



འབྲུག་གི་སློབ་གྲུབ་ཚོས་རྒྱུགས་དང་བརྟག་ཞིབ་ཚོགས་མཉམས་
Bhutan Council for School Examinations and Assessment
Royal Government of Bhutan



Ref.No. BCSEA(01)SED/BHSEC/2022/...316

August 31, 2022

All the Principals
Presenting BHSEC (XII) and BCSE (X) examinations for 2022

Subject: Approval for the use of Scientific calculator in Biology for BCSE (X) and BHSEC (XII) Examinations

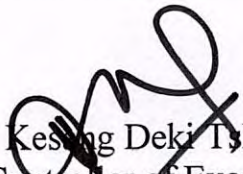
Sir(s) / Madam(s),

The BCSEA management would like to inform all the schools that for the 2022 BHSEC (XII) and BCSE (X) examinations, the candidates are permitted to use scientific calculator henceforth in Biology.

This is with reference to the letter No. MoE-DCPDISTEM/PBL(03)/2021-2022/2703 dated July 19, 2022 received from the Director, DCPD, Ministry of Education, Thimphu.

Thanking you.

Yours sincerely,


(Kesang Deki Tshering)
Controller of Examinations

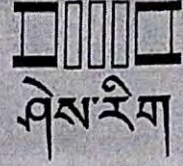
Copy to:

1. The Director, BCSEA for kind information.
2. The Director, DCPD, MoE, Thimphu for kind information.
3. Asstt. IT Officer, BCSEA to kindly upload in our BCSEA website.
4. Office Copy.



དཔལ་ལྷན་འགྲུལ་གཞུང་། ཤེས་རིག་ལྷན་ཁག།

Department of Curriculum & Professional Development
Ministry of Education



— Rethinking Education —

MOE-DCPD/STEM/PBL (03)/2021-2022/ 2703

July 19, 2022

Director,
Bhutan Council of School Examinations and Assessment (BCSEA)
Babesa, Thimphu

Subject: **The use of scientific calculator for BCSE and BHSEC Biology Examinations**

Sir/Madam,

The Department of Curriculum and Professional Development (DCPD), Ministry of Education recently implemented competency-based curricula in all school subjects, including classes 9 to 12 biology curriculum. The reformed classes 9 to 12 biology curriculum, as seen not much before, now requires students to dig deeper into the foundations of the Mendelian genetics, Hardy-Weinberg's genetic equilibrium, statistical chance or the probability of genetic cross, and like. These aspects of the revised curriculum ever demand students to use mathematical tools or statistical models in representing variables, drawing relationship between variables, or predicting outcomes of the phenomena.

As is the case, most mathematical tools or statistical modeling often come either in counterintuitive manner or beyond one's realm of mental calculation. This limit students' ability to develop or test theory, derive conclusions, or construct and refine explanatory models despite having robust conceptual understanding. Given these situations, the case looks certainly reasonable to allow the use of scientific calculator during BCSE and BHSEC biology examinations as carried out in physics and chemistry. The DCPD, thereof, request BCSEA to institute a system that allows the use of scientific calculator during BCSE and BHSEC biology examinations starting this year examinations.

This is submitted for your kind perusal and necessary follow-up, please.

(Tashi Namgyal)
Director

Cc: -

1. Offtg. Secretary, DSE, for kind information
2. Office copy