

**UNIVERSITY OF ESWATINI
FACULTY OF EDUCATION
DEPARTMENT OF CURRICULUM AND TEACHING
RE-SIT EXAMINATION QUESTION PAPER: JULY 2019**

TITLE OF PAPER : CURRICULUM STUDIES IN BIOLOGY II
COURSE CODE : CTE328/528
STUDENTS : B.Ed. LEVEL III, PGCE
TIME ALLOWED : THREE (3) HOURS

INSTRUCTIONS:

- 1. This examination paper has five (5) questions. Answer any four (4) questions.**
- 2. Each question has a total of 25 points.**
- 3. There is an attachment for 1 question.**

THIS PAPER IS NOT TO BE OPENED UNTIL PERMISSION HAS BEEN GRANTED BY THE INVIGILATOR

1. a) Professors Ajeyalemi (1990) and Yoloye (1999) lamented the state of Science and Technology Education in Africa.
 - i) Discuss the common concerns of these science educators regarding the state of Science and Technology Education in Africa. [10]
 - ii) How has the situation changed since then? [5]

- b) The African Forum for Children's Literacy in Science and Technology (AFCLIST) goals were to increase the interest, appreciation and participation of African youth in Science and Technology. Discuss, with examples, the measures taken by AFCLIST to accomplish this goal. [10]

2. a) i) According to Morrison (2006) Science Technology Engineering and Mathematics (STEM) education should develop in learners skills for the 21st Century. Provide and discuss 3 of these skills and state how they are relevant to Eswatini. [9]

- ii) Explain how these skills compare with the characteristics of STEM lessons. [6]

- b) Compare and contrast the steps taken by Botswana and Eswatini to develop relevant science curriculums at the Junior Secondary level. [10]

3. a) In Eswatini, female enrolment in school compares well with that of males. However, there are still fewer females than males in Science and Technology professions. Discuss the possible reasons for this situation. [10]

- b) The Forum for African Women Educationalists Swaziland (FAWESWA) programmes are helping to keep girls in school and enrolled in science subjects. Explain how FAWESWA is accomplishing this task. [7]

- c) Attached is a Microteaching lesson plan for a Biology lesson. How would you modify this lesson plan so that it is gender responsive? [8]

4. a) Textbooks remain the most used teaching/learning resource in Eswatini schools. Discuss 3 criteria you would use to select a suitable SGCSE Biology textbook for your school and Region. [12]

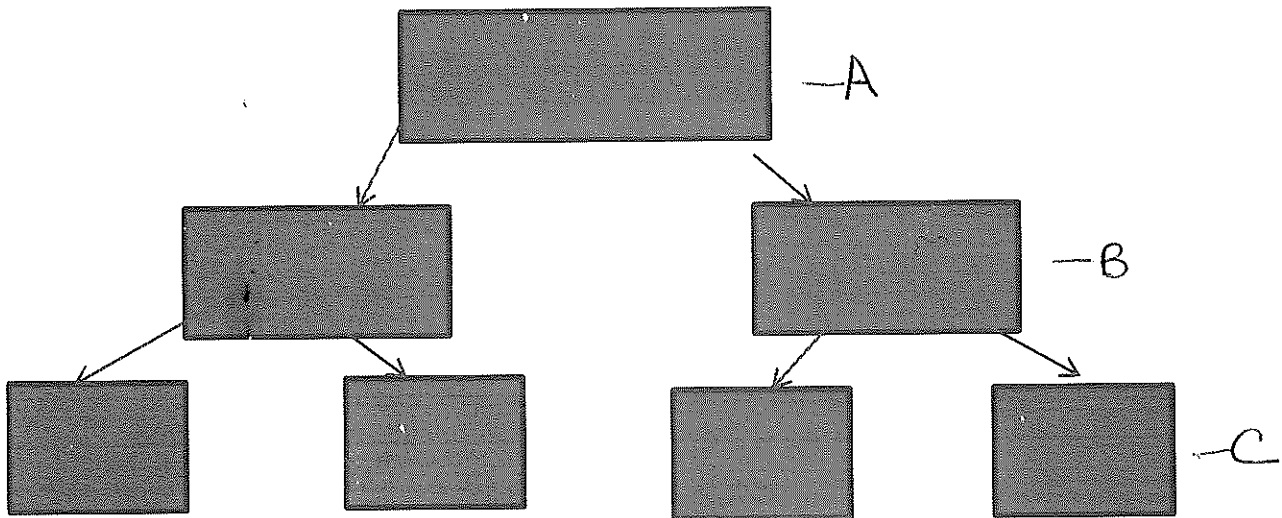
- b) Personal use of language facilitates the learning of science in learners.
 - i) Explain what the above statement means. [3]
 - ii) Discuss the significance of the above statement in writing and reporting experimental results. [4]

- c) Explain how the following affect information processing in working memory and, therefore, how learners respond to science assessment items: [2x3]
 - i) Terms of quantity
 - ii) Use of negatives
 - iii) Key words

5. a) Explain how, according to Ausubel, the following impacts on students' learning of science concepts: [3x3]
 - i) prior concepts
 - ii) subsumers

iii) advance organisers

b) Concept mapping is a strategy that can be used to achieve meaningful learning. Below is a hypothetical concept map. Answer the questions that follow:



- i) What is a concept map? [4]
- ii) What are the main parts of a concept map [4]
- iii) Distinguish between A and B; and Band C [4]
- iv) Explain how concept maps help in diagnosing misconceptions [4]

LESSON PLAN

CLASS : Form 4A

SUBJECT: BIOLOGY

TOPIC: Reproduction in Plants

LESSON AIM: To introduce reproduction in plants by discussing the functions of the parts important in reproduction

PRIOR KNOWLEDGE: The parts of a flower (petals, sepals, anthers, filaments, stamens, stigma, ovary, ovules)

LESSON OBJECTIVES:

At the end of the lesson, students should be able to:

- > Give the functions of the parts of a flower (petals, sepals, stigma, anther, ovary, ovules)
- > Relate the properties of the parts of the flower to their function in reproduction

TEACHING RESOURCES:

Mackean, D.G, (2002). *IGCSE Biology*. University of Cambridge, London.

Mayer, V.W, (1978). *Biology Teacher's Handbook*. Third Edition. Biological Sciences Curriculum Study.

TEACHING SKILLS USED: Use of Examples

LESSON DEVELOPMENT

Duration	Phase	Teacher activity	Student activity
1 minute	Introduction	Show learners a variety of flowers Give learners herbarium species Asks the following questions: What are these?	Observe Observe Respond to question: flowers
3 minutes	Explanation	Asks the following questions: What are the bright coloured parts of a flower? Why are they bright coloured? Which part is the petal? What is the function of the petal? Explain. Show example of a flower in the budding stage. What is the function of the anther? Explain the function of the stigma What makes the stigma suitable for its function? What is the function of the ovules?	Respond to questions: Petals To attract insects (for insect pollination) The green part at the bottom of the flower. It protects the flower in the budding stage. Listen. Watch. Where pollen is produced (pollen sacs) Listen It has a sticky surface They become seeds in

		Show a flower that has turned into a fruit. Explain where the fruit comes from	the fruit. Watch, listen
1 minute	Closure summarize	Note the key concepts by asking the following questions: What are the functions of: - Petals? - Sepals? - Stigma? - Anther? What eventually happens to the ovary?	Responding to questions: It becomes the fruit.

Lesson evaluation:

The lesson objectives were met since the learners were able to respond correctly to answers at the closure of the lesson.

Teacher evaluation:

The time was kept. Both deductive and inductive approaches were used but the student teacher could have also asked the learners to give their own examples.