

## **General Class License Manual (GCLM) and General Q&A – Errata and Corrections**

The following material supports or corrects the following publications:

GCLM 10th edition — First Printing

GCLM 10th edition — Second Printing

GCLM Q&A 7th edition — First Printing

GCLM Q&A 7th edition — Second Printing

Determine the version of the manual you are using by referring to the first page of the preface inside your copy. Look for the text box with the copyright information where you'll also find the edition and printing information. (If the edition number is not followed by printing information, the book is the first printing.) The ARRL wishes to thank readers who sent feedback about errors.

The current question pool for the General Class license took effect on July 1, 2023.

## **SUPPLEMENTAL INFORMATION**

### *General Class License Manual*

**Page 4-3** — Conventional current is the standard used today in electronics, including ARRL literature, as discussed in the section "Current, Voltage, and Power". The license exam questions assume conventional current, as well. The use of conventional versus electronic current is a common point of confusion when studying radio electronics. Conventional current (the flow of positive charge) is equivalent to but exactly opposite of electronic current (the flow of negative charge) even though the voltage polarities remain the same. Many engineering textbooks use electronic current and physics texts use electronic current. Further, when getting into the details of how electronic devices such as vacuum tubes and transistors actually function, electronic current must be used, so the line blurs even in electronics.

**Page 6-5** — Question G8A06 includes a comparison of bandwidth between the digital modes BPSK31 and QPSK31. The simplest and most common version of PSK31 that uses a single audio tone should be abbreviated as BPSK31 (binary PSK31).

## **ERRATA**

### *General Class License Manual*

First Printing

**Page 1-8** — Incorrectly states that you need to know your SSN for the General class exam. This should have been given as FRN (FCC Registration Number).

**Page 2-14** — The AR prosign was given without the bar across the two characters. It should have been given with the bar.

**Page 3-10** — The repeater allocation in the 10-meter band was given as “...from 29.6 to 29.7 MHz.” It should have been “**29.5** to 29.7 MHz.”

**Page 4-2** — The equation given for question [**G5B03**] omitted the square. It should have been given as  $P = \frac{E^2}{R}$ .

**Page 4-12** — In **Example 19**, the answer was given incorrectly as 8,800  $\mu\text{H}$ .

It should have been given as 88,000  $\mu\text{H}$ .

**Page 4-19** — Example 32 was missing the second value of 5,000 pF. This should have been given as:

$$C_{\text{EQU}} = 5,000 + 5,000 + 750 = 10,750 \text{ pF} = 10.75 \text{ nF}$$

**Page 4-23** — The concept of “Admittance” was introduced but not discussed further. It should have included the following:

If impedance is the opposition to ac current flow, then admittance measures the ease with which ac current flows.

**Page 5-5** — The explanation of oscillation was incomplete. It should have been given as:

At start-up, the circuit’s loop gain through the amplifier and feedback path has to be greater than 1 so that circuit noise can be gradually built up into a single-frequency signal. Once the amplitude of the output has reached the desired level, gain is reduced (called compression) in order to maintain a stable, self-sustaining, sine wave output. This is called *oscillation*.

**Page 5-16** — Question G7C08 lacked context. The following, further explanation should have been given on page 5-18:

Each of these components — amplifier gain and noise figure as well as demodulator bandwidth — impact receiver sensitivity.

**Page 5-20** — The question reference for G4D07 was not included in the corresponding discussion in-text. It should have appeared on Page 5-20 as follows:

S-meters are calibrated in *S-units*, with a change of one S-unit usually equal to a 6 dB (fourfold) change in signal strength, although this may vary with manufacturer. [**G4D06, G4D07**]

**Page 5-25** — The answer for question G8B13 should have received additional context and should have moved from the section on *Harmonics* to a subsection on *Intermodulation products*. The additional context should have been given as follows:

*Intermodulation products* result whenever one or more signals are mixed together, and they follow a simple scheme of  $mF_1 + nF_2$  where F is the frequency and m and n are any integer or zero. The second order intermodulation products are  $2F_1$  and  $2F_2$ , while the third order IPs are  $2F_1 \pm F_2$  and  $2F_2 \pm F_1$ .

**Page 10-13** — For question **G2A12** the page reference was given incorrectly as 5-7.

It should have been given as 5-8.

**Page 10-27** — For question **G4A07** the page reference was given incorrectly as 5-14.

It should have been given as 5-16.

**Page 10-27** — For question **G4A11** the page reference was given incorrectly as 6-12.

It should have been given as 6-11.

**Page 10-29** — For question **G4B08** the page reference was given incorrectly as 4-43.

It should have been given as 5-8.

**Page 10-32** — For question **G4D02** the page reference was given incorrectly as 5-7.

It should have been given as 5-8.

**Page 10-46** — For question **G7B03** the page reference was given incorrectly as 5-14.

It should have been given as 4-29.

**Page 10-50** — For question **G8A13** the page reference was given incorrectly as 5.

It should have been given as 5-1.

**Page 10-53** — For question **G8C05** the page reference was given incorrectly as 6-7.

It should have been given as 6-6.

