

**GEOGRAPHIC INFORMATION SYSTEMS  
GEOGRAPHIC INFORMATION CENTER  
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**\*\*\* EXAMINATION \*\*\***

**DESIGN AND DEVELOPMENT OF AN UP-LINK ENVIRONMENTAL MONITOR**

1. **Two units designed to fulfill the requirements of the program:**
  - a) are the Uplink Actuator Receiver and the Monitor Display
  - b) are the Uplink Display and the Monitor Actuator Receiver
  - c) are the Uplink Actuator Display and the Monitor Receiver
  - d) none of the above
  
2. **Two basic functions to facilitate system operation are**
  - a) performed by the Monitor Display
  - b) performed by the Uplink Actuator Receiver
  - c) performed by the Uplink Actuator Display
  - d) performed by the Monitor Receiver
  
3. **The input sensitivity of the receiver was chosen to be:**
  - a) 5 microvolts
  - b) 10 microvolts
  - c) 15 microvolts
  - d) 20 microvolts
  
4. **The Uplink Actuator Receiver was designed for over:**
  - a) 50 dB of dynamic range
  - b) 60 dB of dynamic range
  - c) 70 dB of dynamic range
  - d) 80 dB of dynamic range
  
5. **This receiver was designed to operate from:**
  - a) 0 degrees to +40 degrees Celsius
  - b) -5 degrees to +45 degrees Celsius
  - c) -10 degrees to +50 degrees Celsius
  - d) -15 degrees to +60 degrees Celsius
  
6. **These receivers reject Out-of-band signals by the:**
  - a) 690 Hz bandpass filter
  - b) 790 Hz bandpass filter
  - c) 890 Hz bandpass filter
  - d) 990 Hz bandpass filter

7. **If the signal strength exceeds a pre-set threshold,**
  - a) the signaling line goes high
  - b) the signaling line goes low
  - c) the signal is blocked
  - d) none of the above
  
8. **The Receiver Selectivity specifications for the Receiver:**
  - a) is 10 dB rejection at 940 and 1000 Hz
  - b) is 20 dB rejection at 960 and 1020 Hz
  - c) is 30 dB rejection at 980 and 1040 Hz
  - d) is 40 dB rejection at 1000 and 1060 Hz
  
9. **The operating Voltage of the Uplink Actuator Receiver is:**
  - a) 18 to 24 volts
  - b) 20 to 26 volts
  - c) 22 to 28 volts
  - d) 24 to 30 volts
  
10. **The fault line in the multi-wire cable interconnects all:**
  - a) the monitor panels and the alarm panels
  - b) the monitor panels and the data panels
  - c) the data panels and the alarm panels
  - d) the data panels and the survey panels
  
11. **The entire Monitor Display is unlit if there are:**
  - a) two alarm conditions
  - b) three alarm conditions
  - c) four alarm conditions
  - d) no alarm conditions
  
12. **A normal Environmental Monitor is designed to be:**
  - a) continuously powered from a ?18V DC power source
  - b) continuously powered from a ?28V DC power source
  - c) continuously powered from a ?38V DC power source
  - d) continuously powered from a ?48V DC power source
  
13. **The basic Environmental Monitor indicates 2 separate:**
  - a) concentrations of methane
  - b) concentrations of carbon monoxide
  - c) concentrations of natural gas
  - d) concentrations of carbon
  
14. **The underground telephone normally monitors the dc level:**
  - a) on the 3-inch cable
  - b) on the steel cable
  - c) on the coaxial cable
  - d) none of the above

15. **The receiver sends encoded environmental data to the:**
- a) surface via the UFL transmitter
  - b) surface via the ULF transmitter
  - c) surface via the ULL transmitter
  - d) surface via the UFF transmitter
16. **Under normal conditions all underground phone sets are:**
- a) connected to a surface system center by a coaxial cable
  - b) connected to an underground system by a coaxial cable
  - c) connected to a surface system center by a 3 inch cable
  - d) connected to a surface system center by a steel cable
17. **The receiver section selectively monitors received signals:**
- a) to detect a loud signal
  - b) to detect an abnormal signal
  - c) to detect a triggering signal
  - d) none of the above
18. **The receiver is designed to operate in both:**
- a) deep and shallow mines
  - b) coal and gold mines
  - c) wet and dry mines
  - d) active and inactive mines
19. **The triggering signal transmission frequency was chosen**
- a) to be 790 Hz
  - b) to be 890 Hz
  - c) to be 990 Hz
  - d) to be 1090 Hz
20. **The input sensitivity of the receiver was chosen to be:**
- a) 10 microvolts
  - b) 20 microvolts
  - c) 30 microvolts
  - d) 40 microvolts

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<b>*** ANSWER SHEET *** U469</b>  <b>DESIGN AND DEVELOPMENT OF AN          UP-LINK ENVIRONMENTAL MONITOR</b>	<u>STATE BOARD</u>	<u>COURSE NO.</u>	<u>VALUE</u>
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**Yes**  **No** **If fax and telephone are the same number, shall we call first?**

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