

[4]

What is the role of the vector in the transmission of a viral infection?

Wat is die rol van 'n vektor in die oordrag van 'n virale infeksie?

QUESTION / VRAAG 2

[3]

What is meningitis? Name 2 distinctive symptoms.

Wat is meningitis? Noem 2 kenmerkende simptome.

QUESTION / VRAAG 3

[2]

What is a virion and how does it differ from a virus?

Wat is 'n virion en hoe verskil dit van 'n virus?

QUESTION / VRAAG 4

[2]

Name 2 examples of helical capsid viruses.

Noem 2 voorbeelde van helikale kapsiedvirsusse.

QUESTION / VRAAG 5

[5]

DEFINE / DEFINIEER:

- a) SEM: _____

- b) Plaque assay / Plaaktoets: _____

- c) Minus strand /Minus string : _____

- d) Burst size / Barsgrootte _____

- e) T antigen/antigeen _____

QUESTION / VRAAG 6

[5]

According to which criteria does the “International Committee on the Taxonomy of Viruses” classify viruses?

Watter kriteria gebruik die “International Committee on the Taxonomy of Viruses” om virusse te klassifiseer?

QUESTION/ VRAAG 7

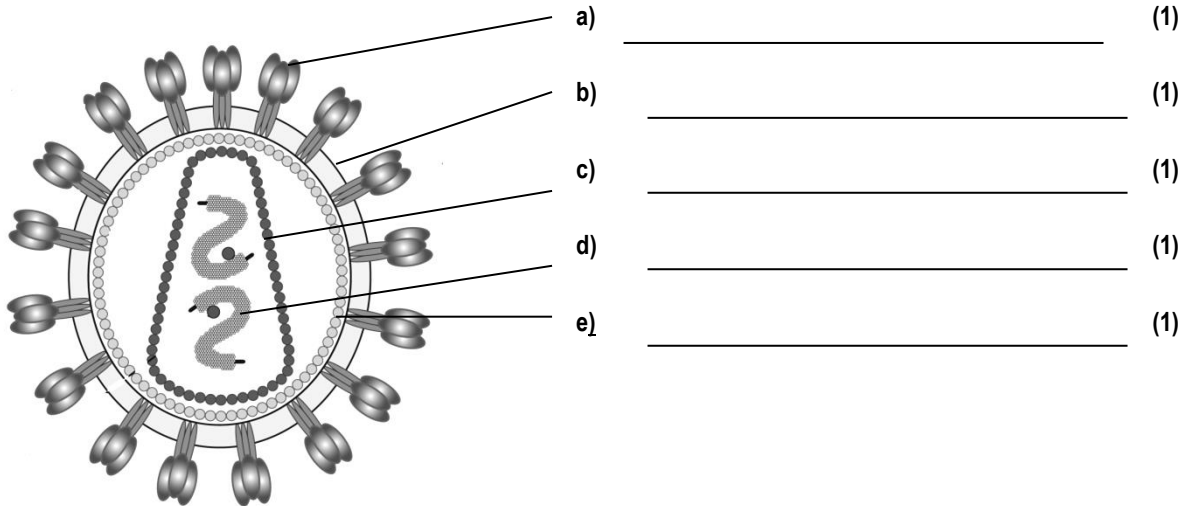
[4]

List 2 symptoms & 2 methods of contraction for Hepatitis A.

Lys 2 simptome & 2 metodes van oordrag vir Hepatitis A.

QUESTION 8 / VRAAG 8

[13]



f) Which virus is this? / Watter virus is dit? _____ (1)

g) Which disease does it cause? / Watter siekte veroorsaak die virus? _____ (1)

h) How is it transmitted to other hosts? Name 2 methods.

Hoe word dit oorgedra na ander gashere? Noem 2 metodes. _____ (2)

i) Name 4 systemic symptoms of above mentioned disease. _____ (4)

Noem 4 sistemiese simptome van bogenoemde siekte.

QUESTION / VRAAG 9

[4]

Provide the function/s of the following

Voorsien die funksie/s van die volgende:

a) **Spikes / Penne** _____ (1)

b) **Viroid / Viroïed** _____ (1)

c) **Oncolytic viruses** / *Onkolitiese virusse* (1)

d) **Oncogenes** / *Onkogene* (1)

QUESTION / VRAAG 10 [8]

Name 2 symptoms of the following (exclude fever)

Noem 2 simptome van die volgende (uitsluitend koors):

a) **Meningitis** (2)

b) **Kuru** (2)

c) **Yellow fever** / *Geelkoors* (2)

d) **Hepatitis B** (2)

QUESTION / VRAAG 11 [5]

Name the ways that a virus may exit the human host.

Noem die maniere waarop 'n virus die menslike gasheer kan verlaat.

TOTAL MARKS VIROLOGY:

/ 55

15

The End
