G类业余无线电台操作证书考试题库 (共429道)

G1 COMMISSION'S RULES
委员会规则

G1A General class control operator frequency privileges; primary and secondary allocations
通用类控制操作员频率特权；主要和次要分配

G1A01. On which HF and/or MF amateur bands are there portions where General class licensees cannot transmit?
在哪些HF和/或MF业余频段上，有普通级许可证持有者无法传输的部分?

A. 60 meters, 30 meters, 17 meters, and 12 meters ✗
60米、30米、17米和12米
B. 160 meters, 60 meters, 15 meters, and 12 meters ✗
160米、60米、15米和12米
C. 80 meters, 40 meters, 20 meters, and 15 meters ✓
80米、40米、20米和15米
D. 80 meters, 20 meters, 15 meters, and 10 meters ✗
80米、20米、15米和10米

G1A02. On which of the following bands is phone operation prohibited?
以下哪个频段禁止操作电话?

A. 160 meters ✗
160米
B. 30 meters ✓
30米
C. 17 meters ✗
17米
D. 12 meters ✗
12米

G1A03. On which of the following bands is image transmission prohibited?
以下哪一个频段禁止图像传输?

A. 160 meters ✗
160米
B. 30 meters ✓
30米
C. 20 meters ✗
20米
D. 12 meters ✗
12米

G1A04. Which of the following amateur bands is restricted to communication only on specific channels, rather than frequency ranges?
以下哪一个业余频段仅限于特定频道上的通信，而非频率范围?

A. 11 meters ✗
11米
B. 12 meters ✗
12米
C. 30 meters ✗
30米
D. 60 meters ✓
60米

G1A05. On which of the following frequencies are General class licensees prohibited from operating as control operator?
在以下哪个频率上，普通级许可证持有者被禁止作为控制操作员操作?

A. 7.125 MHz to 7.175 MHz ✓
7.125 MHz至7.175 MHz
B. 28.000 MHz to 28.025 MHz ✗
28.000 MHz至28.025 MHz
C. 21.275 MHz to 21.300 MHz ✗
21.275兆赫至21.300兆赫
D. All of the above ✗
以上所有内容

G1A06. Which of the following applies when the FCC rules designate the amateur service as a secondary user on a band?
当FCC规则将业余服务指定为乐队的二级用户时，以下哪项适用?

A. Amateur stations must record the call sign of the primary service station before operating on a frequency assigned to that station ✗
业余电台在指定给该电台的频率上工作之前，必须记录主要服务电台的呼号
B. Amateur stations may use the band only during emergencies ✗
业余电台只能在紧急情况下使用乐队
C. Amateur stations must not cause harmful interference to primary users and must accept interference from primary users ✓
业余站不得对主要用户造成有害干扰，并且必须接受主要用户的干扰
D. Amateur stations may only operate during specific hours of the day, while primary users are permitted 24-hour use of the band ✗
业余电台只能在一天中的特定时间运行，而主要用户可以24小时使用乐队

G1A07. On which amateur frequencies in the 10-meter band may stations with a General class control operator transmit CW emissions?
具有普通级控制操作员的电台可以在10米波段的哪些业余频率上发射CW发射?

A. 28.000 MHz to 28.025 MHz only ✗
仅28.000 MHz至28.025 MHz
B. 28.000 MHz to 28.300 MHz only ✗
仅28.000 MHz至28.300 MHz
C. 28.025 MHz to 28.300 MHz only ✗
仅28.025 MHz至28.300 MHz
D. The entire band ✓
整个乐队

G1A08. Which HF bands have segments exclusively allocated to Amateur Extra licensees?
哪些高频频带的分段专门分配给业余额外许可证持有者?

A. All HF bands ✗
所有HF波段
B. 80 meters, 40 meters, 20 meters, and 15 meters ✓
80米、40米、20米和15米
C. All HF bands except 160 meters and 10 meters ✗
除160米和10米外的所有HF波段
D. 60 meters, 30 meters, 17 meters, and 12 meters ✗
60米、30米、17米和12米

G1A09. Which of the following frequencies is within the General class portion of the 15-meter band?
以下哪个频率属于15米波段的普通级部分?

A. 14250 kHz ✗
14250千赫
B. 18155 kHz ✗
18155千赫
C. 21300 kHz ✓
21300千赫
D. 24900 kHz ✗
24900千赫

G1A10. What portion of the 10-meter band is available for repeater use?
10米波段的哪一部分可供中继器使用?

A. The entire band ✗
整个乐队
B. The portion between 28.1 MHz and 28.2 MHz ✗
28.1 MHz和28.2 MHz之间的部分
C. The portion between 28.3 MHz and 28.5 MHz ✗
28.3 MHz和28.5 MHz之间的部分
D. The portion above 29.5 MHz ✓
29.5 MHz以上的部分

G1A11. When General class licensees are not permitted to use the entire voice portion of a band, which portion of the voice segment is available to them?
当普通类许可证持有者不被允许使用频带的整个语音部分时，他们可以使用语音片段的哪一部分?

A. The lower frequency portion ✗
低频部分
B. The upper frequency portion ✓
高频部分
C. The lower frequency portion on frequencies below 7.3 MHz, and the upper portion on frequencies above 14.150 MHz ✗
频率低于7.3MHz的低频部分和频率高于14.150MHz的高频部分
D. The upper frequency portion on frequencies below 7.3 MHz, and the lower portion on frequencies above 14.150 MHz ✗
频率在7.3MHz以下的高频部分，频率在14.150MHz以上的低频部分

G1B Antenna structure limitations; good engineering and good amateur practice; beacon operation; prohibited transmissions; retransmitting radio signals
天线结构限制；良好的工程和良好的业余实践；信标操作；禁止传输；重发无线电信号

G1B01. What is the maximum height above ground for an antenna structure not near a public use airport without requiring notification to the FAA and registration with the FCC?
在不需要通知FAA并在FCC注册的情况下，不在公共机场附近的天线结构的最大离地高度是多少?

A. 50 feet ✗
50英尺
B. 100 feet ✗
100英尺
C. 200 feet ✓
200英尺
D. 250 feet ✗
250英尺

G1B02. With which of the following conditions must beacon stations comply?
信标台必须符合以下哪种条件?

A. No more than one beacon station may transmit in the same band from the same station location ✓
不超过一个信标站可以在同一频带中从同一站位置进行发射
B. The frequency must be coordinated with the National Beacon Organization ✗
频率必须与国家信标组织协调
C. The frequency must be posted on the internet or published in a national periodical ✗
频率必须发布在互联网上或发表在国家期刊上
D. All these choices are correct ✗
所有这些选择都是正确的

G1B03. Which of the following is a purpose of a beacon station as identified in the FCC rules?
以下哪项是FCC规则中确定的信标站的用途?

A. Observation of propagation and reception ✓
传播和接收的观察
B. Automatic identification of repeaters ✗
中继器的自动识别
C. Transmission of bulletins of general interest to amateur radio licensees ✗
向业余无线电持牌人传送公众关注的公告
D. All these choices are correct ✗
所有这些选择都是正确的

G1B04. Which of the following transmissions is permitted for all amateur stations?
以下哪种传输允许用于所有业余电台?

A. Unidentified transmissions of less than 10 seconds duration for test purposes only ✗
持续时间小于10秒的未识别传输，仅用于测试目的
B. Automatic retransmission of other amateur signals by any amateur station ✗
任何业余电台自动重传其他业余信号
C. Occasional retransmission of weather and propagation forecast information from US government stations ✓
美国政府电视台偶尔转播天气和传播预报信息
D. Encrypted messages, if not intended to facilitate a criminal act ✗
加密信息，如果不是为了促进犯罪行为

G1B05. Which of the following one-way transmissions are permitted?
以下哪种单向变速器是允许的?

A. Unidentified test transmissions of less than 10 seconds in duration ✗
持续时间小于10秒的未识别测试传输
B. Transmissions to assist with learning the International Morse code ✓
协助学习国际莫尔斯电码的传输
C. Regular transmissions offering equipment for sale, if intended for amateur radio use ✗
提供出售设备的定期传输，如果打算供业余无线电使用
D. All these choices are correct ✗
所有这些选择都是正确的

G1B06. Under what conditions are state and local governments permitted to regulate amateur radio antenna structures?
在什么条件下，州和地方政府可以监管业余无线电天线结构?

A. Under no circumstances, FCC rules take priority ✗
在任何情况下，FCC规则都是优先的
B. At any time and to any extent necessary to accomplish a legitimate purpose of the state or local entity, provided that proper filings are made with the FCC ✗
在任何时间和任何程度上，只要向联邦通信委员会提交了适当的文件，就可以实现州或地方实体的合法目的
C. Only when such structures exceed 50 feet in height and are clearly visible 1,000 feet from the structure ✗
只有当此类结构的高度超过50英尺，并且在距离结构1000英尺处清晰可见时
D. Amateur Service communications must be reasonably accommodated, and regulations must constitute the minimum practical to accommodate a legitimate purpose of the state or local entity ✓
必须合理地适应业余服务通信，法规必须构成适应州或地方实体合法目的的最低实用性

G1B07. What are the restrictions on the use of abbreviations or procedural signals in the amateur service?
在业余服务中使用缩写或程序信号有哪些限制?

A. Only “Q” signals are permitted ✗
只允许使用“Q”信号
B. They may be used if they do not obscure the meaning of a message ✓
如果它们不模糊信息的含义，就可以使用
C. They are not permitted ✗
他们是不允许的
D. They are limited to those expressly listed in Part 97 of the FCC rules ✗
它们仅限于FCC规则第97部分中明确列出的内容

G1B08. When is it permissible to communicate with amateur stations in countries outside the areas administered by the Federal Communications Commission?
何时允许与联邦通信委员会管理区域以外国家的业余电台进行通信?

A. Only when the foreign country has a formal third-party agreement filed with the FCC ✗
仅当外国已向FCC提交正式的第三方协议时
B. When the contact is with amateurs in any country except those whose administrations have notified the ITU that they object to such communications ✓
当与任何国家的业余爱好者进行联系时，除非这些国家的管理部门已通知国际电联他们反对此类通信
C. Only when the contact is with amateurs licensed by a country which is a member of the United Nations, or by a territory possessed by such a country ✗
只有在与联合国会员国或该国拥有的领土许可的业余爱好者接触时
D. Only when the contact is with amateurs licensed by a country which is a member of the International Amateur Radio Union, or by a territory possessed by such a country ✗
只有在与国际业余无线电联盟成员国或该国拥有的领土许可的业余爱好者接触时

G1B09. On what HF frequencies are automatically controlled beacons permitted?
在什么高频上允许自动控制信标?

A. On any frequency if power is less than 1 watt ✗
在任何频率上，如果功率小于1瓦
B. On any frequency if transmissions are in Morse code ✗
在任何频率上，如果传输是莫尔斯电码
C. 21.08 MHz to 21.09 MHz ✗
21.08兆赫至21.09兆赫
D. 28.20 MHz to 28.30 MHz ✓
28.20 MHz至28.30 MHz

G1B10. What is the power limit for beacon stations?
信标台的功率限制是多少?

A. 10 watts PEP output ✗
10瓦PEP输出
B. 20 watts PEP output ✗
20瓦PEP输出
C. 100 watts PEP output ✓
100瓦PEP输出
D. 200 watts PEP output ✗
200瓦PEP输出

G1B11. Who or what determines “good engineering and good amateur practice,” as applied to the operation of an amateur station in all respects not covered by the Part 97 rules?
谁或什么决定了“良好的工程和良好的业余实践”，适用于业余电台在第97部分规则未涵盖的所有方面的运营?

A. The FCC ✓
FCC
B. The control operator ✗
控制操作员
C. The IEEE ✗
IEEE
D. The ITU ✗
国际电联

G1C Transmitter power regulations; data emission standards; 60-meter operation requirements
变送器功率规定；数据排放标准；60米操作要求

G1C01. What is the maximum transmitter power an amateur station may use on 10.140 MHz?
业余电台在10.140 MHz上可以使用的最大发射机功率是多少?

A. 200 watts PEP output ✓
200瓦PEP输出
B. 1000 watts PEP output ✗
1000瓦PEP输出
C. 1500 watts PEP output ✗
1500瓦PEP输出
D. 2000 watts PEP output ✗
2000瓦PEP输出

G1C02. What is the maximum transmitter power an amateur station may use on the 12-meter band?
业余电台在12米波段上可以使用的最大发射机功率是多少?

A. 50 watts PEP output ✗
50瓦PEP输出
B. 200 watts PEP output ✗
200瓦PEP输出
C. 1500 watts PEP output ✓
1500瓦PEP输出
D. An effective radiated power equivalent to 100 watts from a half-wave dipole ✗
半波偶极子的有效辐射功率相当于100瓦

G1C03. What is the maximum bandwidth permitted by FCC rules for amateur radio stations transmitting on USB frequencies in the 60-meter band?
FCC规则允许业余电台在60米波段的USB频率上传输的最大带宽是多少?

A. 2.8 kHz ✓
2.8千赫
B. 5.6 kHz ✗
5.6千赫
C. 1.8 kHz ✗
1.8千赫
D. 3 kHz ✗
3千赫

G1C04. Which of the following is required by the FCC rules when operating in the 60-meter band?
在60米波段工作时，FCC规则要求以下哪一项?

A. If you are using an antenna other than a dipole, you must keep a record of the gain of your antenna ✓
如果你使用的是偶极以外的天线，你必须记录天线的增益
B. You must keep a record of the date, time, frequency, power level, and stations worked ✗
您必须记录工作的日期、时间、频率、功率水平和电台
C. You must keep a record of all third-party traffic ✗
您必须记录所有第三方流量
D. You must keep a record of the manufacturer of your equipment and the antenna used ✗
您必须记录设备的制造商和使用的天线

G1C05. What is the limit for transmitter power on the 28 MHz band for a General Class control operator?
对于普通级控制操作员来说，28 MHz频带上的发射机功率限制是多少?

A. 100 watts PEP output ✗
100瓦PEP输出
B. 1000 watts PEP output ✗
1000瓦PEP输出
C. 1500 watts PEP output ✓
1500瓦PEP输出
D. 2000 watts PEP output ✗
2000瓦PEP输出

G1C06. What is the limit for transmitter power on the 1.8 MHz band?
1.8 MHz频带上的发射机功率限制是多少?

A. 200 watts PEP output ✗
200瓦PEP输出
B. 1000 watts PEP output ✗
1000瓦PEP输出
C. 1200 watts PEP output ✗
1200瓦PEP输出
D. 1500 watts PEP output ✓
1500瓦PEP输出

G1C07. What must be done before using a new digital protocol on the air?
在广播中使用新的数字协议之前必须做什么?

A. Type-certify equipment to FCC standards ✗
符合FCC标准的型式认证设备
B. Obtain an experimental license from the FCC ✗
从FCC获得实验许可
C. Publicly document the technical characteristics of the protocol ✓
公开记录协议的技术特征
D. Submit a rule-making proposal to the FCC describing the codes and methods of the technique ✗
向FCC提交一份规则制定提案，说明该技术的代码和方法

G1C08. What is the maximum symbol rate permitted for RTTY or data emission transmitted at frequencies below 28 MHz?
RTTY或以低于28 MHz的频率传输的数据发射所允许的最大符号率是多少?

A. 56 kilobaud ✗
56千波特
B. 19.6 kilobaud ✗
19.6千波特
C. 1200 baud ✗
1200波特
D. 300 baud ✓
300波特

G1C09. What is the maximum power limit on the 60-meter band?
60米波段的最大功率限制是多少?

A. 1500 watts PEP ✗
1500瓦PEP
B. 10 watts RMS ✗
10瓦RMS
C. ERP of 100 watts PEP with respect to a dipole ✓
相对于偶极子100瓦PEP的ERP
D. ERP of 100 watts PEP with respect to an isotropic antenna ✗
相对于各向同性天线，100瓦PEP的ERP

G1C10. What is the maximum symbol rate permitted for RTTY or data emission transmissions on the 10-meter band?
在10米波段上，RTTY或数据发射传输允许的最大符号率是多少?

A. 56 kilobaud ✗
56千波特
B. 19.6 kilobaud ✗
19.6千波特
C. 1200 baud ✓
1200波特
D. 300 baud ✗
300波特

G1C11. What measurement is specified by FCC rules that regulate maximum power?
FCC规则规定了什么测量方法来调节最大功率?

A. RMS output from the transmitter ✗
变送器的RMS输出
B. RMS input to the antenna ✗
天线的RMS输入
C. PEP input to the antenna ✗
天线的PEP输入
D. PEP output from the transmitter ✓
变送器的PEP输出

G1D Volunteer Examiners and Volunteer Examiner Coordinators; temporary identification; element credit; remote operation
志愿审查员和志愿审查员协调员；临时身份；要素信用；远程操作

G1D01. Who may receive partial credit for the elements represented by an expired amateur radio license?
谁可能会因过期的业余无线电许可证所代表的元素而获得部分积分?

A. Any person who can demonstrate that they once held an FCC-issued General, Advanced, or Amateur Extra class license that was not revoked by the FCC ✓
任何能够证明自己曾经持有FCC颁发的未被FCC吊销的普通、高级或业余特级许可证的人
B. Anyone who held an FCC-issued amateur radio license that expired not less than 5 and not more than 15 years ago ✗
任何持有FCC颁发的业余无线电许可证的人，该许可证在5年至15年前到期
C. Any person who previously held an amateur license issued by another country, but only if that country has a current reciprocal licensing agreement with the FCC ✗
任何以前持有另一个国家颁发的业余许可证的人，但前提是该国家与FCC有当前的互惠许可协议
D. Only persons who once held an FCC issued Novice, Technician, or Technician Plus license ✗
仅限曾经持有FCC颁发的新手、技术员或技术员+执照的人员

G1D02. What license examinations may you administer as an accredited Volunteer Examiner holding a General class operator license?
作为一名持有普通类操作员执照的合格志愿者，你可以参加哪些执照考试?

A. General and Technician ✗
将军和技术员
B. None, only Amateur Extra class licensees may be accredited ✗
没有，只有业余特级许可证持有者可以获得认证
C. Technician only ✓
仅限技术人员
D. Amateur Extra, General, and Technician ✗
业余特级、普通和技术员

G1D03. On which of the following band segments may you operate if you are a Technician class operator and have an unexpired Certificate of Successful Completion of Examination (CSCE) for General cl
如果你是一名技术员级操作员，并且持有未到期的普通级考试成功完成证书（CSCE），你可以在以下哪一个波段段进行操作

A. Only the Technician band segments until your upgrade is posted in the FCC database ✗
在升级之前，只有技术员波段段会发布在FCC数据库中
B. Only on the Technician band segments until you have a receipt for the FCC application fee payment ✗
在收到FCC申请费付款收据之前，仅在技术员波段
C. On any General or Technician class band segment ✓
在任何普通级或技师级波段段上
D. On any General or Technician class band segment except 30 meters and 60 meters ✗
在除30米和60米以外的任何普通级或技术级波段段上

G1D04. Who must observe the administration of a Technician class license examination?
谁必须遵守技师级执照考试的管理?

A. At least three Volunteer Examiners of General class or higher ✓
至少三名普通级或更高级别的志愿考官
B. At least two Volunteer Examiners of General class or higher ✗
至少两名普通级或更高级别的志愿考官
C. At least two Volunteer Examiners of Technician class or higher ✗
至少两名技术员或以上级别的志愿考官
D. At least three Volunteer Examiners of Technician class ✗
至少三名技术员志愿考官

G1D05. When operating a US station by remote control from outside the country, what license is required of the control operator?
当从国外通过远程控制操作美国站时，控制操作员需要什么许可证?

A. A US operator/primary station license ✓
美国运营商/主站许可证
B. Only an appropriate US operator/primary license and a special remote station permit from the FCC ✗
只有适当的美国运营商/主要许可证和FCC的特殊远程站许可证
C. Only a license from the foreign country, as long as the call sign includes identification of portable operation in the US ✗
只有来自外国的许可证，只要呼号包括在美国的便携式操作标识
D. A license from the foreign country and a special remote station permit from the FCC ✗
外国的许可证和FCC的特殊远程站许可证

G1D06. Until an upgrade to General class is shown in the FCC database, when must a Technician licensee identify with “AG” after their call sign?
在FCC数据库中显示升级到普通类之前，技术人员持牌人何时必须在呼号后识别“AG”?

A. Whenever they operate using General class frequency privileges ✓
每当他们使用通用类频率特权操作时
B. Whenever they operate on any amateur frequency ✗
每当他们在任何业余频率上工作时
C. Whenever they operate using Technician frequency privileges ✗
每当他们使用技师频率权限进行操作时
D. A special identifier is not required if their General class license application has been filed with the FCC ✗
如果他们的普通类许可证申请已向FCC提交，则不需要特殊标识符

G1D07. Volunteer Examiners are accredited by what organization?
志愿考官由哪个组织认证?

A. The Federal Communications Commission ✗
联邦通信委员会
B. The Universal Licensing System ✗
通用许可证制度
C. A Volunteer Examiner Coordinator ✓
志愿考官协调员
D. The Wireless Telecommunications Bureau ✗
无线电讯局

G1D08. Which of the following criteria must be met for a non-US citizen to be an accredited Volunteer Examiner?
非美国公民必须满足以下哪项标准才能成为合格的志愿考官?

A. The person must be a resident of the US for a minimum of 5 years ✗
此人必须是美国居民至少5年
B. The person must hold an FCC granted amateur radio license of General class or above ✓
个人必须持有FCC授予的普通级或以上业余无线电执照
C. The person's home citizenship must be in ITU region 2 ✗
此人的本国公民身份必须在国际电联地区2
D. None of these choices is correct; a non-US citizen cannot be a Volunteer Examiner ✗
这些选择都不正确；非美国公民不能成为志愿考官

G1D09. How long is a Certificate of Successful Completion of Examination (CSCE) valid for exam element credit?
成功完成考试证书（CSCE）对考试要素学分的有效期是多久?

A. 30 days ✗
30天
B. 180 days ✗
180天
C. 365 days ✓
365天
D. For as long as your current license is valid ✗
只要您当前的许可证有效

G1D10. What is the minimum age that one must be to qualify as an accredited Volunteer Examiner?
一个人必须达到什么样的最低年龄才能获得合格的志愿考官资格?

A. 16 years ✗
16年
B. 18 years ✓
18年
C. 21 years ✗
21年
D. There is no age limit ✗
没有年龄限制

G1D11. What action is required to obtain a new General class license after a previously held license has expired and the two-year grace period has passed?
在之前持有的许可证到期且两年宽限期已过后，需要采取什么行动才能获得新的普通类许可证?

A. They must have a letter from the FCC showing they once held an amateur or commercial license ✗
他们必须有FCC的一封信，证明他们曾经持有业余或商业执照
B. There are no requirements other than being able to show a copy of the expired license ✗
除了能够显示过期许可证的副本之外，没有其他要求
C. Contact the FCC to have the license reinstated ✗
联系FCC以恢复许可证
D. The applicant must show proof of the appropriate expired license grant and pass the current Element 2 exam ✓
申请人必须出示相应的过期许可证证明，并通过当前的要素2考试

G1D12. When operating a station in South America by remote control over the internet from the US, what regulations apply?
当从美国通过互联网远程控制在南美洲运营电台时，适用哪些规定?

A. Those of both the remote station's country and the FCC ✗
远程站所在国家和FCC
B. Those of the remote station's country and the FCC's third-party regulations ✗
远程站所在国家和FCC第三方法规
C. Only those of the remote station's country ✓
只有远程电台所在国家的人
D. Only those of the FCC ✗
只有FCC的

G1E Control categories; repeater regulations; third-party rules; ITU regions; automatically controlled digital station
控制类别；中继器条例；第三方规则；国际电联区域；自动控制数字站

G1E01. Which of the following would disqualify a third party from participating in sending a message via an amateur station?
以下哪项会使第三方失去通过业余电台发送信息的资格?

