Section 3.2

G3A06 (D)
What is a geomagnetic storm?
A. A sudden drop in the solar flux index
B. A thunderstorm that affects radio propagation
C. Ripples in the ionosphere
D. A temporary disturbance in Earth's magnetosphere
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G3A08 (B)
Which of the following effects can a geomagnetic storm have on radio propagation?
A. Improved high-latitude HF propagation
B. Degraded high-latitude HF propagation
C. Improved ground wave propagation
D. Degraded ground wave propagation
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G3A09 (A)
What benefit can high geomagnetic activity have on radio communications?
A. Auroras that can reflect VHF signals
B. Higher signal strength for HF signals passing through the polar regions
C. Improved HF long path propagation
D. Reduced long delayed echoes
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G3A12 (B)
What does the K-index indicate?
A. The relative position of sunspots on the surface of the sun
B. The short-term stability of Earth's magnetic field
C. The stability of the sun's magnetic field
D. The solar radio flux at Boulder, Colorado
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G3A13 (C)
What does the A-index indicate?
A. The relative position of sunspots on the surface of the sun
B. The amount of polarization of the sun's electric field
C. The long-term stability of Earth's geomagnetic field
D. The solar radio flux at Boulder, Colorado
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G3B02 (D)
What factors affect the MUF?
A. Path distance and location
B. Time of day and season
C. Solar radiation and ionospheric disturbances
D. All these choices are correct
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G3B05 (A)
What usually happens to radio waves with frequencies below the MUF and above the LUF when they are sent into the ionosphere?
A. They are bent back to Earth
B. They pass through the ionosphere
C. They are amplified by interaction with the ionosphere

D. They are bent and trapped in the ionosphere to circle Earth
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G3B06 (C)
What usually happens to radio waves with frequencies below the LUF?
A. They are bent back to Earth
B. They pass through the ionosphere
C. They are completely absorbed by the ionosphere
D. They are bent and trapped in the ionosphere to circle Earth
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G3B07 (A)
What does LUF stand for?
A. The Lowest Usable Frequency for communications between two points
B. The Longest Universal Function for communications between two points
C. The Lowest Usable Frequency during a 24-hour period
D. The Longest Universal Function during a 24-hour period
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G3B08 (B)
What does MUF stand for?
A. The Minimum Usable Frequency for communications between two points
B. The Maximum Usable Frequency for communications between two points
C. The Minimum Usable Frequency during a 24-hour period
D. The Maximum Usable Frequency during a 24-hour period
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G3B11 (A)
What happens to HF propagation when the LUF exceeds the MUF?
A. No HF radio frequency will support ordinary skywave communications over the path
B. HF communications over the path are enhanced
C. Double hop propagation along the path is more common
D. Propagation over the path on all HF frequencies is enhanced
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G3C01 (A)
Which ionospheric layer is closest to the surface of Earth?
A. The D layer
B. The E layer
C. The F1 layer
D. The F2 layer
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G3C02 (A)
Where on Earth do ionospheric layers reach their maximum height?
A. Where the sun is overhead
B. Where the sun is on the opposite side of Earth
C. Where the sun is rising
D. Where the sun has just set
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G3C03 (C)
Why is the F2 region mainly responsible for the longest distance radio wave propagation?
A. Because it is the densest ionospheric layer
B. Because of the Doppler effect

C. Because it is the highest ionospheric region
D. Because of meteor trails at that level
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G3C04 (D)
What does the term “critical angle” mean, as used in radio wave propagation?
A. The long path azimuth of a distant station
B. The short path azimuth of a distant station
C. The lowest takeoff angle that will return a radio wave to Earth under specific ionospheric conditions
D. The highest takeoff angle that will return a radio wave to Earth under specific ionospheric conditions
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G3C11 (D)
Which ionospheric layer is the most absorbent of long skip signals during daylight hours on frequencies below 10 MHz?
A. The F2 layer
B. The F1 layer
C. The E layer
D. The D layer
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