UNIVERSITY OF ESWATINI
FACULTY OF EDUCATION
DEPARTMENT OF CURRICULUM AND TEACHING
MAIN EXAMINATION QUESTION PAPER: DECEMBER 2018

TITLE OF PAPER	:	CURRICULUM STUDIES IN BIOLOGY I
COURSE CODE	:	CTE327/527
STUDENTS	:	B.Ed. LEVEL III, PGCE
TIME ALLOWED	:	THREE (3) HOURS

INSTRUCTIONS:
1. This examination paper has five (5) questions.
2. Answer (four) 4 questions
3. Each question has a total of 25 points.

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1. a) Using the Meiotic and Simple Dominance Models, show how scientific models are used to describe, explain and predict natural phenomena. **[10]**

b) Peter Medawar and Karl Popper are strong critiques of the use of induction as a way of making scientific discoveries. Discuss the rationale behind this view. **[10]**

c) A special relationship exists between experiment and theory that learners should be made aware of. Describe it. **[5]**

2. a) Having discussed how germination occurs in plants, Ms Nyoni wants her Form IV Biology class to determine if water is a condition for seed germination, using the inquiry approach.

i) Explain how she can introduce the lesson using learners' background knowledge. **[5]**

ii) Suggest the type of questions she can ask to ensure active engagement and participation of the learners. **[8]**

iii) What kind of input should she provide to enable the learners to suggest the activities that will help them to determine if water is necessary for seeds to germinate? **[12]**

3. a) Science teachers are advised to use inductive demonstrations and teach more inductively rather than using deductive demonstrations and teaching deductively. Discuss the reasons for this advice. **[10]**

b) Research shows that when science teachers give their learners time to answer questions, (teacher-wait time), learners and teachers undergo a positive change in their classroom behaviour. Explain how teacher-wait time impacts on both learners and teachers. **[10]**

c) Distinguish between a learner-centred inquiry discussion and a teacher-centred inquiry discussion. **[5]**

4. a) A teacher asked his Form IV Biology class the questions shown below. Use the following criteria to classify each question according to the cognitive ability being developed and give reasons for your classification:
Blooms taxonomy, convergent or divergent, science processes

i) How can we show that water moves through the stem to the leaves in the vascular bundles in plants? **[6]**

ii) What is the name of the process by which leaves lose water? **[4]**

iii) What do you think will happen to the leaf left covered in foil for 2 days? **[6]**

iv) Name the part of the plant where photosynthesis occurs. **[4]**

b) In Swaziland, science teachers frequently use demonstrations to show science phenomena, mainly due to lack of equipment and resources. Therefore, it is important that the demonstration be of good quality. Provide the attributes of a good teacher demonstration. **[5]**

5. a) Explain how you would assess a biology practical activity using the following techniques: direct observation and laboratory report. **[5]**

b) Below is a test specification grid for a unit on Respiration for a Form IV Biology class test.

Objectives/science processes	Content Areas			
	Aerobic respiration	Anaerobic respiration	Gaseous exchange	Total
Knowledge and understanding	8	10	14	32
Analysing	2			2
Observing	4		8	12
Hypothesising		2	2	4
Interpreting	4		8	12
Inferring	2		6	8
Total	20	12	38	70

Explain what this specification table shows about the test regarding the following: **[10]**

i) Objectives
ii) Science processes
iii) Content coverage

c) Explain, with examples, how authentic assessment is advantageous for learners with diverse learning styles and abilities. **[10]**