A. The third party's amateur license has been revoked and not reinstated ✓
第三方的业余执照已被吊销且未恢复
B. The third party is not a US citizen ✗
第三方不是美国公民
C. The third party is speaking in a language other than English ✗
第三方使用的语言不是英语
D. All these choices are correct ✗
所有这些选择都是正确的

G1E02. When may a 10-meter repeater retransmit the 2-meter signal from a station that has a Technician class control operator?
10米中继器何时可以从具有技师级控制操作员的工作站重新传输2米信号?

A. Under no circumstances ✗
在任何情况下
B. Only if the station on 10-meters is operating under a Special Temporary Authorization allowing such retransmission ✗
仅当10米上的电台在允许重新传输的特殊临时授权下运行时
C. Only during an FCC-declared general state of communications emergency ✗
仅在FCC宣布通信紧急状态期间
D. Only if the 10-meter repeater control operator holds at least a General class license ✓
仅当10米中继器控制操作员至少持有普通级许可证时

G1E03. What is required to conduct communications with a digital station operating under automatic control outside the automatic control band segments?
在自动控制频带段之外，与在自动控制下运行的数字站进行通信需要什么?

A. The station initiating the contact must be under local or remote control ✓
启动联系的工作站必须处于本地或远程控制之下
B. The interrogating transmission must be made by another automatically controlled station ✗
询问传输必须由另一个自动控制站进行
C. No third-party traffic may be transmitted ✗
不得传输第三方流量
D. The control operator of the interrogating station must hold an Amateur Extra class license ✗
询问站的控制操作员必须持有业余特级执照

G1E04. Which of the following conditions require a licensed amateur radio operator to take specific steps to avoid harmful interference to other users or facilities?
以下哪项条件要求持有执照的业余无线电操作员采取具体措施，避免对其他用户或设施造成有害干扰?

A. When operating within one mile of an FCC Monitoring Station ✗
在距离FCC监测站一英里以内运行时
B. When using a band where the Amateur Service is secondary ✗
当使用业余服务为次要服务的乐队时
C. When a station is transmitting spread spectrum emissions ✗
当电台发射扩频发射时
D. All these choices are correct ✓
所有这些选择都是正确的

G1E05. What are the restrictions on messages sent to a third party in a country with which there is a Third-Party Agreement?
在与第三方签订协议的国家，对发送给第三方的信息有哪些限制?

A. They must relate to emergencies or disaster relief ✗
它们必须与紧急情况或救灾有关
B. They must be for other licensed amateurs ✗
它们必须是为其他有执照的业余爱好者准备的
C. They must relate to amateur radio, or remarks of a personal character, or messages relating to emergencies or disaster relief ✓
它们必须与业余无线电、个人性质的言论或与紧急情况或救灾有关的信息有关
D. The message must be limited to no longer than 1 minute in duration and the name of the third party must be recorded in the station log ✗
消息的持续时间必须限制在1分钟以内，并且第三方的名称必须记录在电台日志中

G1E06. The frequency allocations of which ITU region apply to radio amateurs operating in North and South America?
国际电联哪个地区的频率分配适用于在北美和南美运营的业余无线电爱好者?

A. Region 4 ✗
区域4
B. Region 3 ✗
区域3
C. Region 2 ✓
区域2
D. Region 1 ✗
区域1

G1E07. In what part of the 2.4 GHz band may an amateur station communicate with non-licensed Wi-Fi stations?
业余电台可以在2.4 GHz频带的哪个部分与未经许可的Wi-Fi电台通信?

A. Anywhere in the band ✗
乐队中的任何位置
B. Channels 1 through 4 ✗
通道1至4
C. Channels 42 through 45 ✗
通道42至45
D. No part ✓
没有零件

G1E08. What is the maximum PEP output allowed for spread spectrum transmissions?
扩频传输允许的最大PEP输出是多少?

A. 100 milliwatts ✗
100毫瓦
B. 10 watts ✓
10瓦
C. 100 watts ✗
100瓦
D. 1500 watts ✗
1500瓦

G1E09. Under what circumstances are messages that are sent via digital modes exempt from Part 97 third-party rules that apply to other modes of communication?
在什么情况下，通过数字模式发送的消息不受适用于其他通信模式的第97部分第三方规则的约束?

A. Under no circumstances ✓
在任何情况下
B. When messages are encrypted ✗
消息加密时
C. When messages are not encrypted ✗
消息未加密时
D. When under automatic control ✗
自动控制时

G1E10. Why should an amateur operator normally avoid transmitting on 14.100, 18.110, 21.150, 24.930 and 28.200 MHz?
为什么业余运营商通常应该避免在14.100、18.110、21.150、24.930和28.200 MHz上进行传输?

A. A system of propagation beacon stations operates on those frequencies ✓
传播信标站系统在这些频率上运行
B. A system of automatic digital stations operates on those frequencies ✗
自动数字电台系统在这些频率上运行
C. These frequencies are set aside for emergency operations ✗
这些频率用于紧急操作
D. These frequencies are set aside for bulletins from the FCC ✗
这些频率专门用于FCC的公告

G1E11. On what bands may automatically controlled stations transmitting RTTY or data emissions communicate with other automatically controlled digital stations?
传输RTTY或数据发射的自动控制站可以在哪些频段上与其他自动控制的数字站通信?

A. On any band segment where digital operation is permitted ✗
在允许数字操作的任何频带段上
B. Anywhere in the non-phone segments of the 10-meter or shorter wavelength bands ✗
10米或更短波段的非电话段中的任何位置
C. Only in the non-phone Extra Class segments of the bands ✗
仅在乐队的非电话特级段
D. Anywhere in the 6-meter or shorter wavelength bands, and in limited segments of some of the HF bands ✓
在6米或更短波段的任何地方，以及在某些HF波段的有限段中

G1E12. When may third-party messages be transmitted via remote control?
何时可以通过遥控器传输第三方消息?

A. Under any circumstances in which third party messages are permitted by FCC rules ✓
在FCC规则允许第三方消息的任何情况下
B. Under no circumstances except for emergencies ✗
除紧急情况外，任何情况下
C. Only when the message is intended for licensed radio amateurs ✗
只有当信息是为有执照的业余无线电爱好者准备的
D. Only when the message is intended for third parties in areas where licensing is controlled by the FCC ✗
仅当该消息针对由FCC控制许可的地区的第三方时

G2 OPERATING PROCEDURES
操作程序

G2A Phone operating procedures: USB/LSB conventions, breaking into a contact, transmitter setup for voice operation; answering DX stations
手机操作程序：USB/LSB约定，断开触点，设置传输器进行语音操作；应答DX电台

G2A01. Which mode is most commonly used for voice communications on frequencies of 14 MHz or higher?
哪种模式最常用于14MHz或更高频率的语音通信?

A. Upper sideband ✓
上边带
B. Lower sideband ✗
下边带
C. Suppressed sideband ✗
抑制边带
D. Double sideband ✗
双边带

G2A02. Which mode is most commonly used for voice communications on the 160-, 75-, and 40-meter bands?
哪种模式最常用于160米、75米和40米波段的语音通信?

A. Upper sideband ✗
上边带
B. Lower sideband ✓
下边带
C. Suppressed sideband ✗
抑制边带
D. Double sideband ✗
双边带

G2A03. Which mode is most commonly used for SSB voice communications in the VHF and UHF bands?
甚高频和超高频波段的单边带语音通信最常用哪种模式?

A. Upper sideband ✓
上边带
B. Lower sideband ✗
下边带
C. Suppressed sideband ✗
抑制边带
D. Double sideband ✗
双边带

G2A04. Which mode is most commonly used for voice communications on the 17- and 12-meter bands?
哪种模式最常用于17米和12米波段的语音通信?

A. Upper sideband ✓
上边带
B. Lower sideband ✗
下边带
C. Suppressed sideband ✗
抑制边带
D. Double sideband ✗
双边带

G2A05. Which mode of voice communication is most commonly used on the HF amateur bands?
高频业余频段最常用的语音通信方式是哪种?

A. Frequency modulation ✗
频率调制
B. Double sideband ✗
双边带
C. Single sideband ✓
单边带
D. Single phase modulation ✗
单相调制

G2A06. Which of the following is an advantage of using single sideband, as compared to other analog voice modes on the HF amateur bands?
与HF业余频段上的其他模拟语音模式相比，以下哪项是使用单边带的优势?

A. Very high-fidelity voice modulation ✗
高保真度语音调制
B. Less subject to interference from atmospheric static crashes ✗
较少受到大气静态碰撞的干扰
C. Ease of tuning on receive and immunity to impulse noise ✗
易于调谐接收和抗脉冲噪声
D. Less bandwidth used and greater power efficiency ✓
使用的带宽更少，功率效率更高

G2A07. Which of the following statements is true of single sideband (SSB)?
关于单边带（SSB），以下哪项陈述是正确的?

A. Only one sideband and the carrier are transmitted; the other sideband is suppressed ✗
仅传输一个边带和载波；另一个边带被抑制
B. Only one sideband is transmitted; the other sideband and carrier are suppressed ✓
仅传输一个边带；其他边带和载波被抑制
C. SSB is the only voice mode authorized on the 20-, 15-, and 10-meter amateur bands ✗
SSB是唯一在20米、15米和10米业余乐队上授权的语音模式
D. SSB is the only voice mode authorized on the 160-, 75-, and 40-meter amateur bands ✗
SSB是160米、75米和40米业余乐队唯一授权的语音模式

G2A08. What is the recommended way to break into a phone contact?
建议使用什么方法来断开电话联系?

A. Say “QRZ” several times, followed by your call sign ✗
说几次“QRZ”，然后是呼号
B. Say your call sign once ✓
说出你的呼号一次
C. Say “Breaker Breaker” ✗
说“断路器断路器”
D. Say “CQ” followed by the call sign of either station ✗
说“CQ”，然后是任一电台的呼号

G2A09. Why do most amateur stations use lower sideband on the 160-, 75-, and 40-meter bands?
为什么大多数业余电台在160米、75米和40米波段使用较低的边带?

A. Lower sideband is more efficient than upper sideband at these frequencies ✗
在这些频率下，下边带比上边带更有效率
B. Lower sideband is the only sideband legal on these frequency bands ✗
下边带是这些频带上唯一合法的边带
C. Because it is fully compatible with an AM detector ✗
因为它与AM检测器完全兼容
D. It is commonly accepted amateur practice ✓
这是公认的业余练习

G2A10. Which of the following statements is true of VOX operation versus PTT operation?
关于VOX操作与PTT操作，以下哪项陈述是正确的?

A. The received signal is more natural sounding ✗
接收到的信号听起来更自然
B. It allows “hands free” operation ✓
它允许“免提”操作
C. It occupies less bandwidth ✗
它占用的带宽较少
D. It provides more power output ✗
它提供更多的功率输出

G2A11. Generally, who should respond to a station in the contiguous 48 states calling “CQ DX”?
一般来说，谁应该对连续48个州中的一个称为“CQ DX”的电台做出回应?

A. Any caller is welcome to respond ✗
欢迎任何来电者回复
B. Only stations in Germany ✗
仅限德国境内的电台
C. Any stations outside the lower 48 states ✓
48个州以外的任何电台
D. Only contest stations ✗
仅限竞赛站

G2A12. What control is typically adjusted for proper ALC setting on a single sideband transceiver?
对于单边带收发器上的适当ALC设置，通常调整什么控制?

A. RF clipping level ✗
射频削波电平
B. Transmit audio or microphone gain ✓
传输音频或麦克风增益
C. Antenna inductance or capacitance ✗
天线电感或电容
D. Attenuator level ✗
衰减器电平

G2B Operating effectively; band plans; drills and emergencies; RACES operation
有效运作；乐队计划；演习和紧急情况；RACES操作

G2B01. Which of the following is true concerning access to frequencies?
关于频率访问，以下哪一项是正确的?

A. Nets have priority ✗
篮网有优先权
B. QSOs in progress have priority ✗
进行中的QSO具有优先权
C. Except during emergencies, no amateur station has priority access to any frequency ✓
除非在紧急情况下，任何业余电台都不能优先访问任何频率
D. Contest operations should yield to non-contest use of frequencies ✗
竞赛操作应向非竞赛频率使用让步

G2B02. What is the first thing you should do if you are communicating with another amateur station and hear a station in distress break in?
如果你正在与另一个业余电台通信，听到一个遇险电台闯入，你应该做的第一件事是什么?

A. Inform your local emergency coordinator ✗
通知当地应急协调员
B. Acknowledge the station in distress and determine what assistance may be needed ✓
确认遇险电台并确定可能需要什么援助
C. Immediately decrease power to avoid interfering with the station in distress ✗
立即降低功率以避免干扰遇险电台
D. Immediately cease all transmissions ✗
立即停止所有传输

G2B03. What is good amateur practice if propagation changes during a contact creating interference from other stations using the frequency?
如果在接触期间传播发生变化，从而产生来自使用该频率的其他电台的干扰，那么什么是好的业余实践?

A. Advise the interfering stations that you are on the frequency and that you have priority ✗
通知干扰电台你在频率上并且你有优先权
B. Decrease power and continue to transmit ✗
降低功率并继续传输
C. Attempt to resolve the interference problem with the other stations in a mutually acceptable manner ✓
尝试以双方都能接受的方式解决与其他电台的干扰问题
D. Switch to the opposite sideband ✗
切换到相对边带

G2B04. When selecting a CW transmitting frequency, what minimum separation from other stations should be used to minimize interference to stations on adjacent frequencies?
在选择CW发射频率时，应使用与其他电台的最小间隔，以最大限度地减少对相邻频率电台的干扰?

A. 5 Hz to 50 Hz ✗
5赫兹至50赫兹
B. 150 Hz to 500 Hz ✓
150赫兹至500赫兹
C. 1 kHz to 3 kHz ✗
1 kHz至3 kHz
D. 3 kHz to 6 kHz ✗
3 kHz至6 kHz

G2B05. When selecting an SSB transmitting frequency, what minimum separation should be used to minimize interference to stations on adjacent frequencies?
当选择SSB发射频率时，应该使用什么最小间隔来最大限度地减少对相邻频率上的电台的干扰?

A. 5 Hz to 50 Hz ✗
5赫兹至50赫兹
B. 150 Hz to 500 Hz ✗
150赫兹至500赫兹
C. 2 kHz to 3 kHz ✓
2 kHz至3 kHz
D. Approximately 6 kHz ✗
大约6 kHz

G2B06. How can you avoid harmful interference on an apparently clear frequency before calling CQ on CW or phone?
在CW或电话上呼叫CQ之前，如何避免明显清晰的频率上的有害干扰?

A. Send “QRL?” on CW, followed by your call sign; or, if using phone, ask if the frequency is in use, followed by your call sign ✓
在CW上发送“QRL？”，然后是呼号；或者，如果使用电话，询问频率是否在使用中，然后询问您的呼号
B. Listen for 2 minutes before calling CQ ✗
在呼叫CQ之前听2分钟
C. Send the letter “V” in Morse code several times and listen for a response, or say “test” several times and listen for a response ✗
把莫尔斯电码中的字母“V”发几次，听对方回答，或者说几次“测试”，听对方回应
D. Send “QSY” on CW or if using phone, announce “the frequency is in use,” then give your call sign and listen for a response ✗
在CW上发送“QSY”，或者如果使用手机，则宣布“频率正在使用中”，然后给出呼号并收听响应

G2B07. Which of the following complies with commonly accepted amateur practice when choosing a frequency on which to initiate a call?
在选择发起呼叫的频率时，以下哪一项符合公认的业余练习?

A. Listen on the frequency for at least two minutes to be sure it is clear ✗
听至少两分钟的频率，以确保它是清楚的
B. Identify your station by transmitting your call sign at least 3 times ✗
通过至少发送3次呼号来识别您的电台
C. Follow the voluntary band plan ✓
遵循自愿乐队计划
D. All these choices are correct ✗
所有这些选择都是正确的

G2B08. What is the voluntary band plan restriction for US stations transmitting within the 48 contiguous states in the 50.1 MHz to 50.125 MHz band segment?
在50.1 MHz至50.125 MHz频带段内，在48个相邻州内进行传输的美国电台的自愿频带计划限制是什么?

A. Only contacts with stations not within the 48 contiguous states ✓
仅与48个相邻州以外的电台联系
B. Only contacts with other stations within the 48 contiguous states ✗
仅与48个相邻州内的其他电台联系
C. Only digital contacts ✗
仅限数字联系人
D. Only SSTV contacts ✗
仅SSTV触点

G2B09. Who may be the control operator of an amateur station transmitting in RACES to assist relief operations during a disaster?
谁可能是业余电台的控制操作员，在RACES中进行传输，以协助灾难期间的救援行动?

A. Only a person holding an FCC-issued amateur operator license ✓
只有持有FCC颁发的业余运营商执照的人
B. Only a RACES net control operator ✗
只有RACES网络控制操作员
C. A person holding an FCC-issued amateur operator license or an appropriate government official ✗
持有FCC颁发的业余运营商执照的人员或适当的政府官员
D. Any control operator when normal communication systems are operational ✗
正常通信系统运行时的任何控制操作员

G2B10. Which of the following is good amateur practice for net management?
以下哪项是业余爱好者进行网络管理的好方法?

A. Always use multiple sets of phonetics during check-in ✗
办理入住手续时始终使用多组语音
B. Have a backup frequency in case of interference or poor conditions ✓
有备用频率，以防干扰或恶劣条件
C. Transmit the full net roster at the beginning of every session ✗
在每次会议开始时传输完整的网络名册
D. All these choices are correct ✗
所有这些选择都是正确的

G2B11. How often may RACES training drills and tests be routinely conducted without special authorization?
在没有特别授权的情况下，RACES训练演习和测试可以多久进行一次?

A. No more than 1 hour per month ✗
每月不超过1小时
B. No more than 2 hours per month ✗
每月不超过2小时
C. No more than 1 hour per week ✓
每周不超过1小时
D. No more than 2 hours per week ✗
每周不超过2小时

G2C CW operating procedures and procedural signals; Q signals; full break-in
CW操作程序和程序信号；Q信号；完全磨合

G2C01. Which of the following describes full break-in CW operation (QSK)?
以下哪项描述了CW操作（QSK）中的完全中断?

A. Breaking stations send the Morse code prosign “BK” ✗
破发站发送莫尔斯电码符号“BK”
B. Automatic keyers, instead of hand keys, are used to send Morse code ✗
用自动键代替手动键发送莫尔斯电码
C. An operator must activate a manual send/receive switch before and after every transmission ✗
操作员必须在每次传输前后启动手动发送/接收开关
D. Transmitting stations can receive between code characters and elements ✓
发射站可以在代码字符和元素之间进行接收

G2C02. What should you do if a CW station sends “QRS?”
如果CW电台发送“QRS”，你该怎么办

A. Send slower ✓
发送速度较慢
B. Change frequency ✗
更改频率
C. Increase your power ✗
增加你的力量
D. Repeat everything twice ✗
将所有内容重复两次

G2C03. What does it mean when a CW operator sends “KN” at the end of a transmission?
CW操作员在传输结束时发送“KN”是什么意思?

A. No US stations should call ✗
美国电台不应呼叫
B. Operating full break-in ✗
操作完全磨合
C. Listening only for a specific station or stations ✓
仅收听特定电台
D. Closing station now ✗
正在关闭工作站

G2C04. What does the Q signal “QRL?” mean?
Q信号“QRL？”是什么意思?

A. “Will you keep the frequency clear?” ✗
“你能保持频率畅通吗？”
B. “Are you operating full break-in?” or “Can you operate full break-in?” ✗
“你在操作完全磨合吗？”或“你能操作完全磨合？”
C. “Are you listening only for a specific station?” ✗
“你只听特定的电台吗？”
D. “Are you busy?” or “Is this frequency in use?” ✓
“你忙吗？”或“这个频率在用吗？”

G2C05. What is the best speed to use when answering a CQ in Morse code?
用莫尔斯电码回答CQ时使用的最佳速度是多少?

A. The fastest speed at which you are comfortable copying, but no slower than the CQ ✗
您可以轻松复制的最快速度，但不低于CQ
B. The fastest speed at which you are comfortable copying, but no faster than the CQ ✓
您可以轻松复制的最快速度，但不比CQ快
C. At the standard calling speed of 10 wpm ✗
标准呼叫速度为每分钟10次
D. At the standard calling speed of 5 wpm ✗
标准呼叫速度为5 wpm

G2C06. What does the term “zero beat” mean in CW operation?
术语“零拍频”在CW操作中是什么意思?

A. Matching the speed of the transmitting station ✗
匹配发射站的速度
B. Operating split to avoid interference on frequency ✗
操作拆分以避免对频率的干扰
C. Sending without error ✗
发送无错误
D. Matching the transmit frequency to the frequency of a received signal ✓
将发射频率与接收信号的频率匹配

G2C07. When sending CW, what does a “C” mean when added to the RST report?
发送CW时，在RST报告中添加“C”是什么意思?

A. Chirpy or unstable signal ✓
Chirpy或不稳定信号
B. Report was read from an S meter rather than estimated ✗
报告是从S表读取的，而不是估计的
C. 100 percent copy ✗
100%拷贝
D. Key clicks ✗
按键点击

G2C08. What prosign is sent to indicate the end of a formal message when using CW?
当使用CW时，发送什么符号来表示正式消息的结束?

A. SK ✗
B. BK ✗
C. AR ✓
D. KN ✗

G2C09. What does the Q signal “QSL” mean?
Q信号“QSL”是什么意思?

A. Send slower ✗
发送速度较慢
B. We have already confirmed the contact ✗
我们已经确认了联系方式
C. I have received and understood ✓
我已收到并理解
D. We have worked before ✗
我们以前工作过

G2C10. What does the Q signal “QRN” mean?
Q信号“QRN”是什么意思?

A. Send more slowly ✗
发送速度较慢
B. Stop sending ✗
停止发送
C. Zero beat my signal ✗
零拍我的信号
D. I am troubled by static ✓
我被静电困扰

G2C11. What does the Q signal “QRV” mean?
Q信号“QRV”是什么意思?

A. You are sending too fast ✗
你发送得太快了
B. There is interference on the frequency ✗
频率上有干扰
C. I am quitting for the day ✗
我今天辞职
D. I am ready to receive ✓
我准备接收

G2D Volunteer Monitor Program; HF operations
志愿者监测计划；HF操作

G2D01. What is the Volunteer Monitor Program?
什么是志愿者监督计划?

A. Amateur volunteers who are formally enlisted to monitor the airwaves for rules violations ✓
被正式招募来监测电波是否违反规则的业余志愿者
B. Amateur volunteers who conduct amateur licensing examinations ✗
进行业余执照考试的业余志愿者
C. Amateur volunteers who conduct frequency coordination for amateur VHF repeaters ✗
为业余甚高频中继器进行频率协调的业余志愿者
D. Amateur volunteers who use their station equipment to help civil defense organizations in times of emergency ✗
在紧急情况下使用台站设备帮助民防组织的业余志愿者

G2D02. Which of the following are objectives of the Volunteer Monitor Program?
以下哪项是志愿者监督计划的目标?

A. To conduct efficient and orderly amateur licensing examinations ✗
进行高效有序的业余执照考试
B. To provide emergency and public safety communications ✗
提供应急和公共安全通信
C. To coordinate repeaters for efficient and orderly spectrum usage ✗
协调中继器以实现高效有序的频谱使用
D. To encourage amateur radio operators to self-regulate and comply with the rules ✓
鼓励业余无线电操作员自律及遵守规则

G2D03. What procedure may be used by Volunteer Monitors to localize a station whose continuous carrier is holding a repeater on in their area?
志愿者监督员可以使用什么程序来定位其连续载波在其区域内保持中继器的站点?

A. Compare vertical and horizontal signal strengths on the input frequency ✗
比较输入频率上的垂直和水平信号强度
B. Compare beam headings on the repeater input from their home locations with that of other Volunteer Monitors ✓
将中继器输入端的波束指向与其他志愿者监视器的波束指向进行比较
C. Compare signal strengths between the input and output of the repeater ✗
比较中继器输入和输出之间的信号强度
D. All these choices are correct ✗
所有这些选择都是正确的

G2D04. Which of the following describes an azimuthal projection map?
以下哪项描述了方位投影图?

