

**GEOGRAPHIC INFORMATION SYSTEMS
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***** EXAMINATION *****

UNCONVENTIONAL GAS

1. **Scarce sources of information for unconventional gas**
 - a) include geologic information
 - b) include engineering information
 - c) Both a and b
 - d) None of the above

2. **Unconventional gas reservoirs are located in**
 - a) the United States
 - b) Mexico
 - c) Canada
 - d) All of the above

3. **Locations of unconventional gas reservoirs include**
 - a) coalbed methane
 - b) shale gas
 - c) tight gas
 - d) All of the above

4. **A low permeability reservoir that produced mainly**
 - a) dry natural gas is an unconventional gas reservoir
 - b) sour gas is an unconventional gas reservoir
 - c) oil is an unconventional gas reservoir
 - d) sweet crude is an unconventional gas reservoir

5. **The definition of a tight gas reservoir is a function of**
 - a) economic and physical factors
 - b) the soil type
 - c) the elevation of the surface
 - d) All of the above

6. **The physical factors of the permeability of a gas reservoir**
 - a) are related by Newton's Law
 - b) are related by Darcy's Law
 - c) are related by Hilton's Law
 - d) are related by Wilson's Law

7. **Unconventional gas is produced with**
- a) stimulation by a large hydraulic fracture treatment
 - b) stimulation by a horizontal wellbore
 - c) stimulation by using multilateral wellbores
 - d) Any of the above
8. **Unconventional gas reservoirs are**
- a) always deep
 - b) always shallow
 - c) always lenticular
 - d) None of the above
9. **The most prevalent unconventional gas resource is**
- a) gas shale
 - b) coalbed methane
 - c) tight gas
 - d) sweet crude
10. **Significant gas production of coalbed methane was**
- a) realized in 1969
 - b) realized in 1979
 - c) realized in 1989
 - d) realized in 1999
11. **To release absorbed gas during coalbed-methane production,**
- a) the pressure in the reservoir has to be reduced
 - b) the pressure in the reservoir has to be increased
 - c) the water in the reservoir has to be increased
 - d) the sour gas in the reservoir has to be increased
12. **The difference between coalbed methane reservoirs and**
- a) sandstone reservoirs is many of coal seams are saturated
 - b) sandstone reservoirs is sand is always shallow
 - c) sandstone reservoirs is sand is always deep
 - d) None of the above
13. **Natural gas is stored in shale**
- a) as free gas in natural fractures
 - b) as free gas in rock pores
 - c) as adsorbed gas on organic matter and mineral surfaces
 - d) Any of the above
14. **Massive hydraulic fracture treatments use propping**
- a) agents like sand
 - b) agents like water
 - c) agents like sour gas
 - d) Any of the above

15. **Horizontal drilling has been applied when**
- a) surface access is limited
 - b) the landowner restricts access
 - c) Both a and b
 - d) None of the above
16. **Natural gas production has been increased by**
- a) 3-D seismic processing
 - b) horizontal drilling
 - c) improved fracture simulation
 - d) All of the above
17. **Lower drilling costs have been the result of**
- a) improved drilling bits
 - b) improved well planning
 - c) improved drilling rigs
 - d) All of the above
18. **Deeper wells challenge the gas industry to develop**
- a) better drilling techniques
 - b) better logging techniques
 - c) better completion techniques
 - d) All of the above
19. **Draining multiple smaller reservoirs with fewer wells**
- a) can be accomplished by improved financial support
 - b) can be accomplished by improved wellbore designs
 - c) can be accomplished by improved refineries
 - d) All of the above
20. **Users of technologies are more apt to attempt field trials**
- a) of new technology when internally developed
 - b) of new technology when externally developed
 - c) of new technology when sold
 - d) of new technology when jointly developed

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*** ANSWER SHEET *** U606 UNCONVENTIONAL GAS	<u>STATE BOARD</u>	<u>COURSE NO.</u>	<u>VALUE</u>
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I hereby certify that I studied the course materials, and the above answers are my own. No one has helped me to complete this exam.

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