



## **GUIDELINES ON THE USE OF ELECTRONIC CALCULATORS IN NATIONAL EXAMINATIONS**

1. The calculators used in the national examinations should have the following minimum features:
  - (a) four arithmetic operations (+, −, ×, ÷) including the order of operations and use of brackets;
  - (b) fractional function which retains the fraction in the form 'a/b' and 'a b/c';
  - (c) square root ( $\sqrt{\quad}$ ) and cube root ( $\sqrt[3]{\quad}$ ) functions; and
  - (d) value of Pi ( $\pi$ ).
2. The following guidelines are to be adhered to in the use of calculators in national examinations.
  - (a) The calculator must be silent, with a visual display only.
  - (b) The working condition of the calculator (including the power supply) is the responsibility of the candidates and any fault in the calculator will not be considered as justification for special consideration.
  - (c) Candidates are not allowed to share calculators during the examination.
  - (d) No calculators with an external storage function which can allow users to input and store data via external storage media, e.g. cards, tapes, and plug-in modules, are allowed.
  - (e) No calculators with wireless communication capability with other machines, e.g. infra-red communication capability, are allowed.
  - (f) Any enclosed instruction leaflets containing any mathematical formula, conversion table or instructions are strictly prohibited, and must not be taken into the examination venue. Any such information on the calculator that cannot be removed must be securely covered.
  - (g) The original model number and brand must be indicated clearly on the calculator for verification purposes.
  - (h) No calculators with capabilities for storing and displaying verbal information are allowed.

### Additional guidelines for scientific calculators

- (i) No programmable calculators are allowed.
  - (j) No calculators with permanent features of a programmed kind are allowed, e.g. calculators capable of numerical integration, numerical differentiation, and/or expressing in irrational number form.
3. Graphing calculators are allowed for use ONLY in subjects examined at H1, H2 and H3 Levels of the GCE A-Level Curriculum. Candidates are to note the following:
    - (a) It is the candidates' responsibility to clear any information and/or programs stored in the graphing calculators before the examination.
    - (b) No prepared programs may be taken into the examination room. Information (including text or formulae) and/or programs stored in the calculator's memory must be cleared before the examination.
    - (c) No calculators with built-in symbolic algebra manipulations, symbolic differentiation or integration are allowed.
  4. The use of any calculator with unacceptable features or for retrieval of information/programs during the examinations is an infringement of the regulations.
  5. Candidates are only allowed to use approved calculator models. A list of approved models recommended for use could be found in Annex A.



**LIST OF APPROVED SCIENTIFIC CALCULATORS**

The following scientific calculator models are suitable for:

- PSLE Mathematics and Foundation Mathematics Examinations
- GCE N(T), N(A), O and A-Level Examinations

S/N	Calculator Brand	Calculator Model	Approved Period <sup>1</sup>
1	CASIO	FX 82MS	2003 - 2018
2		FX 85MS	2003 - 2018
3		FX 95MS	2003 - 2018
4		FX 95 SG Plus	2009 - 2018
5		FX 350MS	2003 - 2018
6		FX 96 SG Plus	2013 - 2017
7	HEWLETT PACKARD	HP10S	2008 - 2018
8		HP10S+	2014 - 2018
9	SHARP	EL 509WM	2005 - 2018
10		EL 509WS	2005 - 2018
11		EL 509X	2015 - 2019
12		EL W531S	2010 - 2019
13		EL W531M	2012 - 2016
14		EL W531XM	2014 - 2018
15		EL 533X	2013 - 2020
16	TEXAS INSTRUMENTS	TI 30XIIS	2010 - 2018

**LIST OF APPROVED GRAPHING CALCULATORS**

The following graphing calculator models are approved for use **ONLY** in subjects examined at H1, H2 and H3 Levels of the A-Level curriculum.

*Note: All graphing calculators must be reset prior to any examination.*

S/N	Calculator Brand	Calculator Model	Approved Period <sup>1</sup>
1	CASIO	FX-9860G Slim	2008 - 2018
2		FX-9860GIIIs	2014 - 2018
3	TEXAS INSTRUMENTS	TI-83 PLUS	2010 - 2018
4		TI-84 PLUS	2006 - 2020
5		TI-84 PLUS Silver Edition	2006 - 2020
6		TI-84 PLUS Pocket SE	2012 - 2016
7		TI-84 Plus C Silver Edition	2015 - 2018

<sup>1</sup> Please be informed that if there is no application for extension of the approved period for the calculator model, it will be removed from the list of approved calculators upon expiry. The onus is on the vendors to submit and apply for extension of the approved period if they wish to.