A. A map that shows accurate land masses ✗
显示准确地块的地图
B. A map that shows true bearings and distances from a specific location ✓
显示特定位置的真实方位和距离的地图
C. A map that shows the angle at which an amateur satellite crosses the equator ✗
显示业余卫星穿过赤道的角度的地图
D. A map that shows the number of degrees longitude that an amateur satellite appears to move westward at the equator with each orbit ✗
一张地图，显示业余卫星在每个轨道上在赤道向西移动的经度

G2D05. Which of the following indicates that you are looking for an HF contact with any station?
以下哪一项表明您正在寻找任何电台的HF联系人?

A. Sign your call sign once, followed by the words “listening for a call” -- if no answer, change frequency and repeat ✗
在呼号上签一次，然后写上“接听电话”——如果没有人接听，请改变频率并重复
B. Say “QTC” followed by “this is” and your call sign -- if no answer, change frequency and repeat ✗
说“QTC”，然后说“this is”和你的呼号——如果没有答案，改变频率并重复
C. Repeat “CQ” a few times, followed by “this is,” then your call sign a few times, then pause to listen, repeat as necessary ✓
重复几次“CQ”，然后是“this is”，然后你的呼号几次，然后停下来听，必要时重复
D. Transmit an unmodulated carried for approximately 10 seconds, followed by “this is” and your call sign, and pause to listen -- repeat as necessary ✗
发送一个未调制的进位大约10秒，然后是“这就是”和你的呼号，然后暂停收听——必要时重复

G2D06. How is a directional antenna pointed when making a “long-path” contact with another station?
当与另一个电台进行“长距离”接触时，定向天线是如何指向的?

A. Toward the rising sun ✗
向着冉冉升起的太阳
B. Along the gray line ✗
沿着灰线
C. 180 degrees from the station’s short-path heading ✓
距离台站的短路径方向180度
D. Toward the north ✗
向北

G2D07. Which of the following are examples of the NATO Phonetic Alphabet?
以下哪些是北约拼音的例子?

A. Able, Baker, Charlie, Dog ✗
Able、Baker、Charlie、Dog
B. Adam, Boy, Charles, David ✗
亚当，男孩，查尔斯，大卫
C. America, Boston, Canada, Denmark ✗
美国、波士顿、加拿大、丹麦
D. Alpha, Bravo, Charlie, Delta ✓
阿尔法、布拉沃、查理、德尔塔

G2D08. Why do many amateurs keep a station log?
为什么许多业余爱好者都保存电台日志?

A. The FCC requires a log of all international contacts ✗
FCC要求记录所有国际联系人
B. The FCC requires a log of all international third-party traffic ✗
FCC要求记录所有国际第三方流量
C. The log provides evidence of operation needed to renew a license without retest ✗
该日志提供了无需重新测试即可续订许可证所需操作的证据
D. To help with a reply if the FCC requests information about your station ✓
如果FCC要求提供有关您电台的信息，请提供回复

G2D09. Which of the following is required when participating in a contest on HF frequencies?
参加高频频率比赛时需要下列哪项?

A. Submit a log to the contest sponsor ✗
向竞赛赞助商提交日志
B. Send a QSL card to the stations worked, or QSL via Logbook of The World ✗
向工作的电台发送QSL卡，或通过《世界日志》发送QSL
C. Identify your station according to normal FCC regulations ✓
根据FCC的正常规定识别您的电台
D. All these choices are correct ✗
所有这些选择都是正确的

G2D10. What is QRP operation?
什么是QRP操作?

A. Remote piloted model control ✗
遥控模型控制
B. Low-power transmit operation ✓
低功率发射操作
C. Transmission using Quick Response Protocol ✗
使用快速响应协议进行传输
D. Traffic relay procedure net operation ✗
交通中继程序网络操作

G2D11. Why are signal reports typically exchanged at the beginning of an HF contact?
为什么信号报告通常在HF接触开始时交换?

A. To allow each station to operate according to conditions ✓
允许每个站点根据条件运行
B. To be sure the contact will count for award programs ✗
为了确保该联系人将计入奖励计划
C. To follow standard radiogram structure ✗
遵循标准的放射图结构
D. To allow each station to calibrate their frequency display ✗
允许每个电台校准其频率显示

G2E Digital mode operating procedures
数字模式操作程序

G2E01. Which mode is normally used when sending RTTY signals via AFSK with an SSB transmitter?
当使用SSB发射机通过AFSK发送RTTY信号时，通常使用哪种模式?

A. USB ✗
B. DSB ✗
C. CW ✗
D. LSB ✓

G2E02. What is VARA?
什么是VARA?

A. A low signal-to-noise digital mode used for EME (moonbounce) ✗
用于EME（月球反弹）的低信噪比数字模式
B. A digital protocol used with Winlink ✓
与Winlink一起使用的数字协议
C. A radio direction finding system used on VHF and UHF ✗
甚高频和超高频无线电测向系统
D. DX spotting system using a network of software defined radios ✗
使用软件定义无线电网络的DX定位系统

G2E03. What symptoms may result from other signals interfering with a PACTOR or VARA transmission?
干扰PACTOR或VARA传输的其他信号可能会导致什么症状?

A. Frequent retries or timeouts ✗
频繁重试或超时
B. Long pauses in message transmission ✗
信息传输中的长时间暂停
C. Failure to establish a connection between stations ✗
未能在站点之间建立连接
D. All these choices are correct ✓
所有这些选择都是正确的

G2E04. Which of the following is good practice when choosing a transmitting frequency to answer a station calling CQ using FT8?
当选择发射频率来回答使用FT8呼叫CQ的电台时，以下哪一项是好的做法?

A. Always call on the station’s frequency ✗
始终呼叫电台的频率
B. Call on any frequency in the waterfall except the station’s frequency ✗
调用瀑布中除电台频率外的任何频率
C. Find a clear frequency during the same time slot as the calling station ✗
在与呼叫站相同的时隙内查找清晰的频率
D. Find a clear frequency during the alternate time slot to the calling station ✓
在呼叫站的备用时隙中查找一个清晰的频率

G2E05. What is the standard sideband for JT65, JT9, FT4, or FT8 digital signal when using AFSK?
使用AFSK时，JT65、JT9、FT4或FT8数字信号的标准边带是什么?

A. LSB ✗
B. USB ✓
C. DSB ✗
D. SSB ✗

G2E06. What is the most common frequency shift for RTTY emissions in the amateur HF bands?
业余高频频带中RTTY发射最常见的频移是什么?

A. 85 Hz ✗
85赫兹
B. 170 Hz ✓
170赫兹
C. 425 Hz ✗
425赫兹
D. 850 Hz ✗
850赫兹

G2E07. Which of the following is required when using FT8?
使用FT8时需要以下哪项?

A. A special hardware modem ✗
一个特殊的硬件调制解调器
B. Computer time accurate to within approximately 1 second ✓
计算机时间精确到大约1秒以内
C. Receiver attenuator set to -12 dB ✗
接收器衰减器设置为-12 dB
D. A vertically polarized antenna ✗
垂直极化天线

G2E08. In what segment of the 20-meter band are most digital mode operations commonly found?
在20米波段的哪个部分，最常见的数字模式操作?

A. At the bottom of the slow-scan TV segment, near 14.230 MHz ✗
在慢扫描电视段的底部，接近14.230 MHz
B. At the top of the SSB phone segment, near 14.325 MHz ✗
在SSB电话段的顶部，接近14.325 MHz
C. In the middle of the CW segment, near 14.100 MHz ✗
在CW段的中间，接近14.100 MHz
D. Between 14.070 MHz and 14.100 MHz ✓
介于14.070 MHz和14.100 MHz之间

G2E09. How do you join a contact between two stations using the PACTOR protocol?
如何使用PACTOR协议加入两个电台之间的联系?

A. Send broadcast packets containing your call sign while in MONITOR mode ✗
在MONITOR模式下发送包含呼号的广播数据包
B. Transmit a steady carrier until the PACTOR protocol times out and disconnects ✗
传输稳定的载波，直到PACTOR协议超时并断开连接
C. Joining an existing contact is not possible, PACTOR connections are limited to two stations ✓
无法加入现有联系人，PACTOR连接仅限于两个站点
D. Send a NAK code ✗
发送NAK代码

G2E10. Which of the following is a way to establish contact with a digital messaging system gateway station?
以下哪项是与数字消息系统网关站建立联系的方法?

A. Send an email to the system control operator ✗
向系统控制操作员发送电子邮件
B. Send QRL in Morse code ✗
用莫尔斯电码发送QRL
C. Respond when the station broadcasts its SSID ✗
当电台广播其SSID时响应
D. Transmit a connect message on the station's published frequency ✓
在电台发布的频率上发送连接消息

G2E11. What is the primary purpose of an Amateur Radio Emergency Data Network (AREDN) mesh network?
业余无线电应急数据网络（AREDN）网状网络的主要目的是什么?

A. To provide FM repeater coverage in remote areas ✗
在偏远地区提供调频中继器覆盖
B. To provide real time propagation data by monitoring amateur radio transmissions worldwide ✗
通过监测世界各地的业余无线电传输来提供实时传播数据
C. To provide high-speed data services during an emergency or community event ✓
在紧急情况或社区事件期间提供高速数据服务
D. To provide DX spotting reports to aid contesters and DXers ✗
提供DX发现报告以帮助参赛者和DXer

G2E12. Which of the following describes Winlink?
以下哪项描述Winlink?

A. An amateur radio wireless network to send and receive email on the internet ✗
一个业余无线电无线网络，用于在互联网上发送和接收电子邮件
B. A form of Packet Radio ✗
分组无线电的一种形式
C. A wireless network capable of both VHF and HF band operation ✗
一个能够同时进行VHF和HF波段操作的无线网络
D. All of the above ✓
以上所有内容

G2E13. What is another name for a Winlink Remote Message Server?
Winlink远程消息服务器的另一个名称是什么?

A. Terminal Node Controller ✗
终端节点控制器
B. Gateway ✓
网关
C. RJ-45 ✗
D. Printer/Server ✗
打印机/服务器

G2E14. What could be wrong if you cannot decode an RTTY or other FSK signal even though it is apparently tuned in properly?
如果你不能解码RTTY或其他FSK信号，即使它显然调谐正确，会有什么问题?

A. The mark and space frequencies may be reversed ✗
标记和空格频率可以颠倒
B. You may have selected the wrong baud rate ✗
您可能选择了错误的波特率
C. You may be listening on the wrong sideband ✗
你可能听错了边带
D. All these choices are correct ✓
所有这些选择都是正确的

G2E15. Which of the following is a common location for FT8?
以下哪一项是FT8的常见位置?

A. Anywhere in the voice portion of the band ✗
乐队声音部分的任何位置
B. Anywhere in the CW portion of the band ✗
波段CW部分的任何位置
C. Approximately 14.074 MHz to 14.077 MHz ✓
大约14.074 MHz到14.077 MHz
D. Approximately 14.110 MHz to 14.113 MHz ✗
大约14.110 MHz至14.113 MHz

G3 RADIO WAVE PROPAGATION
无线电波传播

G3A Sunspots and solar radiation; geomagnetic field and stability indices
太阳黑子和太阳辐射；地磁场及其稳定性指标

G3A01. How does a higher sunspot number affect HF propagation?
较高的太阳黑子数如何影响HF的传播?

A. Higher sunspot numbers generally indicate a greater probability of good propagation at higher frequencies ✓
较高的太阳黑子数通常表明在较高频率下良好传播的可能性较大
B. Lower sunspot numbers generally indicate greater probability of sporadic E propagation ✗
较低的太阳黑子数通常表明E传播的概率较大
C. A zero sunspot number indicates that radio propagation is not possible on any band ✗
零太阳黑子数表明无线电在任何波段都不可能传播
D. A zero sunspot number indicates undisturbed conditions ✗
零太阳黑子数表示未受干扰的情况

G3A02. What effect does a sudden ionospheric disturbance have on the daytime ionospheric propagation?
电离层突然扰动对白天电离层传播有什么影响?

A. It enhances propagation on all HF frequencies ✗
它增强了在所有HF频率上的传播
B. It disrupts signals on lower frequencies more than those on higher frequencies ✓
它对低频信号的干扰比对高频信号的干扰更大
C. It disrupts communications via satellite more than direct communications ✗
它对卫星通信的干扰比直接通信更大
D. None, because only areas on the night side of the Earth are affected ✗
没有，因为只有地球夜晚的区域受到影响

G3A03. Approximately how long does it take the increased ultraviolet and X-ray radiation from a solar flare to affect radio propagation on Earth?
太阳耀斑增加的紫外线和X射线辐射大约需要多长时间才能影响地球上的无线电传播?

A. 28 days ✗
28天
B. 1 to 2 hours ✗
1至2小时
C. 8 minutes ✓
8分钟
D. 20 to 40 hours ✗
20至40小时

G3A04. Which of the following are the least reliable bands for long-distance communications during periods of low solar activity?
在太阳活动较低的时期，以下哪一个波段的远距离通信最不可靠?

A. 80 meters and 160 meters ✗
80米和160米
B. 60 meters and 40 meters ✗
60米和40米
C. 30 meters and 20 meters ✗
30米和20米
D. 15 meters, 12 meters, and 10 meters ✓
15米、12米和10米

G3A05. What is the solar flux index?
太阳通量指数是多少?

A. A measure of the highest frequency that is useful for ionospheric propagation between two points on Earth ✗
对地球上两点之间电离层传播有用的最高频率的测量
B. A count of sunspots that is adjusted for solar emissions ✗
根据太阳辐射量调整的太阳黑子数
C. Another name for the American sunspot number ✗
美国太阳黑子数的另一个名称
D. A measure of solar radiation with a wavelength of 10.7 centimeters ✓
波长为10.7厘米的太阳辐射量

G3A06. What is a geomagnetic storm?
什么是地磁风暴?

A. A sudden drop in the solar flux index ✗
太阳通量指数的突然下降
B. A thunderstorm that affects radio propagation ✗
影响无线电传播的雷暴
C. Ripples in the geomagnetic force ✗
地磁力的波动
D. A temporary disturbance in Earth's geomagnetic field ✓
地球地磁场的暂时扰动

G3A07. At what point in the solar cycle does the 20-meter band usually support worldwide propagation during daylight hours?
在太阳周期的什么时候，20米波段通常在白天支持全球传播?

A. At the summer solstice ✗
在夏至
B. Only at the maximum point ✗
仅在最大点
C. Only at the minimum point ✗
仅在最低点
D. At any point ✓
在任何时候

G3A08. How can a geomagnetic storm affect HF propagation?
地磁风暴如何影响HF的传播?

A. Improve high-latitude HF propagation ✗
改善高纬度HF传播
B. Degrade ground wave propagation ✗
降低地波传播
C. Improve ground wave propagation ✗
改善地波传播
D. Degrade high-latitude HF propagation ✓
降低高纬度HF传播

G3A09. How can high geomagnetic activity benefit radio communications?
高地磁活动如何有利于无线电通信?

A. Creates auroras that can reflect VHF signals ✓
创建能够反射VHF信号的极光
B. Increases signal strength for HF signals passing through the polar regions ✗
增加通过极区的高频信号的信号强度
C. Improve HF long path propagation ✗
改善HF长路径传播
D. Reduce long delayed echoes ✗
减少长延迟回波

G3A10. What causes HF propagation conditions to vary periodically in a 26- to 28-day cycle?
是什么导致HF传播条件在26到28天的周期内周期性变化?

A. Long term oscillations in the upper atmosphere ✗
高层大气的长期振荡
B. Cyclic variation in Earth's radiation belts ✗
地球辐射带的周期变化
C. Rotation of the Sun's surface layers around its axis ✓
太阳表面层绕其轴的旋转
D. The position of the Moon in its orbit ✗
月球在其轨道上的位置

G3A11. How long does it take a coronal mass ejection to affect radio propagation on Earth?
日冕物质抛射影响地球上的无线电传播需要多长时间?

A. 28 days ✗
28天
B. 14 days ✗
14天
C. 4 to 8 minutes ✗
4到8分钟
D. 15 hours to several days ✓
15小时到几天

G3A12. What does the K-index measure?
K指数衡量的是什么?

A. The relative position of sunspots on the surface of the Sun ✗
太阳黑子在太阳表面的相对位置
B. The short-term stability of Earth's geomagnetic field ✓
地球地磁场的短期稳定性
C. The short-term stability of the Sun's magnetic field ✗
太阳磁场的短期稳定性
D. The solar radio flux at Boulder, Colorado ✗
科罗拉多州博尔德市的太阳射电通量

G3A13. What does the A-index measure?
A指数衡量的是什么?

A. The relative position of sunspots on the surface of the Sun ✗
太阳黑子在太阳表面的相对位置
B. The amount of polarization of the Sun's electric field ✗
太阳电场的极化量
C. The long-term stability of Earth's geomagnetic field ✓
地球地磁场的长期稳定性
D. The solar radio flux at Boulder, Colorado ✗
科罗拉多州博尔德市的太阳射电通量

G3A14. How is long distance radio communication usually affected by the charged particles that reach Earth from solar coronal holes?
从太阳日冕洞到达地球的带电粒子通常会对远距离无线电通信产生什么影响?

A. HF communication is improved ✗
HF通信得到改善
B. HF communication is disturbed ✓
HF通信受到干扰
C. VHF/UHF ducting is improved ✗
VHF/UHF管道得到改进
D. VHF/UHF ducting is disturbed ✗
VHF/UHF管道受到干扰

G3B Maximum Usable Frequency; Lowest Usable Frequency; short path and long path propagation; determining propagation conditions; ionospheric refraction
最大可用频率；最低可用频率；短路径和长路径传播；确定传播条件；电离层折射

G3B01. What is a characteristic of skywave signals arriving at your location by both short-path and long-path propagation?
天波信号通过短路径和长路径传播到达您所在位置的特征是什么?

A. Periodic fading approximately every 10 seconds ✗
周期性衰落，大约每10秒
B. Signal strength increased by 3 dB ✗
信号强度增加3 dB
C. The signal might be cancelled causing severe attenuation ✗
信号可能被取消，导致严重衰减
D. A slightly delayed echo might be heard ✓
可能会听到轻微延迟的回声

G3B02. What factors affect the MUF?
哪些因素会影响MUF?

A. Path distance and location ✗
路径距离和位置
B. Time of day and season ✗
一天中的时间和季节
C. Solar radiation and ionospheric disturbances ✗
太阳辐射和电离层扰动
D. All these choices are correct ✓
所有这些选择都是正确的

G3B03. Which frequency will have the least attenuation for long-distance skip propagation?
对于长距离跳跃传播，哪个频率的衰减最小?

A. Just below the MUF ✓
MUF下方
B. Just above the LUF ✗
略高于LUF
C. Just below the critical frequency ✗
刚好低于临界频率
D. Just above the critical frequency ✗
刚好高于临界频率

G3B04. Which of the following is a way to determine current propagation on a desired band from your station?
以下哪种方法可以确定您电台所需波段上的电流传播?

A. Use a network of automated receiving stations on the internet to see where your transmissions are being received ✓
使用互联网上的自动接收站网络查看您的传输接收位置
B. Check the A-index ✗
检查A-索引
C. Send a series of dots and listen for echoes ✗
发送一系列点并倾听回声
D. All these choices are correct ✗
所有这些选择都是正确的

G3B05. How does the ionosphere affect radio waves with frequencies below the MUF and above the LUF?
电离层如何影响频率低于MUF和高于LUF的无线电波?

A. They are refracted back to Earth ✓
它们被折射回地球
B. They pass through the ionosphere ✗
它们穿过电离层
C. They are amplified by interaction with the ionosphere ✗
它们通过与电离层的相互作用而被放大
D. They are refracted and trapped in the ionosphere to circle Earth ✗
它们被折射并困在电离层中绕地球一周

G3B06. What usually happens to radio waves with frequencies below the LUF?
频率低于LUF的无线电波通常会发生什么?

A. They are refracted back to Earth ✗
它们被折射回地球
B. They pass through the ionosphere ✗
它们穿过电离层
C. They are attenuated before reaching the destination ✓
它们在到达目的地之前被衰减
D. They are refracted and trapped in the ionosphere to circle Earth ✗
它们被折射并困在电离层中绕地球一周

G3B07. What does LUF stand for?
LUF代表什么?

A. The Lowest Usable Frequency for communications between two specific points ✓
两个特定点之间通信的最低可用频率
B. Lowest Usable Frequency for communications to any point outside a 100-mile radius ✗
与半径100英里以外的任何点通信的最低可用频率
C. The Lowest Usable Frequency during a 24-hour period ✗
24小时内的最低可用频率
D. Lowest Usable Frequency during the past 60 minutes ✗
过去60分钟内的最低可用频率

G3B08. What does MUF stand for?
MUF代表什么?

A. The Minimum Usable Frequency for communications between two points ✗
两点间通信的最小可用频率
B. The Maximum Usable Frequency for communications between two points ✓
两点间通信的最大可用频率
C. The Minimum Usable Frequency during a 24-hour period ✗
24小时内的最小可用频率
D. The Maximum Usable Frequency during a 24-hour period ✗
24小时内的最大可用频率

G3B09. What is the approximate maximum distance along the Earth’s surface normally covered in one hop using the F2 region?
通常使用F2区域一跳所覆盖的地球表面的最大距离大约是多少?

A. 180 miles ✗
180英里
B. 1,200 miles ✗
1200英里
C. 2,500 miles ✓
2500英里
D. 12,000 miles ✗
12000英里

G3B10. What is the approximate maximum distance along the Earth’s surface normally covered in one hop using the E region?
使用E区域，通常一跳所覆盖的地球表面的大致最大距离是多少?

A. 180 miles ✗
180英里
B. 1,200 miles ✓
1200英里
C. 2,500 miles ✗
2500英里
D. 12,000 miles ✗
12000英里

G3B11. What happens to HF propagation when the LUF exceeds the MUF?
当LUF超过MUF时，HF传播会发生什么?

A. Propagation via ordinary skywave communications is not possible over that path ✓
通过普通天波通信在该路径上传播是不可能的
B. HF communications over the path are enhanced ✗
增强了路径上的HF通信
C. Double-hop propagation along the path is more common ✗
沿路径的双跳传播更为常见
D. Propagation over the path on all HF frequencies is enhanced ✗
增强了所有HF频率上的路径传播

G3B12. Which of the following is typical of the lower HF frequencies during the summer?
以下哪项是夏季较低HF频率的典型情况?

A. Poor propagation at any time of day ✗
在一天中的任何时间传播不良
B. World-wide propagation during daylight hours ✗
白天在全球范围内传播
C. Heavy distortion on signals due to photon absorption ✗
光子吸收导致信号严重失真
D. High levels of atmospheric noise or static ✓
高水平的大气噪声或静电

G3C Ionospheric regions; critical angle and frequency; HF scatter; near vertical incidence skywave (NVIS)
电离层区域；临界角和频率；HF散射；近垂直入射天波

G3C01. Which ionospheric region is closest to the surface of Earth?
哪个电离层区域离地球表面最近?

A. The D region ✓
D区域
B. The E region ✗
E区域
C. The F1 region ✗
F1区域
D. The F2 region ✗
F2区域

G3C02. What is meant by the term “critical frequency” at a given incidence angle?
在给定的入射角下，术语“临界频率”是什么意思?

A. The highest frequency which is refracted back to Earth ✓
折射回地球的最高频率
B. The lowest frequency which is refracted back to Earth ✗
折射回地球的最低频率
C. The frequency at which the signal-to-noise ratio approaches unity ✗
信噪比接近1的频率
D. The frequency at which the signal-to-noise ratio is 6 dB ✗
信噪比为6dB的频率

G3C03. Why is skip propagation via the F2 region longer than that via the other ionospheric regions?
为什么通过F2区域的跳跃传播比通过其他电离层区域的跳跃更长?

A. Because it is the densest ✗
因为它是密度最大的
B. Because of the Doppler effect ✗
由于多普勒效应
C. Because it is the highest ✓
因为它是最高的
D. Because of temperature inversions ✗
由于温度反转

G3C04. What does the term “critical angle” mean, as applied to radio wave propagation?
当应用于无线电波传播时，术语“临界角”是什么意思?

