

***** EXAMINATION *****

**SUGARCANE LEAF-BAGASSE GASIFIERS
FOR INDUSTRIAL HEATING APPLICATIONS**

1. **Gasifiers can use fuels such as**
 - a) sugarcane leaves
 - b) bagasse
 - c) sorghum stalks
 - d) All of the above

2. **Char produced by gasifiers weigh about**
 - a) 12% of the original fuel
 - b) 24% of the original fuel
 - c) 36% of the original fuel
 - d) 48% of the original fuel

3. **Char can be used as**
 - a) a fuel for wood stoves
 - b) a soil conditioner
 - c) both a and b
 - d) None of the above

4. **Agricultural residues include**
 - a) rice husks
 - b) sugarcane leaves
 - c) wheat residues
 - d) All of the above

5. **A gasification system includes**
 - a) a reactor
 - b) a gas conditioning system
 - c) a biomass feeding system and instrumentation
 - d) All of the above

6. **A gasification system reactor should be**
 - a) downdraft
 - b) throatless
 - c) open-top
 - d) All of the above

7. **A completely dry dust collection system for gas conditioning**
 - a) eliminates the problem of wastewater
 - b) eliminates the problem of pollution
 - c) eliminates the problem of waste
 - d) All of the above

8. **The biomass feeding system conveys the biomass fuel**
 - a) from the reactor to the storage pile
 - b) from the storage pile to the reactor
 - c) from the storage pile to the waste area
 - d) from the reactor to the waste area

9. **The instrumentation and control system helps the operator**
 - a) monitor pollution levels
 - b) monitor water levels
 - c) monitor temperature levels
 - d) None of the above

10. **The control system monitors**
 - a) the biomass feeding
 - b) the ash removal rates
 - c) both a and b
 - d) None of the above

11. **Automatic burner sequence controllers provide for**
 - a) the ignition of the producer gas
 - b) the removal of water
 - c) the elimination of ethanol
 - d) All of the above

12. **Operators of the gasification systems**
 - a) are unnecessary
 - b) are required
 - c) may be eliminated by control systems
 - d) None of the above

13. **The moisture content of bagasse is about**
 - a) 10-15%
 - b) 25-30%
 - c) 35-45%
 - d) 50-55%

14. **Sugarcane leaves are chopped into smaller particles using**
 - a) a machete
 - b) a waste basket cutter
 - c) a chaff cutter
 - d) Any of the above

15. **Bagasse from sugar factories comes in a**
- a) liquid form
 - b) powdery form
 - c) both a and b
 - d) Neither a nor b
16. **The ash content of dry sugarcane leaves is about**
- a) 2.2%
 - b) 4.2%
 - c) 6.2%
 - d) 8.2%
17. **The gas in a gasification system is cooled by**
- a) water
 - b) oil
 - c) either a or b
 - d) nitrogen
18. **Flue gases from the tunnel furnace are vented into the atmosphere**
- a) by a chimney
 - b) through a recycling pond
 - c) through charcoal filters
 - d) None of the above
19. **The maintenance cost of the NARI gasification system is**
- a) 20% of the capital cost spread over 5 years
 - b) 30% of the capital cost spread over 5 years
 - c) 40% of the capital cost spread over 5 years
 - d) 50% of the capital cost spread over 5 years
20. **Low-density biomass gasifiers can be retrofitted to**
- a) charcoal-fired furnaces
 - b) wood-fired furnaces
 - c) coal-fired furnaces
 - d) oil-fired furnaces

GEOGRAPHIC INFORMATION SYSTEMS
 GEOGRAPHIC INFORMATION CENTER
 PO BOX 5839
 MC ALLEN, TEXAS 78502-5839

1-800-522-0139
 kh@acnet.net
 Copyright 2012

*** ANSWER SHEET *** U359 SUGARCANE LEAF-BAGASSE GASIFIERS FOR INDUSTRIAL HEATING APPLICATIONS	<u>STATE BOARD</u>	<u>COURSE NO.</u>	<u>VALUE</u>
			8 PDH
Office Use Only			

FILL IN ONE BOX FOR EACH ANSWER.

	A	B	C	D
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

I hereby certify that I studied the course materials, and the above answers are my own. No other person has helped me to complete this exam.

 Signature

 Date

 Printed or typed name

 Seal or Number

**GEOGRAPHIC INFORMATION SYSTEMS
GEOGRAPHIC INFORMATION CENTER
PO BOX 5839
MC ALLEN, TEXAS 78502-5839**

**1-800-522-0139
kh@acnet.net
Copyright 2012**

Name _____

Company _____

Address _____

City _____ **State** _____ **Zip** _____

Telephone _____ **E-Mail** _____

Fax _____ () **24-Hour Fax**

() **Yes** () **No** **If fax and telephone are the same number, shall we call first?**

Mail certificates to above address _____ **check address** _____ **envelope address** _____

State + Specialty + PE Registration number (i.e. TX EE 12389) _____

State + Professional Land Surveying registration number _____

NC (North Carolina) + Specialty + PE Registration number _____

NC (North Carolina) + Land Surveying Registration Number _____

Professional Affiliations _____

Return this page with your answer sheet and a check or money order For \$100 per course. Use one check for each registrant (in your company) taking one or more courses. We accept company checks (if they are your employer's). We do not accept third-party checks or checks outside of your city of residence. Using third-party checks that do not include your name or company name may invalidate your professional development hours being reviewed by an audit process. Add \$5 for same day processing and priority shipping.

Make checks or money orders payable to Geographic Information Systems.

