**Bio Test Assignment**

**There are two parts of the test assignment. Part 1: MCQs and Part 2: Essay**

**Part 1: MCQs**

Chose the correct option and provide a brief description behind your choice (i.e. why do you think that the option that you have selected is correct?). If description is not possible you can write N/A.

1. Virus-mediated transfer of cellular genetic material from one bacterial cell to another

by means of virus particles is called:

(A) transduction

(B) transposition

(C) transformation

(D) transfection

2. One strand of double-stranded DNA is mutated, changing all cytosines to uracils. After one round of replication of the mutated DNA strand, the melting temperature of the resulting DNA will:

(A) be higher

(B) be lower

(C) remain the same

(D) be double

3. The Southern blotting technique is used for:

(A) the detection of RNA fragments onmembranes by specific radioactiveantibodies

(B) the detection of DNA fragments onmembranes by a radioactive DNAprobe

(C) the detection of proteins on membranesusing a radioactive DNA probe

(D) the detection of DNA fragments onmembranes by specific radioactiveantibodies

4. Superoxide dismutase is an important enzyme for maintenance of red blood cells and is defective insome neurodegenerative diseases. What does this enzyme do?

(A) catalyzes the conversion of O2- to H2O2 and O2

(B) createssuperoxides by oxidizing heme

(C) converts H2O2 to water and O2

(D) removes H2O2 by oxidizing glutathione and producing water

5. Carboxymethyl cellulose is:

(A) acation -exchange matrix

(B) a gel filtration matrix

 (C) an anion-exchange matrix

(D) a plant cell wall constituent

6. Targetted suppression of gene expression isachieved by:

(A) T-DNA insertion

(B) EMS

(C) RNAi

(D) Gamma ray

7. Cystic fibrosis is due to:

(A) defective chloride channel

(B) defective LDL receptor

(C) High levels of HDL

(D) increased dopamine

8. The main difference between active transport and facilitated diffusion is that:

(A) in active transport, the molecules move from areas of high concentration to areas of low concentration

(B) carrier protein is involved only in case of active transport

(C) in active transport, energy is consumed to move molecules against a concentration gradient

(D) in active transport, only water molecules are transported

9. In competitive inhibition

(A) Km increases, V max constant

(B) Km decreases, Vmax constant

(C) Km constant, Vmax increases

(D) Km decreases, Vmax increases

10. The endogenous GTPase activity of G-proteins serves to:

(A) stimulate the activity of enzymes by producing energy

(B) synthesize cGMP as a second messenger

(C) synthesize GTP as an energy source

(D) hydrolyze GTP returning the G protein to a pre-stimulated level of activity

**Part 2: Essay**

**Word count: 500**

**Essay Question:**

Australia’s population is becoming increasingly diverse. Therefore, meeting the palliative care

needs in a range of settings poses many challenges. To **demonstrate** your understanding of a

palliative care approach in a diverse environment, select a patient from **one** of the following

lifespan categories:

• Child

• Young Adult

• Older adult (65+)

Write an essay that:

a) **Discusses** the importance of providing age appropriate care reflecting a palliative

approach for a person and their family.

b) **Illustrate** your understanding of nursing care using a palliative approach when applied to

your chosen life span category.

* Use at least more than **seven** current and relevant literatures to adequately support your discussion throughout the essay.
* Provide references in APA style. Please provide minimum 7 References.