A. The long path azimuth of a distant station ✗
远距离站的长距离方位角
B. The short path azimuth of a distant station ✗
远距离站的短路径方位角
C. The lowest takeoff angle that will return a radio wave to Earth under specific ionospheric conditions ✗
在特定电离层条件下，将无线电波返回地球的最低起飞角
D. The highest takeoff angle that will return a radio wave to Earth under specific ionospheric conditions ✓
在特定电离层条件下，将无线电波返回地球的最高起飞角

G3C05. Why is long-distance communication on the 40-, 60-, 80-, and 160-meter bands more difficult during the day?
为什么白天40米、60米、80米和160米波段的远程通信更困难?

A. The F region absorbs signals at these frequencies during daylight hours ✗
F区在白天吸收这些频率的信号
B. The F region is unstable during daylight hours ✗
F区域在白天不稳定
C. The D region absorbs signals at these frequencies during daylight hours ✓
D区在白天吸收这些频率的信号
D. The E region is unstable during daylight hours ✗
E区域在白天不稳定

G3C06. What is a characteristic of HF scatter?
HF散射的特征是什么?

A. Phone signals have high intelligibility ✗
电话信号具有高清晰度
B. Signals have a fluttering sound ✓
信号有颤动的声音
C. There are very large, sudden swings in signal strength ✗
信号强度有很大的突然波动
D. Scatter propagation occurs only at night ✗
散射传播仅在夜间发生

G3C07. What makes HF scatter signals often sound distorted?
是什么使高频散射信号听起来经常失真?

A. The ionospheric region involved is unstable ✗
所涉及的电离层区域不稳定
B. Ground waves are absorbing much of the signal ✗
地波吸收了大部分信号
C. The E region is not present ✗
E区域不存在
D. Energy is scattered into the skip zone through several different paths ✓
能量通过几个不同的路径分散到跳跃区

G3C08. Why are HF scatter signals in the skip zone usually weak?
为什么跳跃区中的HF散射信号通常很弱?

A. Only a small part of the signal energy is scattered into the skip zone ✓
只有一小部分信号能量被散射到跳跃区
B. Signals are scattered from the magnetosphere, which is not a good reflector ✗
信号是从磁层散射的，磁层不是一个好的反射器
C. Propagation is via ground waves, which absorb most of the signal energy ✗
通过地波传播，地波吸收了大部分信号能量
D. Propagation is via ducts in the F region, which absorb most of the energy ✗
传播是通过F区的管道进行的，这些管道吸收了大部分能量

G3C09. What type of propagation allows signals to be heard in the transmitting station’s skip zone?
什么类型的传播可以让信号在发射站的跳跃区被听到?

A. Faraday rotation ✗
法拉第旋转
B. Scatter ✓
分散
C. Chordal hop ✗
合唱跳跃
D. Short-path ✗
短路径

G3C10. What is near vertical incidence skywave (NVIS) propagation?
什么是近垂直入射天波（NVIS）传播?

A. Propagation near the MUF ✗
MUF附近的传播
B. Short distance MF or HF propagation at high elevation angles ✓
高仰角下的短距离MF或HF传播
C. Long path HF propagation at sunrise and sunset ✗
日出和日落时的长路径HF传播
D. Double hop propagation near the LUF ✗
LUF附近的双跳传播

G3C11. Which ionospheric region is the most absorbent of signals below 10 MHz during daylight hours?
在白天，哪个电离层区域对10MHz以下的信号吸收能力最强?

A. The F2 region ✗
F2区域
B. The F1 region ✗
F1区域
C. The E region ✗
E区域
D. The D region ✓
D区域

G4 AMATEUR RADIO PRACTICES
业余无线电练习

G4A Station configuration and operation
站点配置和操作

G4A01. What is the purpose of the notch filter found on many HF transceivers?
许多HF收发器上的陷波滤波器的用途是什么?

A. To restrict the transmitter voice bandwidth ✗
限制发射机语音带宽
B. To reduce interference from carriers in the receiver passband ✓
减少接收机通带中载波的干扰
C. To eliminate receiver interference from impulse noise sources ✗
消除脉冲噪声源对接收机的干扰
D. To remove interfering splatter generated by signals on adjacent frequencies ✗
去除相邻频率上信号产生的干扰飞溅

G4A02. What is the benefit of using the opposite or “reverse” sideband when receiving CW?
当接收CW时，使用相反或“反向”边带有什么好处?

A. Interference from impulse noise will be eliminated ✗
脉冲噪声干扰将被消除
B. More stations can be accommodated within a given signal passband ✗
在给定的信号通带内可以容纳更多的站
C. It may be possible to reduce or eliminate interference from other signals ✓
可以减少或消除来自其他信号的干扰
D. Accidental out-of-band operation can be prevented ✗
可以防止意外的带外操作

G4A03. How does a noise blanker work?
噪音抑制器是如何工作的?

A. By temporarily increasing received bandwidth ✗
通过临时增加接收带宽
B. By redirecting noise pulses into a filter capacitor ✗
通过将噪声脉冲重定向到滤波电容器
C. By reducing receiver gain during a noise pulse ✓
通过降低噪声脉冲期间的接收器增益
D. By clipping noise peaks ✗
通过削波噪声峰值

G4A04. What is the effect on plate current of the correct setting of a vacuum-tube RF power amplifier’s TUNE control?
真空管射频功率放大器TUNE控制的正确设置对板电流有什么影响?

A. A pronounced peak ✗
明显的峰值
B. A pronounced dip ✓
明显的倾斜
C. No change will be observed ✗
不会观察到任何变化
D. A slow, rhythmic oscillation ✗
缓慢而有节奏的振荡

G4A05. Why is automatic level control (ALC) used with an RF power amplifier?
为什么自动电平控制（ALC）与RF功率放大器一起使用?

A. To balance the transmitter audio frequency response ✗
平衡发射机音频响应
B. To reduce harmonic radiation ✗
减少谐波辐射
C. To prevent excessive drive ✓
防止过度驱动
D. To increase overall efficiency ✗
提高整体效率

G4A06. What is the purpose of an antenna tuner?
天线调谐器的用途是什么?

A. Reduce the SWR in the feed line to the antenna ✗
降低天线馈线中的SWR
B. Reduce the power dissipation in the feedline to the antenna ✗
降低天线馈线的功耗
C. Increase power transfer from the transmitter to the feed line ✓
增加从变送器到馈线的功率传输
D. All these choices are correct ✗
所有这些选择都是正确的

G4A07. What happens as a receiver’s noise reduction control level is increased?
当接收器的降噪控制级别增加时会发生什么?

A. Received signals may become distorted ✓
接收到的信号可能会失真
B. Received frequency may become unstable ✗
接收频率可能变得不稳定
C. CW signals may become severely attenuated ✗
CW信号可能会严重衰减
D. Received frequency may shift several kHz ✗
接收频率可能会偏移几kHz

G4A08. What is the correct adjustment for the LOAD or COUPLING control of a vacuum tube RF power amplifier?
真空管射频功率放大器的负载或耦合控制的正确调整是什么?

A. Minimum SWR on the antenna ✗
天线上的最小SWR
B. Minimum plate current without exceeding maximum allowable grid current ✗
不超过最大允许电网电流的最小板电流
C. Highest plate voltage while minimizing grid current ✗
最高极板电压，同时最小化电网电流
D. Desired power output without exceeding maximum allowable plate current ✓
不超过最大允许板电流的期望功率输出

G4A09. What is the purpose of delaying RF output after activating a transmitter’s keying line to an external amplifier?
激活发射器与外部放大器的键控线后，延迟RF输出的目的是什么?

A. To prevent key clicks on CW ✗
防止CW上的按键点击
B. To prevent transient overmodulation ✗
防止瞬态过调制
C. To allow time for the amplifier to switch the antenna between the transceiver and the amplifier output ✓
为放大器留出时间在收发器和放大器输出之间切换天线
D. To allow time for the amplifier power supply to reach operating level ✗
为放大器电源达到工作电平留出时间

G4A10. What is the function of an electronic keyer?
电子钥匙的功能是什么?

A. Automatic transmit/receive switching ✗
自动发送/接收切换
B. Automatic generation of dots and dashes for CW operation ✓
CW操作点和虚线的自动生成
C. To allow time for switching the antenna from the receiver to the transmitter ✗
留出时间将天线从接收器切换到发射器
D. Computer interface for PSK and RTTY operation ✗
PSK和RTTY操作的计算机接口

G4A11. Why should the ALC system be inactive when transmitting AFSK data signals?
为什么在传输AFSK数据信号时ALC系统应处于非活动状态?

A. ALC will invert the modulation of the AFSK mode ✗
ALC将反转AFSK模式的调制
B. The ALC action distorts the signal ✓
自动高度控制动作使信号失真
C. When using digital modes, too much ALC activity can cause the transmitter to overheat ✗
当使用数字模式时，过多的ALC活动可能会导致变送器过热
D. All these choices are correct ✗
所有这些选择都是正确的

G4A12. Which of the following is a common use of the dual-VFO feature on a transceiver?
以下哪项是收发器上双VFO功能的常见用途?

A. To allow transmitting on two frequencies at once ✗
允许同时在两个频率上传输
B. To permit full duplex operation -- that is, transmitting and receiving at the same time ✗
允许全双工操作，即同时发送和接收
C. To transmit on one frequency and listen on another ✓
在一个频率上传输，在另一个频率下收听
D. To improve frequency accuracy by allowing variable frequency output (VFO) operation ✗
通过允许变频输出（VFO）操作来提高频率精度

G4A13. What is the purpose of using a receive attenuator?
使用接收衰减器的目的是什么?

A. To prevent receiver overload from strong incoming signals ✓
防止接收器因强输入信号而过载
B. To reduce the transmitter power when driving a linear amplifier ✗
在驱动线性放大器时降低发射器功率
C. To reduce power consumption when operating from batteries ✗
使用电池操作时降低功耗
D. To reduce excessive audio level on strong signals ✗
降低强信号的过度音频水平

G4B Tests and test equipment
测试和测试设备

G4B01. What item of test equipment contains horizontal and vertical channel amplifiers?
什么样的测试设备包含水平和垂直通道放大器?

A. An ohmmeter ✗
欧姆表
B. A signal generator ✗
信号发生器
C. An ammeter ✗
电流表
D. An oscilloscope ✓
示波器

G4B02. Which of the following is an advantage of an oscilloscope versus a digital voltmeter?
示波器与数字电压表相比，以下哪一项是优势?

A. An oscilloscope uses less power ✗
示波器功耗较低
B. Complex impedances can be easily measured ✗
复杂阻抗可以很容易地测量
C. Greater precision ✗
更高的精度
D. Complex waveforms can be measured ✓
可以测量复杂的波形

G4B03. Which of the following is the best instrument to use for checking the keying waveform of a CW transmitter?
以下哪项是检查CW发射机键控波形的最佳仪器?

A. An oscilloscope ✓
示波器
B. A field strength meter ✗
场强计
C. A sidetone monitor ✗
侧音显示器
D. A wavemeter ✗
波长计

G4B04. What signal source is connected to the vertical input of an oscilloscope when checking the RF envelope pattern of a transmitted signal?
在检查传输信号的RF包络模式时，示波器的垂直输入连接了什么信号源?

A. The local oscillator of the transmitter ✗
发射机的本地振荡器
B. An external RF oscillator ✗
外部射频振荡器
C. The transmitter balanced mixer output ✗
变送器平衡混频器输出
D. The attenuated RF output of the transmitter ✓
发射器的衰减RF输出

G4B05. Why do voltmeters have high input impedance?
为什么电压表具有高输入阻抗?

A. It improves the frequency response ✗
它提高了频率响应
B. It allows for higher voltages to be safely measured ✗
它允许安全地测量更高的电压
C. It improves the resolution of the readings ✗
它提高了读数的分辨率
D. It decreases the loading on circuits being measured ✓
它降低了被测电路的负载

G4B06. What is an advantage of a digital multimeter as compared to an analog multimeter?
与模拟万用表相比，数字万用表有什么优势?

A. Better for measuring computer circuits ✗
更适合测量计算机电路
B. Less prone to overload ✗
不易过载
C. Higher precision ✓
更高的精度
D. Faster response ✗
更快的响应

G4B07. What signals are used to conduct a two-tone test?
什么信号用于进行双音测试?

A. Two audio signals of the same frequency shifted 90 degrees ✗
两个相同频率的音频信号偏移90度
B. Two non-harmonically related audio signals ✓
两个非谐波相关的音频信号
C. Two swept frequency tones ✗
两个扫频音调
D. Two audio frequency range square wave signals of equal amplitude ✗
两个等振幅的音频范围方波信号

G4B08. What transmitter performance parameter does a two-tone test analyze?
双音测试分析什么发射机性能参数?

A. Linearity ✓
线性
B. Percentage of suppression of the carrier and undesired sideband for SSB ✗
SSB的载波和非期望边带抑制百分比
C. Percentage of frequency modulation ✗
频率调制百分比
D. Percentage of carrier phase shift ✗
载波相移百分比

G4B09. When is an analog multimeter preferred to a digital multimeter?
模拟万用表何时优于数字万用表?

A. When testing logic circuits ✗
测试逻辑电路时
B. When high precision is desired ✗
当需要高精度时
C. When measuring the frequency of an oscillator ✗
测量振荡器的频率时
D. When adjusting circuits for maximum or minimum values ✓
调整电路的最大值或最小值时

G4B10. Which of the following can be determined with a directional wattmeter?
以下哪项可以用定向瓦特计确定?

A. Standing wave ratio ✓
驻波比
B. Antenna front-to-back ratio ✗
天线前后比
C. RF interference ✗
射频干扰
D. Radio wave propagation ✗
无线电波传播

G4B11. Which of the following must be connected to an antenna analyzer when it is being used for SWR measurements?
当天线分析仪用于SWR测量时，以下哪项必须连接到天线分析仪?

A. Receiver ✗
接受者
B. Transmitter ✗
变送器
C. Antenna and feed line ✓
天线和馈线
D. All these choices are correct ✗
所有这些选择都是正确的

G4B12. What effect can strong signals from nearby transmitters have on an antenna analyzer?
来自附近发射机的强信号会对天线分析仪产生什么影响?

A. Desensitization which can cause intermodulation products which interfere with impedance readings ✗
可导致干扰阻抗读数的互调产物的去敏化
B. Received power that interferes with SWR readings ✓
接收到干扰SWR读数的电源
C. Generation of harmonics which interfere with frequency readings ✗
产生干扰频率读数的谐波
D. All these choices are correct ✗
所有这些选择都是正确的

G4B13. Which of the following can be measured with an antenna analyzer?
以下哪项可以用天线分析仪测量?

A. Front-to-back ratio of an antenna ✗
天线的前后比
B. Power output from a transmitter ✗
变送器的功率输出
C. Impedance of coaxial cable ✓
同轴电缆阻抗
D. Gain of a directional antenna ✗
定向天线的增益

G4C Interference to consumer electronics; grounding and bonding
对消费电子产品的干扰；接地和连接

G4C01. Which of the following might be useful in reducing RF interference to audio frequency circuits?
以下哪项可能有助于减少对音频电路的射频干扰?

A. Bypass inductor ✗
旁路感应器
B. Bypass capacitor ✓
旁路电容器
C. Forward-biased diode ✗
正向偏置二极管
D. Reverse-biased diode ✗
反向偏置二极管

G4C02. Which of the following could be a cause of interference covering a wide range of frequencies?
以下哪一项可能是覆盖广泛频率的干扰的原因?

A. Not using a balun or line isolator to feed balanced antennas ✗
不使用平衡-不平衡变换器或线路隔离器为平衡天线馈电
B. Lack of rectification of the transmitter's signal in power conductors ✗
缺少对电源导线中变送器信号的整流
C. Arcing at a poor electrical connection ✓
电气连接不良时发生电弧
D. Using a balun to feed an unbalanced antenna ✗
使用巴伦为不平衡天线馈电

G4C03. What sound is heard from an audio device experiencing RF interference from a single sideband phone transmitter?
当音频设备受到单边带电话发射机的射频干扰时，会听到什么声音?

A. A steady hum whenever the transmitter is on the air ✗
只要发射机在广播中，就会发出稳定的嗡嗡声
B. On-and-off humming or clicking ✗
断断续续的嗡嗡声或咔嗒声
C. Distorted speech ✓
言语失真
D. Clearly audible speech ✗
清晰的语音

G4C04. What sound is heard from an audio device experiencing RF interference from a CW transmitter?
音频设备受到CW发射机的RF干扰时，会听到什么声音?

A. On-and-off humming or clicking ✓
断断续续的嗡嗡声或咔嗒声
B. A CW signal at a nearly pure audio frequency ✗
近乎纯音频的CW信号
C. A chirpy CW signal ✗
啁啾CW信号
D. Severely distorted audio ✗
音频严重失真

G4C05. What is a possible cause of high voltages that produce RF burns?
产生射频灼伤的高电压的可能原因是什么?

A. Flat braid rather than round wire has been used for the ground wire ✗
地线采用扁平编织而非圆形导线
B. Insulated wire has been used for the ground wire ✗
地线已使用绝缘导线
C. The ground rod is resonant ✗
接地棒谐振
D. The ground wire has high impedance on that frequency ✓
接地线在该频率上具有高阻抗

G4C06. What is a possible effect of a resonant ground connection?
谐振接地的可能影响是什么?

A. Overheating of ground straps ✗
接地母线过热
B. Corrosion of the ground rod ✗
接地棒腐蚀
C. High RF voltages on the enclosures of station equipment ✓
台站设备外壳上的高射频电压
D. A ground loop ✗
接地回路

G4C07. Why should soldered joints not be used in lightning protection ground connections?
为什么不应在防雷接地连接中使用焊接接头?

A. A soldered joint will likely be destroyed by the heat of a lightning strike ✓
焊接接头可能会被雷击的热量破坏
B. Solder flux will prevent a low conductivity connection ✗
焊剂可防止低导电性连接
C. Solder has too high a dielectric constant to provide adequate lightning protection ✗
焊料的介电常数太高，无法提供足够的雷电保护
D. All these choices are correct ✗
所有这些选择都是正确的

G4C08. Which of the following would reduce RF interference caused by common-mode current on an audio cable?
以下哪项可以减少音频电缆上共模电流引起的射频干扰?

A. Place a ferrite choke on the cable ✓
在电缆上放置铁氧体扼流圈
B. Connect the center conductor to the shield of all cables to short circuit the RFI signal ✗
将中心导体连接到所有电缆的屏蔽上，使RFI信号短路
C. Ground the center conductor of the audio cable causing the interference ✗
将造成干扰的音频电缆的中心导线接地
D. Add an additional insulating jacket to the cable ✗
为电缆添加额外的绝缘护套

G4C09. How can the effects of ground loops be minimized?
如何将接地回路的影响降至最低?

A. Connect all ground conductors in series ✗
串联连接所有接地导线
B. Connect the AC neutral conductor to the ground wire ✗
将交流中性导线连接到接地线
C. Avoid using lock washers and star washers when making ground connections ✗
接地时避免使用锁紧垫圈和星形垫圈
D. Bond equipment enclosures together ✓
将设备外壳粘合在一起

G4C10. What could be a symptom caused by a ground loop in your station's audio connections?
你的电台音频连接中的接地回路可能会导致什么症状?

A. You receive reports of "hum" on your station's transmitted signal ✓
您收到电台传输信号"嗡嗡"的报告
B. The SWR reading for one or more antennas is suddenly very high ✗
一个或多个天线的SWR读数突然非常高
C. An item of station equipment starts to draw excessive amounts of current ✗
一项电站设备开始消耗过多的电流
D. You receive reports of harmonic interference from your station ✗
您收到来自电台的谐波干扰报告

G4C11. What technique helps to minimize RF "hot spots" in an amateur station?
什么技术可以帮助业余电台最大限度地减少射频"热点"?

A. Building all equipment in a metal enclosure ✗
在金属外壳中建造所有设备
B. Using surge suppressor power outlets ✗
使用浪涌抑制器电源插座
C. Bonding all equipment enclosures together ✓
将所有设备外壳连接在一起
D. Placing low-pass filters on all feed lines ✗
在所有馈线上放置低通滤波器

G4C12. Why must all metal enclosures of station equipment be grounded?
为什么车站设备的所有金属外壳都必须接地?

A. It prevents a blown fuse in the event of an internal short circuit ✗
它可在发生内部短路时防止保险丝熔断
B. It prevents signal overload ✗
防止信号过载
C. It ensures that the neutral wire is grounded ✗
它确保中性线接地
D. It ensures that hazardous voltages cannot appear on the chassis ✓
它确保机箱上不会出现危险电压

G4D Speech processors; S meters; sideband operation near band edges
语音处理器；S米；频带边缘附近的边带操作

G4D01. What is the purpose of a speech processor in a transceiver?
收发器中语音处理器的用途是什么?

A. Increase the apparent loudness of transmitted voice signals ✓
增加传输语音信号的明显响度
B. Increase transmitter bass response for more natural-sounding SSB signals ✗
提高发射机低音响应，获得更自然的SSB信号
C. Prevent distortion of voice signals ✗
防止语音信号失真
D. Decrease high-frequency voice output to prevent out-of-band operation ✗
减少高频语音输出，防止带外操作

G4D02. How does a speech processor affect a single sideband phone signal?
语音处理器如何影响单边带电话信号?

A. It increases peak power ✗
它增加了峰值功率
B. It increases average power ✓
它提高了平均功率
C. It reduces harmonic distortion ✗
它减少了谐波失真
D. It reduces intermodulation distortion ✗
它减少了互调失真

G4D03. What is the effect of an incorrectly adjusted speech processor?
语音处理器调整不正确会产生什么影响?

A. Distorted speech ✗
言语失真
B. Excess intermodulation products ✗
过量互调产物
C. Excessive background noise ✗
背景噪声过大
D. All these choices are correct ✓
所有这些选择都是正确的

G4D04. What does an S meter measure?
S表测量的是什么?

A. Carrier suppression ✗
载波抑制
B. Impedance ✗
阻抗
C. Received signal strength ✓
接收信号强度
D. Transmitter power output ✗
变送器功率输出

G4D05. How does a signal that reads 20 dB over S9 compare to one that reads S9 on a receiver, assuming a properly calibrated S meter?
假设S计校准正确，S9上读取20 dB的信号与接收器上读取S9的信号相比如何?

A. It is 10 times less powerful ✗
它的威力要小10倍
B. It is 20 times less powerful ✗
它的威力要小20倍
C. It is 20 times more powerful ✗
它的威力是原来的20倍
D. It is 100 times more powerful ✓
它的威力是原来的100倍

G4D06. How much change in signal strength is typically represented by one S unit?
信号强度的变化通常由一个S单位表示多少?

A. 6 dB ✓
6分贝
B. 12 dB ✗
12分贝
C. 15 dB ✗
15分贝
D. 18 dB ✗
18分贝

G4D07. How much must the power output of a transmitter be raised to change the S meter reading on a distant receiver from S8 to S9?
发射器的功率输出必须提高多少才能将远处接收器上的S表读数从S8更改为S9?

A. Approximately 1.5 times ✗
大约1.5倍
B. Approximately 2 times ✗
大约2次
C. Approximately 4 times ✓
大约4次
D. Approximately 8 times ✗
大约8次

G4D08. What frequency range is occupied by a 3 kHz LSB signal when the displayed carrier frequency is set to 7.178 MHz?
当显示的载波频率设置为7.178MHz时，3kHz LSB信号占据的频率范围是多少?

A. 7.178 MHz to 7.181 MHz ✗
7.178兆赫至7.181兆赫
B. 7.178 MHz to 7.184 MHz ✗
7.178兆赫至7.184兆赫
C. 7.175 MHz to 7.178 MHz ✓
7.175兆赫至7.178兆赫
D. 7.1765 MHz to 7.1795 MHz ✗
7.1765兆赫至7.1795兆赫

G4D09. What frequency range is occupied by a 3 kHz USB signal with the displayed carrier frequency set to 14.347 MHz?
显示的载波频率设置为14.347MHz的3kHz USB信号占用的频率范围是多少?