**Page 10-53** — For question **G8C06** the page reference was given incorrectly as 6-7.

It should have been given as 6-14.

**Page 10-55** — For question **G9A01** the page reference was given incorrectly as 7-20.

It should have been given as 7-19.

**Page 10-58** — For question **G9C04** the page reference was given incorrectly as 7-8.

It should have been given as 7-2.

**Page 10-58** — For question **G9C05** the page reference was given incorrectly as 7-1.

It should have been given as 7-8.

**Page 10-60** — For question **G9D04** the page reference was given incorrectly as 7-13.

It should have been given as 7-16.

Second printing

**Page 4-12** — In **Example 19**, the answer was given incorrectly as 8,800  $\mu\text{H}$ .

It should have been given as 88,000  $\mu\text{H}$ .

### *ARRL's General Q&A*

First printing

**Page 1** — For question **G1A01** the page reference was given incorrectly as 3-8.

It should have been given as 3-7.

**Page 1** — For question **G1A02** the page reference was given incorrectly as 3-8.

It should have been given as 3-7.

**Page 1** — For question **G1A03** the page reference was given incorrectly as 3-8.

It should have been given as 3-7.

**Page 2** — For question **G1A04** the page reference was given incorrectly as 3-8.

It should have been given as 3-7.

**Page 2** — For question **G1A05** the page reference was given incorrectly as 3-8.

It should have been given as 3-7.

**Page 4** — For question **G1A07** the page reference was given incorrectly as 3-8.

It should have been given as 3-7.

**Page 6** — For question **G1B01** the page reference was given incorrectly as 3-3.

It should have been given as 3-1.

**Page 11** — For question **G1C04** the page reference was given incorrectly as 3-15.

It should have been given as 2-5.

**Page 11** — For question **G1C06** the page reference was given incorrectly as 3-14.

It should have been given as 3-15.

**Page 12** — For question **G1C07** the page reference was given incorrectly as 3-16.

It should have been given as 3-17.

**Page 12** — For question **G1C09** the page reference was given incorrectly as 3-16.

It should have been given as 3-15.

**Page 13** — For question **G1C11** the page reference was given incorrectly as 3-16.

It should have been given as 3-15.

**Page 16** — For question **G1D05** the page reference was given incorrectly as 3-4.

It should have been given as 3-1.

**Page 18** — For question **G1D11** the page reference was given incorrectly as 3-5.

It should have been given as 3-4.

**Page 27** — For question **G2B01** the page reference was given incorrectly as 2-2.

It should have been given as 2-1.

**Page 29** — For question **G2B04** the page reference was given incorrectly as 2-4.

It should have been given as 2-1.

**Page 29** — For question **G2B06** the page reference was given incorrectly as 2-2.

It should have been given as 2-1.

**Page 33** — For question **G2B11** the page reference was given incorrectly as 2-18.

It should have been given as 2-13.

**Page 36** — The answer for question G2C10 was incorrectly given as B.

The answer should have been given as D.

**Page 38** — For question **G2D04** the page reference was given incorrectly as 7-9.

It should have been given as 7-8.

**Page 44** — For question **G2E07** the page reference was given incorrectly as 6-1.

It should have been given as 6-6.

**Page 45** — For question **G2E09** the page reference was given incorrectly as 6-7.

It should have been given as 6-6.

**Page 46** — For question **G2E10** the page reference was given incorrectly as 6-12.

It should have been given as 6-14.

**Page 46** — For question **G2E11** the page reference was given incorrectly as 6-9.

It should have been given as 6-6.

**Page 95** — For question **G5B06** the page reference was given incorrectly as 4-6.

It should have been given as 4-5.

**Page 108** — For question **G6A08** there was no page number referenced.

It should have been provided as 4-13.

**Page 132** — Question **G7C12** was omitted.

The question should have appeared as follows:

**G7C12** What is the frequency above which a low-pass filter's output power is less than half the input power?

- A. Notch frequency
- B. Neper frequency
- C. Cutoff frequency
- D. Rolloff frequency

(C) A low-pass filter (Figure G7.10A) is one in which all frequencies below the cutoff frequency are passed with little or no attenuation. The cutoff frequency ( $f_{CO}$ ) is the frequency at which the output signal power is reduced to one-half that of the input signal. [General Class License Manual, page 5-3]

**Page 141** — Question G8A14 incorrectly gave the answer as C. It should be **B**.

**Page 148** — For question **G8C04** the page reference was given incorrectly as 6-5.

It should have been given as 6-4.



**Page 152** — For question **G8C16** the page reference was given incorrectly as 6-13.

It should have been given as 6-1.

**Page 181** — For question **G0B09** the page reference was given incorrectly as 9-7.

It should have been given as 9-6.

**Page 181** — For question **G0B10** the page reference was given incorrectly as 9-6.

It should have been given as 9-3.

#### Second Printing

**Page 36** — The answer for question G2C10 was incorrectly given as B.

The answer should have been given as D.

**Page 141** — Question G8A14 incorrectly gave the answer as C. It should be **B**.