A. 14.347 MHz to 14.647 MHz ✗
14.347兆赫至14.647兆赫
B. 14.347 MHz to 14.350 MHz ✓
14.347兆赫至14.350兆赫
C. 14.344 MHz to 14.347 MHz ✗
14.344兆赫至14.347兆赫
D. 14.3455 MHz to 14.3485 MHz ✗
14.3455兆赫至14.3485兆赫

G4D10. How close to the lower edge of a band's phone segment should your displayed carrier frequency be when using 3 kHz wide LSB?
当使用3 kHz宽的LSB时，您显示的载波频率应该离波段电话段的下边缘有多近?

A. At least 3 kHz above the edge of the segment ✓
片段边缘上方至少3 kHz
B. At least 3 kHz below the edge of the segment ✗
段边缘下方至少3 kHz
C. At least 1 kHz below the edge of the segment ✗
段边缘下方至少1 kHz
D. At least 1 kHz above the edge of the segment ✗
片段边缘上方至少1 kHz

G4D11. How close to the upper edge of a band's phone segment should your displayed carrier frequency be when using 3 kHz wide USB?
当使用3 kHz宽的USB时，您显示的载波频率应该离频段手机段的上边缘有多近?

A. At least 3 kHz above the edge of the band ✗
频带边缘以上至少3 kHz
B. At least 3 kHz below the edge of the band ✓
频带边缘以下至少3 kHz
C. At least 1 kHz above the edge of the segment ✗
片段边缘上方至少1 kHz
D. At least 1 kHz below the edge of the segment ✗
段边缘下方至少1 kHz

G4E Mobile and portable HF stations; alternative energy source operation
移动和便携式高频站；替代能源运行

G4E01. What is the purpose of a capacitance hat on a mobile antenna?
移动天线上的电容帽的用途是什么?

A. To increase the power handling capacity of a whip antenna ✗
增加鞭状天线的功率处理能力
B. To reduce radiation resistance ✗
降低辐射阻力
C. To electrically lengthen a physically short antenna ✓
用电气方式延长物理上较短的天线
D. To lower the radiation angle ✗
降低辐射角

G4E02. What is the purpose of a corona ball on an HF mobile antenna?
HF移动天线上的电晕球的用途是什么?

A. To narrow the operating bandwidth of the antenna ✗
缩小天线的工作带宽
B. To increase the “Q” of the antenna ✗
增加天线的“Q”
C. To reduce the chance of damage if the antenna should strike an object ✗
为了减少天线撞击物体时损坏的可能性
D. To reduce RF voltage discharge from the tip of the antenna while transmitting ✓
降低发射时天线尖端的射频电压放电

G4E03. Which of the following direct, fused power connections would be the best for a 100-watt HF mobile installation?
以下哪种直接的、带保险丝的电源连接最适合100瓦HF移动设备?

A. To the battery using heavy-gauge wire ✓
使用粗导线连接到蓄电池
B. To the alternator or generator using heavy-gauge wire ✗
使用粗导线连接到交流发电机或发电机
C. To the battery using insulated heavy duty balanced transmission line ✗
使用绝缘重型平衡传输线的蓄电池
D. To the alternator or generator using insulated heavy duty balanced transmission line ✗
至交流发电机或使用绝缘重型平衡传输线的发电机

G4E04. Why should DC power for a 100-watt HF transceiver not be supplied by a vehicle’s auxiliary power socket?
为什么100瓦高频收发器的直流电不能由车辆的辅助电源插座提供?

A. The socket is not wired with an RF-shielded power cable ✗
插座未连接射频屏蔽电源线
B. The socket’s wiring may be inadequate for the current drawn by the transceiver ✓
插座的接线可能不足以容纳收发器的电流
C. The DC polarity of the socket is reversed from the polarity of modern HF transceivers ✗
插座的直流极性与现代高频收发器的极性相反
D. Drawing more than 50 watts from this socket could cause the engine to overheat ✗
从这个插座中抽取超过50瓦的功率可能会导致发动机过热

G4E05. Which of the following most limits an HF mobile installation?
以下哪项最限制HF移动设备的安装?

A. “Picket fencing” ✗
B. The wire gauge of the DC power line to the transceiver ✗
至收发器的直流电源线的线规
C. Efficiency of the electrically short antenna ✓
电短路天线的效率
D. FCC rules limiting mobile output power on the 75-meter band ✗
FCC规则限制75米波段的移动输出功率

G4E06. What is one disadvantage of using a shortened mobile antenna as opposed to a full-size antenna?
与全尺寸天线相比，使用缩短的移动天线的一个缺点是什么?

A. Short antennas are more likely to cause distortion of transmitted signals ✗
短天线更有可能导致发射信号失真
B. Q of the antenna will be very low ✗
天线的Q将非常低
C. Operating bandwidth may be very limited ✓
操作带宽可能非常有限
D. Harmonic radiation may increase ✗
谐波辐射可能增加

G4E07. Which of the following may cause receive interference to an HF transceiver installed in a vehicle?
以下哪项可能会对安装在车辆中的HF收发器造成接收干扰?

A. The battery charging system ✗
蓄电池充电系统
B. The fuel delivery system ✗
燃油输送系统
C. The control computers ✗
控制计算机
D. All these choices are correct ✓
所有这些选择都是正确的

G4E08. In what configuration are the individual cells in a solar panel connected together?
太阳能电池板中的单个电池以何种配置连接在一起?

A. Series-parallel ✓
串并联
B. Shunt ✗
移走
C. Bypass ✗
旁路
D. Full-wave bridge ✗
全波电桥

G4E09. What is the approximate open-circuit voltage from a fully illuminated silicon photovoltaic cell?
全照明硅光伏电池的近似开路电压是多少?

A. 0.02 VDC ✗
0.02伏直流电
B. 0.5 VDC ✓
0.5伏直流电
C. 0.2 VDC ✗
0.2伏直流电
D. 1.38 VDC ✗
1.38伏直流电

G4E10. Why should a series diode be connected between a solar panel and a storage battery that is being charged by the panel?
为什么要在太阳能电池板和电池板充电的蓄电池之间连接串联二极管?

A. To prevent overload by regulating the charging voltage ✗
通过调节充电电压防止过载
B. To prevent discharge of the battery through the panel during times of low or no illumination ✓
在照明不足或无照明时，防止电池通过面板放电
C. To limit the current flowing from the panel to a safe value ✗
将面板的电流限制在安全值
D. To prevent damage to the battery due to excessive voltage at high illumination levels ✗
为防止在高照明水平下电压过高而损坏蓄电池

G4E11. What precaution should be taken when connecting a solar panel to a lithium iron phosphate battery?
将太阳能电池板连接到磷酸铁锂电池时应采取什么预防措施?

A. Ground the solar panel outer metal framework ✗
将太阳能电池板外部金属框架接地
B. Ensure the battery is placed terminals-up ✗
确保蓄电池接线端朝上
C. A series resistor must be in place ✗
串联电阻器必须就位
D. The solar panel must have a charge controller ✓
太阳能电池板必须有充电控制器

G5 ELECTRICAL PRINCIPLES
电学原理

G5A Reactance; inductance; capacitance; impedance; impedance transformation; resonance
电抗；电感；电容；阻抗；阻抗变换；洪亮

G5A01. What happens when inductive and capacitive reactance are equal in a series LC circuit?
当电感和容抗在串联LC电路中相等时会发生什么?

A. Resonance causes impedance to be very high ✗
谐振导致阻抗非常高
B. Impedance is equal to the geometric mean of the inductance and capacitance ✗
阻抗等于电感和电容的几何平均值
C. Resonance causes impedance to be very low ✓
谐振导致阻抗非常低
D. Impedance is equal to the arithmetic mean of the inductance and capacitance ✗
阻抗等于电感和电容的算术平均值

G5A02. What is reactance?
什么是电抗?

A. Opposition to the flow of direct current caused by resistance ✗
电阻引起的对直流电流的阻碍
B. Opposition to the flow of alternating current caused by capacitance or inductance ✓
由电容或电感引起的对交流电流动的阻碍
C. Reinforcement of the flow of direct current caused by resistance ✗
加强由电阻引起的直流电流
D. Reinforcement of the flow of alternating current caused by capacitance or inductance ✗
由电容或电感引起的交流电流的增强

G5A03. Which of the following is opposition to the flow of alternating current in an inductor?
下列哪一项与电感器中的交流电流相反?

A. Conductance ✗
传导性
B. Reluctance ✗
不情愿
C. Admittance ✗
进入权
D. Reactance ✓
电抗

G5A04. Which of the following is opposition to the flow of alternating current in a capacitor?
下列哪一项与电容器中的交流电流相反?

A. Conductance ✗
传导性
B. Reluctance ✗
不情愿
C. Reactance ✓
电抗
D. Admittance ✗
进入权

G5A05. How does an inductor react to AC?
电感器对交流电有什么反应?

A. As the frequency of the applied AC increases, the reactance decreases ✗
随着施加的交流电频率的增加，电抗减小
B. As the amplitude of the applied AC increases, the reactance increases ✗
随着施加的交流电振幅的增加，电抗也会增加
C. As the amplitude of the applied AC increases, the reactance decreases ✗
随着施加的AC的幅度增加，电抗减小
D. As the frequency of the applied AC increases, the reactance increases ✓
随着施加的交流电频率的增加，电抗也会增加

G5A06. How does a capacitor react to AC?
电容器对交流电有什么反应?

A. As the frequency of the applied AC increases, the reactance decreases ✓
随着施加的交流电频率的增加，电抗减小
B. As the frequency of the applied AC increases, the reactance increases ✗
随着施加的交流电频率的增加，电抗也会增加
C. As the amplitude of the applied AC increases, the reactance increases ✗
随着施加的交流电振幅的增加，电抗也会增加
D. As the amplitude of the applied AC increases, the reactance decreases ✗
随着施加的AC的幅度增加，电抗减小

G5A07. What is the term for the inverse of impedance?
阻抗倒数的术语是什么?

A. Conductance ✗
传导性
B. Susceptance ✗
接受
C. Reluctance ✗
不情愿
D. Admittance ✓
进入权

G5A08. What is impedance?
什么是阻抗?

A. The ratio of current to voltage ✗
电流与电压之比
B. The product of current and voltage ✗
电流和电压的乘积
C. The ratio of voltage to current ✓
电压与电流之比
D. The product of current and reactance ✗
电流和电抗的乘积

G5A09. What unit is used to measure reactance?
电抗的测量单位是什么?

A. Farad ✗
法拉
B. Ohm ✓
欧姆
C. Ampere ✗
安培
D. Siemens ✗
西门子

G5A10. Which of the following devices can be used for impedance matching at radio frequencies?
以下哪种设备可用于射频阻抗匹配?

A. A transformer ✗
变压器
B. A Pi-network ✗
Pi网络
C. A length of transmission line ✗
一段输电线路
D. All these choices are correct ✓
所有这些选择都是正确的

G5A11. What letter is used to represent reactance?
用哪个字母表示电抗?

A. Z ✗
B. X ✓
十、
C. B ✗
D. Y ✗

G5A12. What occurs in an LC circuit at resonance?
LC电路在谐振时会发生什么?

A. Current and voltage are equal ✗
电流和电压相等
B. Resistance is cancelled ✗
阻力被取消
C. The circuit radiates all its energy in the form of radio waves ✗
电路以无线电波的形式辐射所有能量
D. Inductive reactance and capacitive reactance cancel ✓
感抗和容抗抵消

G5B The decibel; current and voltage dividers; electrical power calculations; sine wave root-mean-square (RMS) values; PEP calculations
分贝；电流和电压分配器；电力计算；正弦波均方根（RMS）值；PEP计算

G5B01. What dB change represents a factor of two increase or decrease in power?
什么dB变化表示功率增加或减少两倍?

A. Approximately 2 dB ✗
大约2 dB
B. Approximately 3 dB ✓
大约3 dB
C. Approximately 6 dB ✗
大约6 dB
D. Approximately 9 dB ✗
大约9 dB

G5B02. How does the total current relate to the individual currents in a circuit of parallel resistors?
在并联电阻器电路中，总电流与单个电流的关系如何?

A. It equals the average of the branch currents ✗
它等于支路电流的平均值
B. It decreases as more parallel branches are added to the circuit ✗
随着电路中添加更多并联支路，它会减少
C. It equals the sum of the currents through each branch ✓
它等于通过每个支路的电流之和
D. It is the sum of the reciprocal of each individual voltage drop ✗
它是每个单独电压降的倒数之和

G5B03. How many watts of electrical power are consumed if 400 VDC is supplied to an 800-ohm load?
如果向800欧姆负载提供400伏直流电，将消耗多少瓦的电力?

A. 0.5 watts ✗
0.5瓦
B. 200 watts ✓
200瓦
C. 400 watts ✗
400瓦
D. 3200 watts ✗
3200瓦

G5B04. How many watts of electrical power are consumed by a 12 VDC light bulb that draws 0.2 amperes?
一个消耗0.2安培的12伏直流电灯泡消耗多少瓦的电能?

A. 2.4 watts ✓
2.4瓦
B. 24 watts ✗
24瓦
C. 6 watts ✗
6瓦
D. 60 watts ✗
60瓦

G5B05. How many watts are consumed when a current of 7.0 milliamperes flows through a 1,250-ohm resistance?
当7.0毫安的电流流过1250欧姆的电阻时，消耗了多少瓦?

A. Approximately 61 milliwatts ✓
大约61毫瓦
B. Approximately 61 watts ✗
大约61瓦
C. Approximately 11 milliwatts ✗
大约11毫瓦
D. Approximately 11 watts ✗
大约11瓦

G5B06. What is the PEP produced by 200 volts peak-to-peak across a 50-ohm dummy load?
50欧姆假负载上200伏峰间电压产生的PEP是多少?

A. 1.4 watts ✗
1.4瓦
B. 100 watts ✓
100瓦
C. 353.5 watts ✗
353.5瓦
D. 400 watts ✗
400瓦

G5B07. What value of an AC signal produces the same power dissipation in a resistor as a DC voltage of the same value?
交流信号的哪个值在电阻器中产生与相同值的直流电压相同的功率耗散?

A. The peak-to-peak value ✗
峰间值
B. The peak value ✗
峰值
C. The RMS value ✓
RMS值
D. The reciprocal of the RMS value ✗
RMS值的倒数

G5B08. What is the peak-to-peak voltage of a sine wave with an RMS voltage of 120 volts?
RMS电压为120伏的正弦波的峰间电压是多少?

A. 84.8 volts ✗
84.8伏
B. 169.7 volts ✗
169.7伏
C. 240.0 volts ✗
240.0伏
D. 339.4 volts ✓
339.4伏

G5B09. What is the RMS voltage of a sine wave with a value of 17 volts peak?
峰值为17伏的正弦波的RMS电压是多少?

A. 8.5 volts ✗
8.5伏
B. 12 volts ✓
12伏
C. 24 volts ✗
24伏
D. 34 volts ✗
34伏

G5B10. What percentage of power loss is equivalent to a loss of 1 dB?
功率损耗的百分比相当于1 dB的损耗?

A. 10.9 percent ✗
10.9%
B. 12.2 percent ✗
12.2%
C. 20.6 percent ✓
20.6%
D. 25.9 percent ✗
25.9%

G5B11. What is the ratio of PEP to average power for an unmodulated carrier?
未调制载波的PEP与平均功率之比是多少?

A. 0.707 ✗
0.707
B. 1 ✓
1
C. 1.414 ✗
1.414
D. 2 ✗
2

G5B12. What is the RMS voltage across a 50-ohm dummy load dissipating 1200 watts?
耗散1200瓦的50欧姆虚拟负载上的RMS电压是多少?

A. 173 volts ✗
173伏
B. 245 volts ✓
245伏
C. 346 volts ✗
346伏
D. 692 volts ✗
692伏

G5B13. What is the output PEP of an unmodulated carrier if the average power is 1060 watts?
如果平均功率为1060瓦，那么未调制载波的输出PEP是多少?

A. 530 watts ✗
530瓦
B. 1060 watts ✓
1060瓦
C. 1500 watts ✗
1500瓦
D. 2120 watts ✗
2120瓦

G5B14. What is the output PEP of 500 volts peak-to-peak across a 50-ohm load?
50欧姆负载上500伏峰对峰的输出PEP是多少?

A. 8.75 watts ✗
8.75瓦
B. 625 watts ✓
625瓦
C. 2500 watts ✗
2500瓦
D. 5000 watts ✗
5000瓦

G5C Resistors, capacitors, and inductors in series and parallel; transformers
串联和并联的电阻器、电容器和电感器；变压器

G5C01. What causes a voltage to appear across the secondary winding of a transformer when an AC voltage source is connected across its primary winding?
当交流电压源连接在变压器的初级绕组上时，是什么导致变压器的次级绕组上出现电压?

A. Capacitive coupling ✗
电容耦合
B. Displacement current coupling ✗
位移电流耦合器
C. Mutual inductance ✓
互感
D. Mutual capacitance ✗
互电容

G5C02. What is the output voltage if an input signal is applied to the secondary winding of a 4:1 voltage step-down transformer instead of the primary winding?
如果输入信号施加到4:1降压变压器的次级绕组而不是初级绕组，输出电压是多少?

A. The input voltage is multiplied by 4 ✓
输入电压乘以4
B. The input voltage is divided by 4 ✗
输入电压除以4
C. Additional resistance must be added in series with the primary to prevent overload ✗
附加电阻必须与初级串联，以防止过载
D. Additional resistance must be added in parallel with the secondary to prevent overload ✗
附加电阻必须与次级并联添加，以防止过载

G5C03. What is the total resistance of a 10-, a 20-, and a 50-ohm resistor connected in parallel?
并联的10欧姆、20欧姆和50欧姆电阻器的总电阻是多少?

A. 5.9 ohms ✓
5.9欧姆
B. 0.17 ohms ✗
0.17欧姆
C. 17 ohms ✗
17欧姆
D. 80 ohms ✗
80欧姆

G5C04. What is the approximate total resistance of a 100- and a 200-ohm resistor in parallel?
并联的100欧姆和200欧姆电阻器的大致总电阻是多少?

A. 300 ohms ✗
300欧姆
B. 150 ohms ✗
150欧姆
C. 75 ohms ✗
75欧姆
D. 67 ohms ✓
67欧姆

G5C05. Why is the primary winding wire of a voltage step-up transformer usually a larger size than that of the secondary winding?
为什么升压变压器的初级绕组导线通常比次级绕组的尺寸大?

A. To improve the coupling between the primary and secondary ✗
改善初级和次级之间的耦合
B. To accommodate the higher current of the primary ✓
以适应初级的更高电流
C. To prevent parasitic oscillations due to resistive losses in the primary ✗
防止由于初级电阻损耗而产生的寄生振荡
D. To ensure that the volume of the primary winding is equal to the volume of the secondary winding ✗
确保初级绕组的体积与次级绕组的体积相等

G5C06. What is the voltage output of a transformer with a 500-turn primary and a 1500-turn secondary when 120 VAC is applied to the primary?
当向初级施加120 VAC时，具有500匝初级和1500匝次级的变压器的电压输出是多少?

A. 360 volts ✓
360伏
B. 120 volts ✗
120伏
C. 40 volts ✗
40伏
D. 25.5 volts ✗
25.5伏

G5C07. What transformer turns ratio matches an antenna's 600-ohm feed point impedance to a 50-ohm coaxial cable?
什么变压器匝数比匹配天线的600欧姆馈电点阻抗与50欧姆同轴电缆?

A. 3.5 to 1 ✓
3.5到1
B. 12 to 1 ✗
12到1
C. 24 to 1 ✗
24比1
D. 144 to 1 ✗
144到1

G5C08. What is the equivalent capacitance of two 5.0-nanofarad capacitors and one 750-picofarad capacitor connected in parallel?
并联的两个5.0纳米法拉电容器和一个750皮法拉电容器的等效电容是多少?

A. 576.9 nanofarads ✗
576.9纳法
B. 1,733 picofarads ✗
1733皮法拉
C. 3,583 picofarads ✗
3583皮法拉
D. 10.750 nanofarads ✓
10.750纳法

G5C09. What is the capacitance of three 100-microfarad capacitors connected in series?
三个串联的100微法电容器的电容是多少?

A. 0.33 microfarads ✗
0.33微法
B. 3.0 microfarads ✗
3.0微法拉
C. 33.3 microfarads ✓
33.3微法
D. 300 microfarads ✗
300微法

G5C10. What is the inductance of three 10-millihenry inductors connected in parallel?
三个并联的10毫亨利电感器的电感是多少?

A. 0.30 henries ✗
0.30母鸡
B. 3.3 henries ✗
3.3母鸡
C. 3.3 millihenries ✓
330万亨利
D. 30 millihenries ✗
3000万亨利

G5C11. What is the inductance of a circuit with a 20-millihenry inductor connected in series with a 50-millihenry inductor?
一个20毫亨电感器与一个50毫亨利电感器串联的电路的电感是多少?

A. 7 millihenries ✗
700万亨利
B. 14.3 millihenries ✗
1430万亨利
C. 70 millihenries ✓
7000万亨利
D. 1,000 millihenries ✗
1000万亨利

G5C12. What is the capacitance of a 20-microfarad capacitor connected in series with a 50-microfarad capacitor?
一个20微法的电容器与一个50微法的串联电容器的电容是多少?

A. 0.07 microfarads ✗
0.07微法
B. 14.3 microfarads ✓
14.3微法
C. 70 microfarads ✗
70微法
D. 1,000 microfarads ✗
1000微法

G5C13. Which of the following components should be added to a capacitor to increase the capacitance?
应在电容器中添加以下哪些组件以增加电容?

A. An inductor in series ✗
串联电感器
B. An inductor in parallel ✗
并联的电感器
C. A capacitor in parallel ✓
并联电容器
D. A capacitor in series ✗
串联电容器

G5C14. Which of the following components should be added to an inductor to increase the inductance?
以下哪些组件应该添加到电感器中以增加电感?

A. A capacitor in series ✗
串联电容器
B. A capacitor in parallel ✗
并联电容器
C. An inductor in parallel ✗
并联的电感器
D. An inductor in series ✓
串联电感器

G6 CIRCUIT COMPONENTS
电路元件

G6A Resistors; capacitors; inductors; rectifiers; solid-state diodes and transistors; vacuum tubes; batteries
电阻器；电容器；电感器；整流器；固态二极管和晶体管；真空管；蓄电池

G6A01. What is the minimum allowable discharge voltage for maximum life of a standard 12-volt lead-acid battery?
标准12伏铅酸蓄电池最大使用寿命的最小允许放电电压是多少?

A. 6 volts ✗
6伏
B. 8.5 volts ✗
8.5伏
C. 10.5 volts ✓
10.5伏
D. 12 volts ✗
12伏

G6A02. What is an advantage of batteries with low internal resistance?
内阻低的电池有什么优点?

A. Long life ✗
长寿命
B. High discharge current ✓
高放电电流
C. High voltage ✗
高压
D. Rapid recharge ✗
快速充电

G6A03. What is the approximate forward threshold voltage of a germanium diode?
锗二极管的近似正向阈值电压是多少?

A. 0.1 volt ✗
0.1伏
B. 0.3 volts ✓
0.3伏
C. 0.7 volts ✗
0.7伏
D. 1.0 volts ✗
1.0伏

G6A04. Which of the following is characteristic of an electrolytic capacitor?
以下哪项是电解电容器的特性?

A. Tight tolerance ✗
精密公差
B. Much less leakage than any other type ✗
比任何其他类型的泄漏都小得多
C. High capacitance for a given volume ✓
给定体积的高电容
D. Inexpensive RF capacitor ✗
价格低廉的射频电容器

G6A05. What is the approximate forward threshold voltage of a silicon junction diode?
硅结二极管的近似正向阈值电压是多少?

A. 0.1 volt ✗
0.1伏
B. 0.3 volts ✗
0.3伏
C. 0.7 volts ✓
0.7伏
D. 1.0 volts ✗
1.0伏

G6A06. Why should wire-wound resistors not be used in RF circuits?
为什么RF电路中不应使用线绕电阻器?

A. The resistor's tolerance value would not be adequate ✗
电阻器的公差值不够
B. The resistor's inductance could make circuit performance unpredictable ✓
电阻器的电感可能会使电路性能变得不可预测
C. The resistor could overheat ✗
电阻器可能过热
D. The resistor's internal capacitance would detune the circuit ✗
电阻器的内部电容会使电路失谐

G6A07. What are the operating points for a bipolar transistor used as a switch?
用作开关的双极晶体管的工作点是什么?

A. Saturation and cutoff ✓
饱和和截止
B. The active region (between cutoff and saturation) ✗
活动区域（介于截止和饱和之间）
C. Peak and valley current points ✗
峰谷电流点
D. Enhancement and depletion modes ✗
增强和损耗模式

G6A08. Which of the following is characteristic of low voltage ceramic capacitors?
以下哪项是低压陶瓷电容器的特性?

A. Tight tolerance ✗
精密公差
B. High stability ✗
稳定性高
C. High capacitance for given volume ✗
给定体积的高电容
D. Comparatively low cost ✓
成本相对较低

G6A09. Which of the following describes MOSFET construction?
以下哪项描述MOSFET结构?

A. The gate is formed by a back-biased junction ✗
栅极由反向偏置结形成
B. The gate is separated from the channel by a thin insulating layer ✓
栅极与沟道由薄绝缘层隔开
C. The source is separated from the drain by a thin insulating layer ✗
源极与漏极由薄绝缘层隔开
D. The source is formed by depositing metal on silicon ✗
源极是通过在硅上沉积金属而形成的

G6A10. Which element of a vacuum tube regulates the flow of electrons between cathode and plate?
真空管的哪个元件调节阴极和极板之间的电子流?

A. Control grid ✓
控制网格
B. Suppressor grid ✗
抑制器栅格
C. Screen grid ✗
屏幕网格
D. Trigger electrode ✗
触发电极

G6A11. What happens when an inductor is operated above its self-resonant frequency?
当电感器在其自谐振频率以上工作时会发生什么?

A. Its reactance increases ✗
其电抗增加
B. Harmonics are generated ✗
产生谐波
C. It becomes capacitive ✓
它变成电容性的
D. Catastrophic failure is likely ✗
可能发生灾难性故障

G6A12. What is the primary purpose of a screen grid in a vacuum tube?
真空管中筛网的主要用途是什么?

A. To reduce grid-to-plate capacitance ✓
降低栅极到极板的电容
B. To increase efficiency ✗
提高效率
C. To increase the control grid resistance ✗
增加控制栅极电阻
D. To decrease plate resistance ✗
降低板阻力

G6B Analog and digital integrated circuits (ICs); microwave ICs (MMICs); display devices; RF connectors; ferrite cores
模拟和数字集成电路；微波集成电路（MMIC）；显示设备；射频连接器；铁氧体磁芯

G6B01. What determines the performance of a ferrite core at different frequencies?
是什么决定了铁氧体磁芯在不同频率下的性能?

A. Its conductivity ✗
其导电性
B. Its thickness ✗
其厚度
C. The composition, or “mix,” of materials used ✓
所用材料的组成或“混合物”
D. The ratio of outer diameter to inner diameter ✗
外径与内径之比

G6B02. What is meant by the term MMIC?
MMIC是什么意思?

A. Multi-Mode Integrated Circuit ✗
多模集成电路
B. Monolithic Microwave Integrated Circuit ✓
单块微波集成电路
C. Metal Monolayer Integrated Circuit ✗
金属单层集成电路
D. Mode Modulated Integrated Circuit ✗
模式调制集成电路

G6B03. Which of the following is an advantage of CMOS integrated circuits compared to TTL integrated circuits?
与TTL集成电路相比，以下哪项是CMOS集成电路的优势?

A. Low power consumption ✓
低功耗
B. High power handling capability ✗
高功率处理能力
C. Better suited for RF amplification ✗
更适合射频放大
D. Better suited for power supply regulation ✗
更适合电源调节

G6B04. What is a typical upper frequency limit for low SWR operation of 50-ohm BNC connectors?
50欧姆BNC连接器的低SWR操作的典型频率上限是多少?

A. 50 MHz ✗
50兆赫
B. 500 MHz ✗
500兆赫
C. 4 GHz ✓
D. 40 GHz ✗
40千兆赫

G6B05. What is an advantage of using a ferrite core toroidal inductor?
使用铁氧体磁芯环形电感器的优点是什么?

A. Large values of inductance may be obtained ✗
可以获得较大的电感值
B. The magnetic properties of the core may be optimized for a specific range of frequencies ✗
磁芯的磁性能可以针对特定的频率范围进行优化
C. Most of the magnetic field is contained in the core ✗
大部分磁场都包含在磁芯中
D. All these choices are correct ✓
所有这些选择都是正确的

G6B06. What kind of device is an integrated circuit operational amplifier?
什么样的设备是集成电路运算放大器?

A. Digital ✗
数字的
B. MMIC ✗
C. Programmable Logic ✗
可编程逻辑
D. Analog ✓
模拟

G6B07. Which of the following describes a type N connector?
以下哪项描述了N型连接器?

A. A moisture-resistant RF connector useful to 10 GHz ✓
适用于10GHz的防潮RF连接器
B. A small bayonet connector used for data circuits ✗
用于数据电路的小型卡口连接器
C. A low noise figure VHF connector ✗
一种低噪声VHF连接器
D. A nickel plated version of the PL-259 ✗
PL-259的镀镍版本

G6B08. How is an LED biased when emitting light?
LED在发光时是如何偏置的?

A. In the tunnel-effect region ✗
隧道效应区
B. At the Zener voltage ✗
在齐纳电压下
C. Reverse biased ✗
反向偏置
D. Forward biased ✓
正向偏置

G6B10. How does a ferrite bead or core reduce common-mode RF current on the shield of a coaxial cable?
铁氧体磁珠或磁心如何减少同轴电缆屏蔽上的共模RF电流?

A. By creating an impedance in the current's path ✓
通过在电流路径中创建阻抗
B. It converts common-mode current to differential mode current ✗
它将共模电流转换为差模电流
C. By creating an out-of-phase current to cancel the common-mode current ✗
通过创建异相电流来抵消共模电流
D. Ferrites expel magnetic fields ✗
铁氧体排出磁场

G6B11. What is an SMA connector?
什么是SMA连接器?

A. A type-S to type-M adaptor ✗
S型到M型适配器
B. A small threaded connector suitable for signals up to several GHz ✓
适用于高达数GHz信号的小型螺纹连接器
C. A connector designed for serial multiple access signals ✗
设计用于串行多路访问信号的连接器
D. A type of push-on connector intended for high-voltage applications ✗
一种适用于高压应用的推入式连接器

G6B12. Which of these connector types is commonly used for low frequency or dc signal connections to a transceiver?
以下哪种类型的连接器通常用于连接收发器的低频或直流信号?

A. PL-259 ✗
B. BNC ✗
C. RCA Phono ✓
复合视频
D. Type N ✗
N型

G7 PRACTICAL CIRCUITS
实用电路

G7A Power supplies; schematic symbols
电源；电路图符号

G7A01. What is the function of a power supply bleeder resistor?
电源泄放电阻器的功能是什么?

A. It acts as a fuse for excess voltage ✗
它充当过电压的保险丝
B. It discharges the filter capacitors when power is removed ✓
断电时会使滤波电容器放电
C. It removes shock hazards from the induction coils ✗
它消除了感应线圈的电击危险
D. It eliminates ground loop current ✗
它消除了接地回路电流

G7A02. Which of the following components are used in a power supply filter network?
以下哪些组件用于电源滤波器网络?

A. Diodes ✗
二极管
B. Transformers and transducers ✗
变压器和转换器
C. Capacitors and inductors ✓
电容器和电感器
D. All these choices are correct ✗
所有这些选择都是正确的

G7A03. Which type of rectifier circuit uses two diodes and a center-tapped transformer?
哪种类型的整流器电路使用两个二极管和一个中心抽头变压器?

A. Full-wave ✓
全波
B. Full-wave bridge ✗
全波电桥
C. Half-wave ✗
半波
D. Synchronous ✗
同步的

G7A04. What is characteristic of a half-wave rectifier in a power supply?
电源中半波整流器的特性是什么?

A. Only one diode is required ✓
只需要一个二极管
B. The ripple frequency is twice that of a full-wave rectifier ✗
纹波频率是全波整流器的两倍
C. More current can be drawn from the half-wave rectifier ✗
可以从半波整流器中获得更多电流
D. The output voltage is two times the peak input voltage ✗
输出电压是峰值输入电压的两倍

G7A05. What portion of the AC cycle is converted to DC by a half-wave rectifier?
交流循环的哪一部分由半波整流器转换为直流?

A. 90 degrees ✗
90度
B. 180 degrees ✓
180度
C. 270 degrees ✗
270度
D. 360 degrees ✗
360度

G7A06. What portion of the AC cycle is converted to DC by a full-wave rectifier?
交流循环的哪一部分由全波整流器转换为直流?

A. 90 degrees ✗
90度
B. 180 degrees ✗
180度
C. 270 degrees ✗
270度
D. 360 degrees ✓
360度

G7A07. What is the output waveform of an unfiltered full-wave rectifier connected to a resistive load?
连接到电阻负载的未滤波全波整流器的输出波形是什么?

A. A series of DC pulses at twice the frequency of the AC input ✓
频率为交流输入频率两倍的一系列直流脉冲
B. A series of DC pulses at the same frequency as the AC input ✗
与交流输入频率相同的一系列直流脉冲
C. A sine wave at half the frequency of the AC input ✗
频率为交流输入频率一半的正弦波
D. A steady DC voltage ✗
稳定的直流电压

G7A08. Which of the following is characteristic of a switchmode power supply as compared to a linear power supply?
与线性电源相比，以下哪项是开关模式电源的特性?

A. Faster switching time makes higher output voltage possible ✗
更快的开关时间使更高的输出电压成为可能
B. Fewer circuit components are required ✗
需要更少的电路元件
C. High-frequency operation allows the use of smaller components ✓
高频操作允许使用较小的组件
D. Inherently more stable ✗
内在更稳定

G7A09. Which symbol in figure G7-1 represents a field effect transistor?
图G7-1中的哪个符号表示场效应晶体管?

A. Symbol 2 ✗
符号2
B. Symbol 5 ✗
符号5
C. Symbol 1 ✓
符号1
D. Symbol 4 ✗
符号4

G7A10. Which symbol in figure G7-1 represents a Zener diode?
图G7-1中的哪个符号表示齐纳二极管?

A. Symbol 4 ✗
符号4
B. Symbol 1 ✗
符号1
C. Symbol 11 ✗
符号11
D. Symbol 5 ✓
符号5

G7A11. Which symbol in figure G7-1 represents an NPN junction transistor?
图G7-1中的哪个符号表示NPN结型晶体管?

A. Symbol 1 ✗
符号1
B. Symbol 2 ✓
符号2
C. Symbol 7 ✗
符号7
D. Symbol 11 ✗
符号11

G7A12. Which symbol in Figure G7-1 represents a solid core transformer?
图G7-1中的哪个符号表示实心变压器?

A. Symbol 4 ✗
符号4
B. Symbol 7 ✗
符号7
C. Symbol 6 ✓
符号6
D. Symbol 1 ✗
符号1

G7A13. Which symbol in Figure G7-1 represents a tapped inductor?
图G7-1中的哪个符号表示抽头电感器?

A. Symbol 7 ✓
符号7
B. Symbol 11 ✗
符号11
C. Symbol 6 ✗
符号6
D. Symbol 1 ✗
符号1

G7B Digital circuits; amplifiers and oscillators
数字电路；放大器和振荡器

G7B01. What is the purpose of neutralizing an amplifier?
中和放大器的目的是什么?

A. To limit the modulation index ✗
限制调制指数
B. To eliminate self-oscillations ✓
消除自激振荡
C. To cut off the final amplifier during standby periods ✗
在待机期间切断最终放大器
D. To keep the carrier on frequency ✗
保持载波频率

G7B02. Which of these classes of amplifiers has the highest efficiency?
哪类放大器的效率最高?

A. Class A ✗
A类
B. Class B ✗
B类
C. Class AB ✗
AB类
D. Class C ✓
C类

G7B03. Which of the following describes the function of a two-input AND gate?
以下哪项描述了双输入AND门的功能?

A. Output is high when either or both inputs are low ✗
当其中一个或两个输入都为低时，输出为高
B. Output is high only when both inputs are high ✓
只有当两个输入都为高时，输出才为高
C. Output is low when either or both inputs are high ✗
当其中一个或两个输入都为高时，输出为低
D. Output is low only when both inputs are high ✗
只有当两个输入都为高时，输出才为低

G7B04. In a Class A amplifier, what percentage of the time does the amplifying device conduct?
在a类放大器中，放大设备导通的时间百分比是多少?

A. 100% ✓
B. More than 50% but less than 100% ✗
大于50%但小于100%
C. 50% ✗
D. Less than 50% ✗
低于50%

G7B05. How many states does a 3-bit binary counter have?
一个3位二进制计数器有多少种状态?

A. 3 ✗
3
B. 6 ✗
6
C. 8 ✓
8
D. 16 ✗
16

G7B06. What is a shift register?
什么是移位寄存器?

A. A clocked array of circuits that passes data in steps along the array ✓
一种时钟电路阵列，沿阵列逐级传递数据
B. An array of operational amplifiers used for tri-state arithmetic operations ✗
一种用于三态算术运算的运算放大器阵列
C. A digital mixer ✗
数字混音器
D. An analog mixer ✗
模拟混频器

G7B07. Which of the following are basic components of a sine wave oscillator?
下列哪项是正弦波振荡器的基本组件?

A. An amplifier and a divider ✗
放大器和除法器
B. A frequency multiplier and a mixer ✗
倍频器和混频器
C. A circulator and a filter operating in a feed-forward loop ✗
前馈环路中的循环器和滤波器
D. A filter and an amplifier operating in a feedback loop ✓
在反馈回路中操作的滤波器和放大器

G7B08. How is the efficiency of an RF power amplifier determined?
如何确定射频功率放大器的效率?

A. Divide the DC input power by the DC output power ✗
将直流输入功率除以直流输出功率
B. Divide the RF output power by the DC input power ✓
将射频输出功率除以直流输入功率
C. Multiply the RF input power by the reciprocal of the RF output power ✗
将射频输入功率乘以射频输出功率的倒数
D. Add the RF input power to the DC output power ✗
将射频输入功率与直流输出功率相加

G7B09. What determines the frequency of an LC oscillator?
什么决定LC振荡器的频率?

A. The number of stages in the counter ✗
计数器中的级数
B. The number of stages in the divider ✗
除法器中的级数
C. The inductance and capacitance in the tank circuit ✓
储能电路中的电感和电容
D. The time delay of the lag circuit ✗
滞后电路的时间延迟

G7B10. Which of the following describes a linear amplifier?
以下哪项描述线性放大器?

A. Any RF power amplifier used in conjunction with an amateur transceiver ✗
与业余收发器结合使用的任何RF功率放大器
B. An amplifier in which the output preserves the input waveform ✓
一种放大器，其输出保持输入波形
C. A Class C high efficiency amplifier ✗
C类高效放大器
D. An amplifier used as a frequency multiplier ✗
一种用作倍频器的放大器

G7B11. For which of the following modes is a Class C power stage appropriate for amplifying a modulated signal?
对于以下哪种模式，C类功率级适用于放大调制信号?

A. SSB ✗
B. FM ✓
C. AM ✗
上午
D. All these choices are correct ✗
所有这些选择都是正确的

G7C Transceiver design; filters; oscillators; digital signal processing (DSP)
收发器设计；过滤器；振荡器；数字信号处理

G7C01. What circuit is used to select one of the sidebands from a balanced modulator?
什么电路用于从平衡调制器中选择一个边带?

A. Carrier oscillator ✗
载波振荡器
B. Filter ✓
滤器
C. IF amplifier ✗
中频放大器
D. RF amplifier ✗
射频放大器

G7C02. What output is produced by a balanced modulator?
平衡调制器产生什么输出?

A. Frequency modulated RF ✗
调频RF
B. Audio with equalized frequency response ✗
具有均衡频率响应的音频
C. Audio extracted from the modulation signal ✗
从调制信号中提取的音频
D. Double-sideband modulated RF ✓
双边带调制RF

G7C03. What is one reason to use an impedance matching transformer at a transmitter output?
在变送器输出端使用阻抗匹配变压器的一个原因是什么?

A. To minimize transmitter power output ✗
尽量减少变送器功率输出
B. To present the desired impedance to the transmitter and feed line ✓
向变送器和馈线提供所需阻抗
C. To reduce power supply ripple ✗
减少电源纹波
D. To minimize radiation resistance ✗
尽量减少辐射阻力

G7C04. How is a product detector used?
产品检测器是如何使用的?

A. Used in test gear to detect spurious mixing products ✗
用于检测虚假混合产品的测试装置
B. Used in transmitter to perform frequency multiplication ✗
用于发射机进行倍频
C. Used in an FM receiver to filter out unwanted sidebands ✗
用于调频接收机，滤除不需要的边带
D. Used in a single sideband receiver to extract the modulated signal ✓
在单边带接收机中用于提取调制信号

G7C05. Which of the following is characteristic of a direct digital synthesizer (DDS)?
以下哪项是直接数字合成器（DDS）的特性?

A. Extremely narrow tuning range ✗
调谐范围极窄
B. Relatively high-power output ✗
相对大功率输出
C. Pure sine wave output ✗
纯正弦波输出
D. Variable output frequency with the stability of a crystal oscillator ✓
具有晶体振荡器稳定性的可变输出频率

G7C06. Which of the following is an advantage of a digital signal processing (DSP) filter compared to an analog filter?
与模拟滤波器相比，以下哪项是数字信号处理（DSP）滤波器的优势?

A. A wide range of filter bandwidths and shapes can be created ✓
可以创建各种各样的滤波器带宽和形状
B. Fewer digital components are required ✗
需要更少的数字组件
C. Mixing products are greatly reduced ✗
混合产品大大减少
D. The DSP filter is much more effective at VHF frequencies ✗
DSP滤波器在VHF频率下更有效

G7C07. What term specifies a filter's attenuation inside its passband?
什么术语指定滤波器在通带内的衰减?

A. Insertion loss ✓
插入损耗
B. Return loss ✗
回波损耗
C. Q ✗
D. Ultimate rejection ✗
最终拒绝

G7C08. Which parameter affects receiver sensitivity?
哪个参数会影响接收器灵敏度?

A. Input amplifier gain ✗
输入放大器增益
B. Demodulator stage bandwidth ✗
解调器级带宽
C. Input amplifier noise figure ✗
输入放大器噪声系数
D. All these choices are correct ✓
所有这些选择都是正确的

G7C09. What is the phase difference between the I and Q RF signals that software-defined radio (SDR) equipment uses for modulation and demodulation?
软件无线电（SDR）设备用于调制和解调的I和Q RF信号之间的相位差是多少?

A. Zero ✗
零
B. 90 degrees ✓
90度
C. 180 degrees ✗
180度
D. 45 degrees ✗
45度

G7C10. What is an advantage of using I-Q modulation with software-defined radios (SDRs)?
在软件定义无线电（SDR）中使用I-Q调制的优势是什么?

A. The need for high resolution analog-to-digital converters is eliminated ✗
消除了对高分辨率模数转换器的需求
B. All types of modulation can be created with appropriate processing ✓
所有类型的调制都可以通过适当的处理来创建
C. Minimum detectible signal level is reduced ✗
最低可检测信号电平降低
D. Automatic conversion of the signal from digital to analog ✗
信号从数字到模拟的自动转换

G7C11. Which of these functions is performed by software in a software-defined radio (SDR)?
这些功能中的哪一项是由软件定义无线电（SDR）中的软件执行的?

A. Filtering ✗
过滤
B. Detection ✗
侦查
C. Modulation ✗
调制
D. All these choices are correct ✓
所有这些选择都是正确的

G7C12. What is the frequency above which a low-pass filter's output power is less than half the input power?
低通滤波器的输出功率低于输入功率一半的频率是多少?

A. Notch frequency ✗
陷波频率
B. Neper frequency ✗
Neper频率
C. Cutoff frequency ✓
截止频率
D. Rolloff frequency ✗
滚动频率

G7C13. What term specifies a filter's maximum ability to reject signals outside its passband?
什么术语规定了滤波器抑制通带外信号的最大能力?

A. Notch depth ✗
缺口深度
B. Rolloff ✗
滚动
C. Insertion loss ✗
插入损耗
D. Ultimate rejection ✓
最终拒绝

G7C14. The bandwidth of a band-pass filter is measured between what two frequencies?
带通滤波器的带宽是在哪两个频率之间测量的?

A. Upper and lower half-power ✓
上半功率和下半功率
B. Cutoff and rolloff ✗
切割和滚落
C. Pole and zero ✗
极点和零点
D. Image and harmonic ✗
图像和谐波

G8 SIGNALS AND EMISSIONS
信号和排放

G8A Carriers and modulation: AM, FM, and single sideband; modulation envelope; digital modulation; overmodulation; link budgets and link margins
载波和调制：AM、FM和单边带；调制包络；数字调制；过调制；链接预算和链接利润

G8A01. How is direct binary FSK modulation generated?
直接二进制FSK调制是如何产生的?

A. By keying an FM transmitter with a sub-audible tone ✗
用亚音频键控调频发射机
B. By changing an oscillator's frequency directly with a digital control signal ✓
通过直接用数字控制信号改变振荡器的频率
C. By using a transceiver's computer data interface protocol to change frequencies ✗
通过使用收发器的计算机数据接口协议来改变频率
D. By reconfiguring the CW keying input to act as a tone generator ✗
通过重新配置CW键控输入以充当音调生成器

G8A02. What is the name of the process that changes the phase angle of an RF signal to convey information?
改变射频信号相位角以传递信息的过程的名称是什么?

A. Phase convolution ✗
相位卷积
B. Phase modulation ✓
相位调制
C. Phase transformation ✗
相变
D. Phase inversion ✗
相位反转

G8A03. What is the name of the process that changes the instantaneous frequency of an RF wave to convey information?
改变射频波瞬时频率以传递信息的过程的名称是什么?

A. Frequency convolution ✗
频率卷积
B. Frequency transformation ✗
频率变换
C. Frequency conversion ✗
频率转换
D. Frequency modulation ✓
频率调制

G8A04. What emission is produced by a reactance modulator connected to a transmitter RF amplifier stage?
连接到发射机RF放大器级的电抗调制器产生什么发射?

A. Multiplex modulation ✗
多路调制
B. Phase modulation ✓
相位调制
C. Amplitude modulation ✗
振幅调制
D. Pulse modulation ✗
脉冲调制

G8A05. What type of modulation varies the instantaneous power level of the RF signal?
什么类型的调制会改变RF信号的瞬时功率电平?

A. Power modulation ✗
功率调制
B. Phase modulation ✗
相位调制
C. Frequency modulation ✗
频率调制
D. Amplitude modulation ✓
振幅调制

G8A06. Which of the following is characteristic of QPSK31?
以下哪项是QPSK31的特点?

A. It is sideband sensitive ✗
它对边带敏感
B. Its encoding provides error correction ✗
其编码提供纠错功能
C. Its bandwidth is approximately the same as BPSK31 ✗
其带宽与BPSK31大致相同
D. All these choices are correct ✓
所有这些选择都是正确的

G8A07. Which of the following phone emissions uses the narrowest bandwidth?
以下哪种手机发射使用的带宽最窄?

A. Single sideband ✓
单边带
B. Vestigial sideband ✗
残留边带
C. Phase modulation ✗
相位调制
D. Frequency modulation ✗
频率调制

G8A08. Which of the following is an effect of overmodulation?
以下哪项是过调制的影响?

A. Insufficient audio ✗
音频不足
B. Insufficient bandwidth ✗
带宽不足
C. Frequency drift ✗
频率漂移
D. Excessive bandwidth ✓
带宽过大

G8A09. What type of modulation is used by FT8?
FT8使用什么类型的调制?

A. 8-tone frequency shift keying ✓
8音频移键控
B. Vestigial sideband ✗
残留边带
C. Amplitude compressed AM ✗
振幅压缩AM
D. 8-bit direct sequence spread spectrum ✗
8位直接序列扩频

G8A10. What is meant by the term “flat-topping,” when referring to an amplitude-modulated phone signal?
当提到调幅电话信号时，术语“平顶”是什么意思?

A. Signal distortion caused by insufficient collector current ✗
集电极电流不足导致的信号失真
B. The transmitter’s automatic level control (ALC) is properly adjusted ✗
变送器的自动液位控制（ALC）已正确调整
C. Signal distortion caused by excessive drive or speech levels ✓
过度驱动或语音水平导致的信号失真
D. The transmitter’s carrier is properly suppressed ✗
发射器的载波被适当抑制

G8A11. What is the modulation envelope of an AM signal?
AM信号的调制包络是什么?

A. The waveform created by connecting the peak values of the modulated signal ✓
通过连接调制信号的峰值而产生的波形
B. The carrier frequency that contains the signal ✗
包含信号的载波频率
C. Spurious signals that envelop nearby frequencies ✗
包围附近频率的虚假信号
D. The bandwidth of the modulated signal ✗
调制信号的带宽

G8A12. What is QPSK modulation?
什么是QPSK调制?

A. Modulation using quasi-parallel to serial conversion to reduce bandwidth ✗
使用准并行到串行转换的调制以减少带宽
B. Modulation using quadra-pole sideband keying to generate spread spectrum signals ✗
使用四极边带键控产生扩频信号的调制
C. Modulation using Fast Fourier Transforms to generate frequencies at the first, second, third, and fourth harmonics of the carrier frequency to improve noise immunity ✗
使用快速傅立叶变换生成载波频率的一次、二次、三次和四次谐波频率的调制，以提高抗噪性
D. Modulation in which digital data is transmitted using 0-, 90-, 180- and 270-degrees phase shift to represent pairs of bits ✓
使用0、90、180和270度相移来表示比特对来传输数字数据的调制

G8A13. What is a link budget?
什么是链接预算?

A. The financial costs associated with operating a radio link ✗
与运营无线电链路相关的财务成本
B. The sum of antenna gains minus system losses ✗
天线增益减去系统损耗之和
C. The sum of transmit power and antenna gains minus system losses as seen at the receiver ✓
发射功率和天线增益之和减去接收器处的系统损耗
D. The difference between transmit power and receiver sensitivity ✗
发射功率和接收器灵敏度之间的差异

G8A14. What is link margin?
什么是链接边距?

A. The opposite of fade margin ✗
渐变边缘的反面
B. The difference between received power level and minimum required signal level at the input to the receiver ✓
接收器输入端的接收功率电平和最小所需信号电平之间的差值
C. Transmit power minus receiver sensitivity ✗
发射功率减去接收器灵敏度
D. Receiver sensitivity plus 3 dB ✗
接收器灵敏度加3 dB

G8B Frequency changing; bandwidths of various modes; deviation; intermodulation
频率变化；各种模式的带宽；偏离互调

G8B01. Which mixer input is varied or tuned to convert signals of different frequencies to an intermediate frequency (IF)?
改变或调谐哪个混频器输入以将不同频率的信号转换为中频（IF）？

A. Image frequency ✗
图像频率
B. Local oscillator ✓
本地振荡器
C. RF input ✗
射频输入
D. Beat frequency oscillator ✗
拍频振荡器

G8B02. What is the term for interference from a signal at twice the IF frequency from the desired signal?
对于来自所需信号的中频频率两倍的信号的干扰，术语是什么?

A. Quadrature response ✗
正交响应
B. Image response ✓
图像响应
C. Mixer interference ✗
混频器干扰
D. Intermediate interference ✗
中间干扰

G8B03. What is another term for the mixing of two RF signals?
两个射频信号混合的另一个术语是什么?

A. Heterodyning ✓
外差
B. Synthesizing ✗
合成
C. Frequency inversion ✗
频率反转
D. Phase inversion ✗
相位反转

G8B04. What is the stage in a VHF FM transmitter that generates a harmonic of a lower frequency signal to reach the desired operating frequency?
甚高频调频发射机中产生低频信号谐波以达到所需工作频率的阶段是什么?

A. Mixer ✗
搅拌机
B. Reactance modulator ✗
电抗调制器
C. Balanced converter ✗
平衡转换器
D. Multiplier ✓
乘数

G8B05. Which intermodulation products are closest to the original signal frequencies?
哪些互调产物最接近原始信号频率?

A. Second harmonics ✗
二次谐波
B. Even-order ✗
偶数订单
C. Odd-order ✓
奇数顺序
D. Intercept point ✗
拦截点

G8B06. What is the total bandwidth of an FM phone transmission having 5 kHz deviation and 3 kHz modulating frequency?
具有5kHz偏差和3kHz调制频率的调频电话传输的总带宽是多少?

A. 3 kHz ✗
3千赫
B. 5 kHz ✗
5千赫
C. 8 kHz ✗
8千赫
D. 16 kHz ✓
16千赫

G8B07. What is the frequency deviation for a 12.21 MHz reactance modulated oscillator in a 5 kHz deviation, 146.52 MHz FM phone transmitter?
12.21 MHz电抗调制振荡器在5 kHz偏差、146.52 MHz调频电话发射机中的频率偏差是多少?

A. 101.75 Hz ✗
101.75赫兹
B. 416.7 Hz ✓
416.7赫兹
C. 5 kHz ✗
5千赫
D. 60 kHz ✗
60千赫

G8B08. Why is it important to know the duty cycle of the mode you are using when transmitting?
为什么知道传输时使用的模式的占空比很重要?

A. To aid in tuning your transmitter ✗
帮助调整发射器
B. Some modes have high duty cycles that could exceed the transmitter's average power rating ✓
某些模式具有高占空比，可能超过变送器的平均额定功率
C. To allow time for the other station to break in during a transmission ✗
在传输过程中为其他电台留出时间
D. To prevent overmodulation ✗
防止过调制

G8B09. Why is it good to match receiver bandwidth to the bandwidth of the operating mode?
为什么将接收器带宽与操作模式的带宽相匹配是好的?

A. It is required by FCC rules ✗
FCC规则要求
B. It minimizes power consumption in the receiver ✗
它最大限度地减少了接收器的功耗
C. It improves impedance matching of the antenna ✗
它改善了天线的阻抗匹配
D. It results in the best signal-to-noise ratio ✓
它产生了最佳的信噪比

G8B10. What is the relationship between transmitted symbol rate and bandwidth?
传输符号速率和带宽之间的关系是什么?

A. Symbol rate and bandwidth are not related ✗
符号速率和带宽不相关
B. Higher symbol rates require wider bandwidth ✓
更高的符号速率需要更宽的带宽
C. Lower symbol rates require wider bandwidth ✗
较低的符号率需要更宽的带宽
D. Bandwidth is half the symbol rate ✗
带宽是符号速率的一半

G8B11. What combination of a mixer's Local Oscillator (LO) and RF input frequencies is found in the output?
混频器的本地振荡器（LO）和RF输入频率在输出中的组合是什么?

A. The ratio ✗
比率
B. The average ✗
平均值
C. The sum and difference ✓
总和和差额
D. The arithmetic product ✗
算术乘积

G8B12. What process combines two signals in a non-linear circuit to produce unwanted spurious outputs?
是什么过程在非线性电路中组合两个信号来产生不需要的杂散输出?

A. Intermodulation ✓
互调
B. Heterodyning ✗
外差
C. Detection ✗
侦查
D. Rolloff ✗
滚动

G8B13. Which of the following is an odd-order intermodulation product of frequencies F1 and F2?
以下哪个是频率F1和F2的奇数阶互调产物?

A. 5F1-3F2 ✗
B. 3F1-F2 ✗
C. 2F1-F2 ✓
D. All these choices are correct ✗
所有这些选择都是正确的

G8C Digital emission modes
数字发射模式

G8C01. On what band do amateurs share channels with the unlicensed Wi-Fi service?
业余爱好者在哪个频段使用未经许可的Wi-Fi服务共享频道?

A. 432 MHz ✗
432兆赫
B. 902 MHz ✗
902兆赫
C. 2.4 GHz ✓
D. 10.7 GHz ✗
10.7千兆赫

G8C02. Which digital mode is used as a low-power beacon for assessing HF propagation?
哪种数字模式被用作评估HF传播的低功率信标?

A. WSPR ✓
B. MFSK16 ✗
C. PSK31 ✗
D. SSB-SC ✗

G8C03. What part of a packet radio frame contains the routing and handling information?
分组无线电帧的哪个部分包含路由和处理信息?

A. Directory ✗
目录
B. Preamble ✗
序言
C. Header ✓
头球
D. Trailer ✗
拖车

G8C04. Which of the following describes Baudot code?
以下哪一项描述了Baudot代码?

A. A 7-bit code with start, stop, and parity bits ✗
具有起始、停止和奇偶校验位的7位代码
B. A code using error detection and correction ✗
使用错误检测和更正的代码
C. A 5-bit code with additional start and stop bits ✓
具有额外起始和停止位的5位代码
D. A code using SELCAL and LISTEN ✗
使用SELCAL和LISTEN的代码

G8C05. In an ARQ mode, what is meant by a NAK response to a transmitted packet?
在ARQ模式中，对发送的数据包的NAK响应是什么意思?

A. Request retransmission of the packet ✓
请求重传数据包
B. Packet was received without error ✗
收到的数据包没有错误
C. Receiving station connected and ready for transmissions ✗
接收站已连接并准备传输
D. Entire file received correctly ✗
正确接收到整个文件

G8C06. What action results from a failure to exchange information due to excessive transmission attempts when using an ARQ mode?
在使用ARQ模式时，由于过度的传输尝试而导致信息交换失败，会导致什么操作?

A. The checksum overflows ✗
校验和溢出
B. The connection is dropped ✓
连接已断开
C. Packets will be routed incorrectly ✗
数据包将被错误路由
D. Encoding reverts to the default character set ✗
编码恢复为默认字符集

G8C07. Which of the following narrow-band digital modes can receive signals with very low signal-to-noise ratios?
以下哪种窄带数字模式可以接收信噪比非常低的信号?

A. MSK144 ✗
B. FT8 ✓
C. AMTOR ✗
D. MFSK32 ✗

G8C08. Which of the following statements is true about PSK31?
关于PSK31，以下哪项陈述是正确的?

A. Upper case letters are sent with more power ✗
大写字母的发送能力更强
B. Upper case letters use longer Varicode bit sequences and thus slow down transmission ✓
大写字母使用较长的Varicode位序列，从而降低传输速度
C. Error correction is used to ensure accurate message reception ✗
纠错用于确保准确接收消息
D. Higher power is needed as compared to RTTY for similar error rates ✗
对于类似的错误率，与RTTY相比需要更高的功率

G8C09. Which is true of mesh network microwave nodes?
网状网络微波节点的情况如何?

A. Having more nodes increases signal strengths ✗
拥有更多节点可增强信号强度
B. If one node fails, a packet may still reach its target station via an alternate node ✓
如果一个节点发生故障，数据包仍可以通过备用节点到达其目标站
C. Links between two nodes in a network may have different frequencies and bandwidths ✗
网络中两个节点之间的链路可能具有不同的频率和带宽
D. More nodes reduce overall microwave out of band interference ✗
更多的节点减少了整体微波带外干扰

G8C10. How does forward error correction (FEC) allow the receiver to correct data errors?
前向纠错（FEC）如何允许接收机纠正数据错误?

A. By controlling transmitter output power for optimum signal strength ✗
通过控制发射机输出功率以获得最佳信号强度
B. By using the Varicode character set ✗
通过使用Varicode字符集
C. By transmitting redundant information with the data ✓
通过数据传输冗余信息
D. By using a parity bit with each character ✗
通过对每个字符使用奇偶校验位

G8C11. How are the two separate frequencies of a Frequency Shift Keyed (FSK) signal identified?
如何识别频移键控（FSK）信号的两个独立频率?

A. Dot and dash ✗
点划线
B. On and off ✗
打开和关闭
C. High and low ✗
高和低
D. Mark and space ✓
标记和空格

G8C12. Which type of code is used for sending characters in a PSK31 signal?
哪种类型的代码用于发送PSK31信号中的字符?

A. Varicode ✓
B. Viterbi ✗
维特比
C. Volumetric ✗
体积
D. Binary ✗
二进制的

G8C13. What is indicated on a waterfall display by one or more vertical lines on either side of a data mode or RTTY signal?
瀑布式显示器上数据模式或RTTY信号两侧的一条或多条垂直线指示了什么?

A. Long path propagation ✗
长路径传播
B. Backscatter propagation ✗
后向散射传播
C. Insufficient modulation ✗
调制不足
D. Overmodulation ✓
过度调制

G8C14. Which of the following describes a waterfall display?
以下哪项描述瀑布显示?

A. Frequency is horizontal, signal strength is vertical, time is intensity ✗
频率是水平的，信号强度是垂直的，时间是强度
B. Frequency is vertical, signal strength is intensity, time is horizontal ✗
频率是垂直的，信号强度是强度，时间是水平的
C. Frequency is horizontal, signal strength is intensity, time is vertical ✓
频率是水平的，信号强度是强度，时间是垂直的
D. Frequency is vertical, signal strength is horizontal, time is intensity ✗
频率是垂直的，信号强度是水平的，时间是强度

G8C15. What does an FT8 signal report of +3 mean?
FT8信号报告+3意味着什么?

A. The signal is 3 times the noise level of an equivalent SSB signal ✗
该信号是等效SSB信号的噪声电平的3倍
B. The signal is S3 (weak signals) ✗
信号为S3（弱信号）
C. The signal-to-noise ratio is equivalent to +3dB in a 2.5 kHz bandwidth ✓
在2.5 kHz带宽下，信噪比相当于+3dB
D. The signal is 3 dB over S9 ✗
S9上的信号为3 dB

G8C16. Which of the following provide digital voice modes?
以下哪一项提供数字语音模式?

A. WSPR, MFSK16, and EasyPAL ✗
WSPR、MFSK16和EasyPAL
B. FT8, FT4, and FST4 ✗
FT8、FT4和FST4
C. Winlink, PACTOR II, and PACTOR III ✗
Winlink、PACTOR II和PACTOR III
D. DMR, D-STAR, and SystemFusion ✓
DMR、D-STAR和SystemFusion

G9 ANTENNAS AND FEED LINES
天线和馈线

G9A Feed lines: characteristic impedance and attenuation; standing wave ratio (SWR) calculation, measurement, and effects; antenna feed point matching
馈线：特性阻抗和衰减；驻波比（SWR）的计算、测量和影响；天线馈电点匹配

G9A01. Which of the following factors determine the characteristic impedance of a parallel conductor feed line?
以下哪个因素决定了并联导体馈线的特性阻抗?

A. The distance between the centers of the conductors and the radius of the conductors ✓
导体中心与导体半径之间的距离
B. The distance between the centers of the conductors and the length of the line ✗
导线中心之间的距离和线路长度
C. The radius of the conductors and the frequency of the signal ✗
导体的半径和信号的频率
D. The frequency of the signal and the length of the line ✗
信号频率和线路长度

G9A02. What is the relationship between high standing wave ratio (SWR) and transmission line loss?
高驻波比（SWR）与输电线路损耗之间的关系是什么?

A. There is no relationship between transmission line loss and SWR ✗
输电线路损耗与SWR之间没有关系
B. High SWR increases loss in a lossy transmission line ✓
高SWR增加有损传输线的损耗
C. High SWR makes it difficult to measure transmission line loss ✗
高SWR使测量输电线路损耗变得困难
D. High SWR reduces the relative effect of transmission line loss ✗
高SWR降低了输电线路损耗的相对影响

G9A03. What is the nominal characteristic impedance of “window line” transmission line?
“窗口线”传输线的标称特性阻抗是多少?

A. 50 ohms ✗
50欧姆
B. 75 ohms ✗
75欧姆
C. 100 ohms ✗
100欧姆
D. 450 ohms ✓
450欧姆

G9A04. What causes reflected power at an antenna’s feed point?
是什么导致天线馈电点的反射功率?

A. Operating an antenna at its resonant frequency ✗
在谐振频率下操作天线
B. Using more transmitter power than the antenna can handle ✗
使用的发射器功率超过天线的承受能力
C. A difference between feed line impedance and antenna feed point impedance ✓
馈线阻抗和天线馈电点阻抗之间的差异
D. Feeding the antenna with unbalanced feed line ✗
用不平衡馈线给天线馈电

G9A05. How does the attenuation of coaxial cable change with increasing frequency?
同轴电缆的衰减如何随着频率的增加而变化?

A. Attenuation is independent of frequency ✗
衰减与频率无关
B. Attenuation increases ✓
衰减增加
C. Attenuation decreases ✗
衰减降低
D. Attenuation follows Marconi’s Law of Attenuation ✗
衰减遵循马可尼衰减定律

G9A06. In what units is RF feed line loss usually expressed?
射频馈线损耗通常用什么单位表示?

A. Ohms per 1,000 feet ✗
每1000英尺欧姆
B. Decibels per 1,000 feet ✗
每1000英尺分贝
C. Ohms per 100 feet ✗
每100英尺欧姆
D. Decibels per 100 feet ✓
每100英尺分贝

G9A07. What must be done to prevent standing waves on a feed line connected to an antenna?
必须采取什么措施来防止连接到天线的馈线上出现驻波?

A. The antenna feed point must be at DC ground potential ✗
天线馈电点必须处于直流接地电位
B. The feed line must be an odd number of electrical quarter wavelengths long ✗
馈线的长度必须为奇数个四分之一波长
C. The feed line must be an even number of physical half wavelengths long ✗
馈线必须是偶数个物理半波长长
D. The antenna feed point impedance must be matched to the characteristic impedance of the feed line ✓
天线馈电点阻抗必须与馈线的特性阻抗匹配

G9A08. If the SWR on an antenna feed line is 5:1, and a matching network at the transmitter end of the feed line is adjusted to present a 1:1 SWR to the transmitter, what is the resulting SWR on th
如果天线馈线上的SWR为5:1，并且馈线发射机端的匹配网络被调整为向发射机呈现1:1的SWR，那么天线馈线上产生的SWR是多少

A. 1:1 ✗
B. 5:1 ✓
C. Between 1:1 and 5:1 depending on the characteristic impedance of the line ✗
根据线路的特性阻抗，介于1:1和5:1之间
D. Between 1:1 and 5:1 depending on the reflected power at the transmitter ✗
在1:1和5:1之间，取决于发射器的反射功率

G9A09. What standing wave ratio results from connecting a 50-ohm feed line to a 200-ohm resistive load?
将50欧姆馈线连接到200欧姆电阻负载会产生什么驻波比?

A. 4:1 ✓
B. 1:4 ✗
C. 2:1 ✗
D. 1:2 ✗

G9A10. What standing wave ratio results from connecting a 50-ohm feed line to a 10-ohm resistive load?
将50欧姆馈线连接到10欧姆电阻负载会产生什么驻波比?

A. 2:1 ✗
B. 1:2 ✗
C. 1:5 ✗
D. 5:1 ✓

G9A11. What is the effect of transmission line loss on SWR measured at the input to the line?
输电线路损耗对线路输入处测得的SWR的影响是什么?

A. Higher loss reduces SWR measured at the input to the line ✓
较高的损耗降低了线路输入处测得的SWR
B. Higher loss increases SWR measured at the input to the line ✗
较高的损耗增加了线路输入处测得的SWR
C. Higher loss increases the accuracy of SWR measured at the input to the line ✗
更高的损耗增加了在线路输入处测量的SWR的精度
D. Transmission line loss does not affect the SWR measurement ✗
输电线路损耗不影响SWR测量

G9B Basic dipole and monopole antennas
基本偶极和单极天线

G9B01. What is a characteristic of a random-wire HF antenna connected directly to the transmitter?
直接连接到发射机的随机线HF天线的特性是什么?

A. It must be longer than 1 wavelength ✗
它必须长于1个波长
B. Station equipment may carry significant RF current ✓
台站设备可能携带大量射频电流
C. It produces only vertically polarized radiation ✗
它只产生垂直偏振辐射
D. It is more effective on the lower HF bands than on the higher bands ✗
它在低频带上比在高频带上更有效

G9B02. Which of the following is a common way to adjust the feed point impedance of an elevated quarter-wave ground-plane vertical antenna to be approximately 50 ohms?
以下哪项是将四分之一波接地平面垂直天线的馈电点阻抗调整为约50欧姆的常用方法?

A. Slope the radials upward ✗
将半径向上倾斜
B. Slope the radials downward ✓
将半径向下倾斜
C. Lengthen the radials beyond one wavelength ✗
将半径延长到一个波长之外
D. Coil the radials ✗
盘绕径向

G9B03. Which of the following best describes the radiation pattern of a quarter-wave ground-plane vertical antenna?
以下哪项最能描述四分之一波地平面垂直天线的辐射方向图?

A. Bi-directional in azimuth ✗
双向方位
B. Isotropic ✗
各向同性
C. Hemispherical ✗
半球形
D. Omnidirectional in azimuth ✓
方位角全向

G9B04. What is the radiation pattern of a dipole antenna in free space in a plane containing the conductor?
在包含导体的平面中，偶极天线在自由空间中的辐射方向图是什么?

A. It is a figure-eight at right angles to the antenna ✓
它是一个与天线成直角的八字形
B. It is a figure-eight off both ends of the antenna ✗
它是天线两端的八字形
C. It is a circle (equal radiation in all directions) ✗
它是一个圆（所有方向的辐射相等）
D. It has a pair of lobes on one side of the antenna and a single lobe on the other side ✗
它在天线的一侧有一对波瓣，在另一侧有一个波瓣

G9B05. How does antenna height affect the azimuthal radiation pattern of a horizontal dipole HF antenna at elevation angles higher than about 45 degrees?
天线高度如何影响仰角高于约45度的水平偶极HF天线的方位角辐射方向图?

A. If the antenna is too high, the pattern becomes unpredictable ✗
如果天线太高，方向图将变得不可预测
B. Antenna height has no effect on the pattern ✗
天线高度对图案没有影响
C. If the antenna is less than 1/2 wavelength high, the azimuthal pattern is almost omnidirectional ✓
如果天线的波长小于1/2，则方位图几乎是全向的
D. If the antenna is less than 1/2 wavelength high, radiation off the ends of the wire is eliminated ✗
如果天线的波长小于1/2，则会消除导线末端的辐射

G9B06. Where should the radial wires of a ground-mounted vertical antenna system be placed?
地面安装的垂直天线系统的放射线应该放在哪里?

A. As high as possible above the ground ✗
尽可能高出地面
B. Parallel to the antenna element ✗
与天线元件平行
C. On the surface or buried a few inches below the ground ✓
在地表或埋在地下几英寸处
D. At the center of the antenna ✗
在天线的中心

G9B07. How does the feed point impedance of a horizontal 1/2 wave dipole antenna change as the antenna height is reduced to 1/10 wavelength above ground?
当天线高度降低到地面以上1/10波长时，水平1/2波偶极天线的馈电点阻抗如何变化?

A. It steadily increases ✗
它稳步增加
B. It steadily decreases ✓
它稳步下降
C. It peaks at about 1/8 wavelength above ground ✗
它在地面上大约1/8波长处达到峰值
D. It is unaffected by the height above ground ✗
它不受地上高度的影响

G9B08. How does the feed point impedance of a 1/2 wave dipole change as the feed point is moved from the center toward the ends?
当馈电点从中心向末端移动时，1/2波偶极子的馈电点阻抗如何变化?

A. It steadily increases ✓
它稳步增加
B. It steadily decreases ✗
它稳步下降
C. It peaks at about 1/8 wavelength from the end ✗
它在距离末端约1/8波长处达到峰值
D. It is unaffected by the location of the feed point ✗
它不受馈电点位置的影响

G9B09. Which of the following is an advantage of using a horizontally polarized as compared to a vertically polarized HF antenna?
与垂直极化HF天线相比，以下哪项是使用水平极化天线的优势?

A. Lower ground losses ✓
降低地面损耗
B. Lower feed point impedance ✗
较低的馈电点阻抗
C. Shorter radials ✗
较短半径
D. Lower radiation resistance ✗
较低的抗辐射性

G9B10. What is the approximate length for a 1/2 wave dipole antenna cut for 14.250 MHz?
切割为14.250MHz的1/2波偶极天线的大致长度是多少?

A. 8 feet ✗
8英尺
B. 16 feet ✗
16英尺
C. 24 feet ✗
24英尺
D. 33 feet ✓
33英尺

G9B11. What is the approximate length for a 1/2 wave dipole antenna cut for 3.550 MHz?
切割为3.550MHz的1/2波偶极天线的大致长度是多少?

A. 42 feet ✗
42英尺
B. 84 feet ✗
84英尺
C. 132 feet ✓
132英尺
D. 263 feet ✗
263英尺

G9B12. What is the approximate length for a 1/4 wave monopole antenna cut for 28.5 MHz?
切割28.5MHz的1/4波单极天线的大致长度是多少?

A. 8 feet ✓
8英尺
B. 11 feet ✗
11英尺
C. 16 feet ✗
16英尺
D. 21 feet ✗
21英尺

G9C Directional antennas
定向天线

G9C01. Which of the following would increase the bandwidth of a Yagi antenna?
以下哪项会增加八木天线的带宽?

A. Larger-diameter elements ✓
较大直径元件
B. Closer element spacing ✗
更紧密的元素间距
C. Loading coils in series with the element ✗
加载与元件串联的线圈
D. Tapered-diameter elements ✗
锥形直径元件

G9C02. What is the approximate length of the driven element of a Yagi antenna?
八木天线的驱动元件的大致长度是多少?

A. 1/4 wavelength ✗
1/4波长
B. 1/2 wavelength ✓
1/2波长
C. 3/4 wavelength ✗
3/4波长
D. 1 wavelength ✗
1波长

G9C03. How do the lengths of a three-element Yagi reflector and director compare to that of the driven element?
三元件八木反射器和导向器的长度与被驱动元件的长度相比如何?

A. The reflector is longer, and the director is shorter ✓
反射器更长，导向器更短
B. The reflector is shorter, and the director is longer ✗
反射器更短，指向器更长
C. They are all the same length ✗
它们的长度都一样
D. Relative length depends on the frequency of operation ✗
相对长度取决于操作频率

G9C04. How does antenna gain in dBi compare to gain stated in dBd for the same antenna?
对于同一天线，以dBi表示的天线增益与以dBd表示的增益相比如何?

A. Gain in dBi is 2.15 dB lower ✗
增益（dBi）降低2.15 dB
B. Gain in dBi is 2.15 dB higher ✓
增益（dBi）高2.15 dB
C. Gain in dBd is 1.25 dBd lower ✗
增益（dBd）降低1.25 dBd
D. Gain in dBd is 1.25 dBd higher ✗
增益（dBd）高1.25 dBd

G9C05. What is the primary effect of increasing boom length and adding directors to a Yagi antenna?
增加吊杆长度和在八木天线上添加导向器的主要效果是什么?

A. Gain increases ✓
增益增加
B. Beamwidth increases ✗
波束宽度增加
C. Front-to-back ratio decreases ✗
前后比例降低
D. Resonant frequency is lower ✗
谐振频率较低

G9C07. What does “front-to-back ratio” mean in reference to a Yagi antenna?
八木天线的“前后比”是什么意思?

A. The number of directors versus the number of reflectors ✗
导向器的数量与反射器的数量
B. The relative position of the driven element with respect to the reflectors and directors ✗
从动元件相对于反射器和导向器的相对位置
C. The power radiated in the major lobe compared to that in the opposite direction ✓
主瓣辐射的功率与相反方向的功率相比
D. The ratio of forward gain to dipole gain ✗
正向增益与偶极增益之比

G9C08. What is meant by the “main lobe” of a directive antenna?
定向天线的“主瓣”是什么意思?

A. The magnitude of the maximum vertical angle of radiation ✗
最大垂直辐射角的大小
B. The point of maximum current in a radiating antenna element ✗
辐射天线元件中的最大电流点
C. The maximum voltage standing wave point on a radiating element ✗
辐射元件上的最大电压驻波点
D. The direction of maximum radiated field strength from the antenna ✓
天线最大辐射场强的方向

G9C09. In free space, how does the gain of two three-element, horizontally polarized Yagi antennas spaced vertically 1/2 wavelength apart typically compare to the gain of a single three-element Yag
在自由空间中，垂直间隔1/2波长的两个三元件、水平极化八木天线的增益通常与单个三元件八木的增益相比如何

A. Approximately 1.5 dB higher ✗
大约高1.5 dB
B. Approximately 3 dB higher ✓
大约高出3 dB
C. Approximately 6 dB higher ✗
大约高出6 dB
D. Approximately 9 dB higher ✗
高出约9 dB

G9C10. Which of the following can be adjusted to optimize forward gain, front-to-back ratio, or SWR bandwidth of a Yagi antenna?
以下哪项可以调整以优化八木天线的前向增益、前后比或SWR带宽?

A. The physical length of the boom ✗
动臂的物理长度
B. The number of elements on the boom ✗
动臂上元件的数量
C. The spacing of each element along the boom ✗
每个元件沿吊臂的间距
D. All these choices are correct ✓
所有这些选择都是正确的

G9C11. What is a beta or hairpin match?
什么是测试版或发夹匹配?

A. A shorted transmission line stub placed at the feed point of a Yagi antenna to provide impedance matching ✓
位于八木天线馈电点的短路传输线短截线，用于提供阻抗匹配
B. A 1/4 wavelength section of 75-ohm coax in series with the feed point of a Yagi to provide impedance matching ✗
75欧姆同轴电缆的1/4波长部分与八木的馈电点串联，以提供阻抗匹配
C. A series capacitor selected to cancel the inductive reactance of a folded dipole antenna ✗
一种串联电容器，用于抵消折叠偶极天线的电感电抗
D. A section of 300-ohm twin-lead transmission line used to match a folded dipole antenna ✗
一段300欧姆的双引线传输线，用于匹配折叠偶极天线

G9C12. Which of the following is a characteristic of using a gamma match with a Yagi antenna?
以下哪项是使用八木天线的伽马匹配的特性?

A. It does not require the driven element to be insulated from the boom ✓
它不要求从动元件与动臂绝缘
B. It does not require any inductors or capacitors ✗
它不需要任何电感器或电容器
C. It is useful for matching multiband antennas ✗
它适用于匹配多频带天线
D. All these choices are correct ✗
所有这些选择都是正确的

G9D Specialized antenna types and applications
专用天线类型和应用

G9D01. Which of the following antenna types will be most effective as a near vertical incidence skywave (NVIS) antenna for short-skip communications on 40 meters during the day?
以下哪种天线类型作为近垂直入射天波（NVIS）天线在白天40米的短跳通信中最有效?

A. A horizontal dipole placed between 1/10 and 1/4 wavelength above the ground ✓
放置在地面上波长1/10到1/4之间的水平偶极子
B. A vertical antenna placed between 1/4 and 1/2 wavelength above the ground ✗
一个垂直天线，放置在地面上1/4到1/2波长之间
C. A horizontal dipole placed at approximately 1/2 wavelength above the ground ✗
放置在地面上方大约1/2波长的水平偶极子
D. A vertical dipole placed at approximately 1/2 wavelength above the ground ✗
放置在地面上方大约1/2波长的垂直偶极子

G9D02. What is the feed point impedance of an end-fed half-wave antenna?
端馈半波天线的馈电点阻抗是多少?

A. Very low ✗
非常低
B. Approximately 50 ohms ✗
大约50欧姆
C. Approximately 300 ohms ✗
大约300欧姆
D. Very high ✓
非常高

G9D03. In which direction is the maximum radiation from a VHF/UHF “halo” antenna?
甚高频/超高频“光环”天线的最大辐射方向是哪个?

A. Broadside to the plane of the halo ✗
光晕平面的宽边
B. Opposite the feed point ✗
馈电点对面
C. Omnidirectional in the plane of the halo ✓
光晕平面中的全向
D. On the same side as the feed point ✗
与馈电点在同一侧

G9D04. What is the primary function of antenna traps?
天线陷波器的主要功能是什么?

A. To enable multiband operation ✓
启用多频带操作
B. To notch spurious frequencies ✗
陷波杂散频率
C. To provide balanced feed point impedance ✗
提供平衡的馈电点阻抗
D. To prevent out-of-band operation ✗
防止带外操作

G9D05. What is an advantage of vertically stacking horizontally polarized Yagi antennas?
垂直堆叠水平极化八木天线的优点是什么?

A. It allows quick selection of vertical or horizontal polarization ✗
它允许快速选择垂直或水平极化
B. It allows simultaneous vertical and horizontal polarization ✗
它允许同时进行垂直和水平极化
C. It narrows the main lobe in azimuth ✗
它使主瓣的方位角变窄
D. It narrows the main lobe in elevation ✓
它使主瓣的仰角变窄

G9D06. Which of the following is an advantage of a log-periodic antenna?
以下哪项是对数周期天线的优势?

A. Wide bandwidth ✓
宽带宽
B. Higher gain per element than a Yagi antenna ✗
每个元件的增益高于八木天线
C. Harmonic suppression ✗
谐波抑制
D. Polarization diversity ✗
极化分集

G9D07. Which of the following describes a log-periodic antenna?
以下哪项描述对数周期天线?

A. Element length and spacing vary logarithmically along the boom ✓
元件长度和间距沿吊臂呈对数变化
B. Impedance varies periodically as a function of frequency ✗
阻抗作为频率的函数周期性变化
C. Gain varies logarithmically as a function of frequency ✗
增益随频率呈对数变化
D. SWR varies periodically as a function of boom length ✗
SWR作为动臂长度的函数周期性变化

G9D08. How does a “screwdriver” mobile antenna adjust its feed point impedance?
“螺丝刀”移动天线是如何调整馈电点阻抗的?

A. By varying its body capacitance ✗
通过改变其体电容
B. By varying the base loading inductance ✓
通过改变基础负载电感
C. By extending and retracting the whip ✗
通过伸缩鞭子
D. By deploying a capacitance hat ✗
通过部署电容帽

G9D09. What is the primary use of a Beverage antenna?
饮料天线的主要用途是什么?

A. Directional receiving for MF and low HF bands ✓
中频和低频带的定向接收
B. Directional transmitting for low HF bands ✗
低频带定向发射
C. Portable direction finding at higher HF frequencies ✗
高频便携式测向
D. Portable direction finding at lower HF frequencies ✗
较低HF频率下的便携式测向

G9D10. In which direction or directions does an electrically small loop (less than 1/10 wavelength in circumference) have nulls in its radiation pattern?
一个电气小回路（周长小于1/10波长）的辐射方向图在哪个方向上有零点?

A. In the plane of the loop ✗
在回路平面内
B. Broadside to the loop ✓
环路外侧
C. Broadside and in the plane of the loop ✗
外侧和环路平面内
D. Electrically small loops are omnidirectional ✗
电动小环路是全向的

G9D11. Which of the following is a disadvantage of multiband antennas?
以下哪项是多频带天线的缺点?

A. They present low impedance on all design frequencies ✗
它们在所有设计频率上都呈现低阻抗
B. They must be used with an antenna tuner ✗
它们必须与天线调谐器一起使用
C. They must be fed with open wire line ✗
它们必须用开放的电线供电
D. They have poor harmonic rejection ✓
它们的谐波抑制能力较差

G9D12. What is the common name of a dipole with a single central support?
具有单个中心支撑的偶极子的通用名称是什么?

A. Inverted V ✓
倒V
B. Inverted L ✗
倒置L
C. Sloper ✗
斜坡
D. Lazy H ✗
懒惰的H

G0 ELECTRICAL AND RF SAFETY
电气和射频安全

G0A RF safety principles, rules, and guidelines; routine station evaluation
射频安全原则、规则和指南；例行台站评估

G0A01. What is one way that RF energy can affect human body tissue?
射频能量影响人体组织的一种方式是什么?

A. It heats body tissue ✓
它加热身体组织
B. It causes radiation poisoning ✗
它会导致辐射中毒
C. It causes the blood count to reach a dangerously low level ✗
它会导致血液计数达到危险的低水平
D. It cools body tissue ✗
它能冷却身体组织

G0A02. Which of the following is used to determine RF exposure from a transmitted signal?
以下哪项用于确定发射信号的射频暴露?

A. Its duty cycle ✗
其工作循环
B. Its frequency ✗
其频率
C. Its power density ✗
其功率密度
D. All these choices are correct ✓
所有这些选择都是正确的

G0A03. How can you determine that your station complies with FCC RF exposure regulations?
您如何确定您的电台符合FCC射频暴露规定?

A. By calculation based on FCC OET Bulletin 65 ✗
根据FCC OET公告65进行计算
B. By calculation based on computer modeling ✗
通过基于计算机建模的计算
C. By measurement of field strength using calibrated equipment ✗
通过使用校准设备测量场强
D. All these choices are correct ✓
所有这些选择都是正确的

G0A04. What does “time averaging” mean when evaluating RF radiation exposure?
在评估射频辐射暴露时，“时间平均”是什么意思?

A. The average amount of power developed by the transmitter over a specific 24-hour period ✗
发射器在特定24小时内产生的平均功率
B. The average time it takes RF radiation to have any long-term effect on the body ✗
射频辐射对身体产生任何长期影响所需的平均时间
C. The total time of the exposure ✗
暴露的总时间
D. The total RF exposure averaged over a certain period ✓
某段时间内的平均总射频暴露量

G0A05. What must you do if an evaluation of your station shows that the RF energy radiated by your station exceeds permissible limits for possible human absorption?
如果对您的电台的评估显示，您的电台辐射的射频能量超过了人体可能吸收的允许极限，您必须怎么办?

A. Take action to prevent human exposure to the excessive RF fields ✓
采取措施防止人体暴露在过大的射频场中
B. File an Environmental Impact Statement (EIS-97) with the FCC ✗
向FCC提交环境影响声明（EIS-97）
C. Secure written permission from your neighbors to operate above the controlled MPE limits ✗
获得邻居的书面许可，以便在受控MPE限制之上进行操作
D. All these choices are correct ✗
所有这些选择都是正确的

G0A06. What must you do if your station fails to meet the FCC RF exposure exemption criteria?
如果您的电台不符合FCC射频暴露豁免标准，您必须怎么办?

A. Perform an RF Exposure Evaluation in accordance with FCC OET Bulletin 65 ✓
根据FCC OET公告65进行射频暴露评估
B. Contact the FCC for permission to transmit ✗
联系FCC以获得传输许可
C. Perform an RF exposure evaluation in accordance with World Meteorological Organization guidelines ✗
根据世界气象组织指南进行射频暴露评估
D. Use an FCC-approved band-pass filter ✗
使用FCC批准的带通滤波器

G0A07. What is the effect of modulation duty cycle on RF exposure?
调制占空比对射频暴露的影响是什么?

A. A lower duty cycle permits greater power levels to be transmitted ✓
较低的占空比允许传输更大的功率电平
B. A higher duty cycle permits greater power levels to be transmitted ✗
更高的占空比允许传输更大的功率电平
C. Low duty cycle transmitters are exempt from RF exposure evaluation requirements ✗
低占空比变送器不受射频暴露评估要求的约束
D. High duty cycle transmitters are exempt from RF exposure requirements ✗
高占空比变送器不受射频暴露要求的约束

G0A08. Which of the following steps must an amateur operator take to ensure compliance with RF safety regulations?
业余操作员必须采取以下哪些步骤来确保遵守射频安全法规?

A. Post a copy of FCC Part 97.13 in the station ✗
在电台张贴FCC第97.13部分的副本
B. Notify neighbors within a 100-foot radius of the antenna of the existence of the station and power levels ✗
通知天线半径100英尺内的邻居是否存在基站和功率水平
C. Perform a routine RF exposure evaluation and prevent access to any identified high exposure areas ✓
进行常规射频暴露评估，并防止进入任何已识别的高暴露区域
D. All these choices are correct ✗
所有这些选择都是正确的

G0A09. What type of instrument can be used to accurately measure an RF field strength?
什么类型的仪器可以用来精确测量射频场强?

A. A receiver with digital signal processing (DSP) noise reduction ✗
一种具有数字信号处理（DSP）降噪功能的接收机
B. A calibrated field strength meter with a calibrated antenna ✓
带校准天线的校准场强计
C. An SWR meter with a peak-reading function ✗
具有峰值读取功能的SWR仪表
D. An oscilloscope with a high-stability crystal marker generator ✗
具有高稳定性晶体标记发生器的示波器

G0A10. What should be done if evaluation shows that a neighbor might experience more than the allowable limit of RF exposure from the main lobe of a directional antenna?
如果评估显示邻居可能经历的定向天线主瓣射频暴露超过允许极限，该怎么办?

A. Change to a non-polarized antenna with higher gain ✗
改用增益更高的非极化天线
B. Use an antenna with a higher front-to-back ratio ✗
使用前后比更高的天线
C. Take precautions to ensure that the antenna cannot be pointed in their direction when they are present ✓
采取预防措施，确保天线出现时不会指向其方向
D. All these choices are correct ✗
所有这些选择都是正确的

G0A11. What precaution should be taken if you install an indoor transmitting antenna?
如果安装室内发射天线，应采取什么预防措施?

A. Locate the antenna close to your operating position to minimize feed-line radiation ✗
将天线放置在靠近操作位置的位置，以最大限度地减少馈线辐射
B. Position the antenna along the edge of a wall to reduce parasitic radiation ✗
沿墙壁边缘放置天线，以减少寄生辐射
C. Make sure that MPE limits are not exceeded in occupied areas ✓
确保占用区域内不超过MPE限制
D. Make sure the antenna is properly shielded ✗
确保天线被正确屏蔽

G0A12. What stations are subject to the FCC rules on RF exposure?
哪些电台需要遵守FCC关于射频暴露的规定?

A. All commercial stations; amateur radio stations are exempt ✗
所有商业电台；业余无线电台除外
B. Only stations with antennas lower than one wavelength above the ground ✗
仅限天线高于地面一个波长的电台
C. Only stations transmitting more than 500 watts PEP ✗
只有发射功率超过500瓦PEP的电台
D. All stations with a time-averaged transmission of more than one milliwatt ✓
时间平均传输量超过1毫瓦的所有电台

G0B Station safety: electrical shock, grounding, fusing, interlocks, and wiring; antenna and tower safety
车站安全：触电、接地、熔断、联锁和接线；天线和塔架安全

G0B01. Which wire or wires in a four-conductor 240 VAC circuit should be attached to fuses or circuit breakers?
四导线240 VAC电路中的哪根或哪根电线应连接到保险丝或断路器?

A. Only the hot wires ✓
只有火线
B. Only the neutral wire ✗
只有中性线
C. Only the ground wire ✗
仅接地线
D. All wires ✗
所有电线

G0B02. According to the National Electrical Code, what is the minimum wire size that may be used safely for wiring with a 20-ampere circuit breaker?
根据《国家电气规范》，使用20安培断路器进行接线时，可以安全使用的最小导线尺寸是多少?

A. AWG number 20 ✗
AWG编号20
B. AWG number 16 ✗
AWG编号16
C. AWG number 12 ✓
AWG编号12
D. AWG number 8 ✗
AWG编号8

G0B03. Which size of fuse or circuit breaker would be appropriate to use with a circuit that uses AWG number 14 wiring?
哪种尺寸的保险丝或断路器适合与使用AWG 14号接线的电路一起使用?

A. 30 amperes ✗
30安培
B. 25 amperes ✗
25安培
C. 20 amperes ✗
20安培
D. 15 amperes ✓
15安培

G0B04. Where should the station's lightning protection ground system be located?
车站的防雷接地系统应位于何处?

A. As close to the station equipment as possible ✗
尽可能靠近台站设备
B. Outside the building ✓
大楼外
C. Next to the closest power pole ✗
最近的电线杆旁边
D. Parallel to the water supply line ✗
与供水管线平行

G0B05. Which of the following conditions will cause a ground fault circuit interrupter (GFCI) to disconnect AC power?
以下哪种情况会导致接地故障断路器（GFCI）断开交流电源?

A. Current flowing from one or more of the hot wires to the neutral wire ✗
从一根或多根火线流向中性线的电流
B. Current flowing from one or more of the hot wires directly to ground ✓
从一根或多根火线直接流到地的电流
C. Overvoltage on the hot wires ✗
火线上的过电压
D. All these choices are correct ✗
所有这些选择都是正确的

G0B06. Which of the following is covered by the National Electrical Code?
国家电气规范涵盖以下哪一项?

A. Acceptable bandwidth limits ✗
可接受的带宽限制
B. Acceptable modulation limits ✗
可接受的调制限值
C. Electrical safety of the station ✓
台站电气安全
D. RF exposure limits of the human body ✗
人体射频暴露限值

G0B07. Which of these choices should be observed when climbing a tower using a safety harness?
使用安全带攀爬塔架时，应遵守以下哪些选择?

A. Always hold on to the tower with one hand ✗
永远用一只手抓住塔
B. Confirm that the harness is rated for the weight of the climber and that it is within its allowable service life ✓
确认安全带的额定重量适合攀爬者，并且在其允许的使用寿命内
C. Ensure that all heavy tools are securely fastened to the harness ✗
确保所有重型工具都牢固固定在线束上
D. All these choices are correct ✗
所有这些选择都是正确的

G0B08. What should be done before climbing a tower that supports electrically powered devices?
在爬上支持电力设备的塔之前应该做什么?

A. Notify the electric company that a person will be working on the tower ✗
通知电力公司将有人在塔架上工作
B. Make sure all circuits that supply power to the tower are locked out and tagged ✓
确保为风塔供电的所有电路都已锁定并贴上标签
C. Unground the base of the tower ✗
解开塔基
D. All these choices are correct ✗
所有这些选择都是正确的

G0B09. Which of the following is true of an emergency generator installation?
以下哪项适用于应急发电机安装?

A. The generator should be operated in a well-ventilated area ✓
发电机应在通风良好的区域运行
B. The generator must be insulated from ground ✗
发电机必须与地面绝缘
C. Fuel should be stored near the generator for rapid refueling in case of an emergency ✗
燃料应储存在发电机附近，以便在紧急情况下快速加油
D. All these choices are correct ✗
所有这些选择都是正确的

G0B10. Which of the following is a danger from lead-tin solder?
以下哪项是铅锡焊料的危险?

A. Lead can contaminate food if hands are not washed carefully after handling the solder ✓
如果处理焊料后不小心洗手，铅会污染食物
B. High voltages can cause lead-tin solder to disintegrate suddenly ✗
高电压会导致铅锡焊料突然分解
C. Tin in the solder can “cold flow,” causing shorts in the circuit ✗
焊料中的锡会“冷流”，导致电路短路
D. RF energy can convert the lead into a poisonous gas ✗
射频能量可以将铅转化为有毒气体

G0B11. Which of the following is required for lightning protection ground rods?
防雷接地棒需要下列哪一项?

A. They must be bonded to all buried water and gas lines ✗
它们必须连接到所有埋地的水和天然气管线
B. Bends in ground wires must be made as close as possible to a right angle ✗
接地线的弯曲必须尽可能接近直角
C. Lightning grounds must be connected to all ungrounded wiring ✗
防雷接地必须连接到所有未接地线路
D. They must be bonded together with all other grounds ✓
它们必须与所有其他接地连接在一起

G0B12. What is the purpose of a power supply interlock?
电源联锁的目的是什么?

A. To prevent unauthorized changes to the circuit that would void the manufacturer's warranty ✗
防止对电路进行未经授权的更改，从而使制造商的保修失效
B. To shut down the unit if it becomes too hot ✗
如果温度过高，关闭机组
C. To ensure that dangerous voltages are removed if the cabinet is opened ✓
确保在机柜打开时消除危险电压
D. To shut off the power supply if too much voltage is produced ✗
如果产生过多电压，则关闭电源

G0B13. Where should lightning arrestors be located?
避雷器应该放在哪里?

A. Where the feed lines enter the building ✓
馈线进入建筑物的位置
B. On the antenna, opposite the feed point ✗
在天线上，与馈电点相对
C. In series with each ground lead ✗
与每个接地导线串联
D. At the closest power pole ground electrode ✗
在最近的电源极接地电极处