ENGG-243

Multiple choice question

1. Renewable energy is a **inexhaustible** in nature.

   a. Exhaustible. b. Inexhaustible

   c. Source. d. Resource

2. In **hydro power** kinetic energy of water is converted into electrical energy

   a. Hydropower. b. Thermal Power. C. Tidal power. d. Wind power

3. In **wind power** wind energy is converted into electrical energy

   a. Hydropower. b. Thermal Power. C. Tidal power. d. Wind power

4. In **thermal power** thermal energy is converted into electrical energy

   a. Hydropower. b. Thermal Power. C. Tidal power. d. Wind power

5. **Tidal power** the ocean energy is converted into electrical energy.

   a. Hydropower. b. Thermal Power. C. Tidal power. d. Wind power

6. Plant matter created by the process of photosynthesis is called as **biomass**

   a. Biomass. b. Gasification. c. Hydrolysis. d. Payrolysis

7. **Gasification** is the process of converting solid biomass with a limited quantity of air into producer gas

   a. Biomass. b. Gasification. c. Hydrolysis. d. Payrolysis

8. **Pyrolysis** is the thermal decomposition of biomass in the absence of oxygen

   a Biomass. b. Gasification. c. Hydrolysis. d. Payrolysis

9**. Biochemical conversion** includes anaerobic digestion to produce biogas

   a. Biochemical conversion b. Gasification. c. Hydrolysis. d. Payrolysis

10. Biomass+heat=**charcoa**l

   a. Charcoal. b. Sale gas. C. Fuel gas. d. Hot combustion products

11. Biomass and limited oxygen is equal to **fuel gas**

a. Fuel gas. b. Gasification. c. Hydrolysis. d. Payrolysis

12. Biomass and oxygen is equal **hot combustion products**

a. Charcoal. b. Sale gas. C. Fuel gas. d. Hot combustion products

13. The methane percentage inside the biogas **55 to 65**%

a. 55 to 65. b. 30 to 40. C. 10 to 20 d. 1 to 10

14. The carbon dioxide percentage inside biogas is **30 to 40%**

a. 55 to 65. b. 30 to 40. C. 10 to 20 d. 1 to 10

15. **Digestion** is biological process that occurs in the absence of oxygen and in the presence of organisms

a. Digestion. b. Hydrolysis. c. Methane formation d. Acid formation

16. **Hydrolyse** and fermentation of the the raw material in the biogas is known as acid formation

a. Digestion. b. Hydrolysis. c. Methane formation d. Acid formation

17. Acetate carbon dioxide are converted into gas mixture of methane and CO2 to by the bacteria called as methane **formation**

a. Digestion. b. Hydrolysis. c. Methane formation d. Acid formation

18. **1 kg** of dry cattle dung produces 1m cube of biomass

a.1. b.2. c.3. d.4

19. 1 kg of fresh cattle dung contains **8%** of dry biodegradable mass.

a. 8. b.2. c.10. d.14

20. **1** kg of fresh cattle dung has a volume of about **0.9 litre**

a.0.9. b.1. c.0.2. d.12

21.The ratio of chemical energy output in the dry producer gas at **15 oc**

a.15. b.20. c.45. d.28

22 The calorific value of biogas ranges from **5000-5500 Kcal/kg**

a.5000-5500. b.4000. c.6000 d.8000

23.the CN ratio cattle dung **20.8**

a.20.8. b.25. c.45. d.50

24.the biogas production Lt/kg from cattle dung is

a.**40.** b.32. c.142. d.90

25.The remaining indigestible matter is reffered as **slurry**

a.slurry. b.dung. C.wet material. d.soil

26.Typical retention of slurry in a biogas plant is **40 days**.

a.40. b.50. c.80. d.60

27.Methane bacteria work best in a temperature range of **35 to 38 o C**

a.35- 38. b.56. c.40. d. 60

28.Fermentation of raw cow dung can takes place at any temp.between **8 to 55 oC**

a.8 to 55 oC. b.56. c.40. d. 60

29.The rate of biogas formation is very slow at **8 oC**

a.8. b.3. c.10. d.9

30.A Ph value between **6.8 and 7.8** must be best for normal gas production

1.6.8 - 7.8. 2.6.0. 3.9.0. 4.3.5

31.the water content should be around **90 percent** of the wt of total contents..

a.90. b.70. c.80. d.50

32.Cow dung process well if the slurry contain **8 & 9** percent solid organic matter during fermentation

a.8-9. b.10. c.20. d.22

33.The slurry should be **agitated** to improve the gas yield

a.agitated. b.dry. c.dehydrated. d.none

34.The depth of digester of KVIC **3.5- 6.5 m**

a.3.5-6.5. b. 5. c. 8. d.7.8

35.The diameter of KVIC is **1.2 to 1.6 m**

a.1.2 - 1.6. b. 4. c.3. d.2.4

36.Through the dung is mixed with water **4:5**

a. 4:5. b.8:9. c 1:3. d.2:3

37.The gas pressure varies between **7 and 9** cm water column

a.7 - 9. b. 10. c. 12 d.14

38.The cost of drum is about **40 percent** total cost of plant.

a.40. b. 50 . c.70 d.30

39. The design of the plant of **janatha typ**e is Chinese origin

a. Chinese. b. Indian. c. Spanish. d. Italian

40. In **Janata type** biogas plant no steel is used

a. Janata. b. Kvic. c. Deenbandhu . d. Lokmangal

41. Dinbandhu model was developed in **1984**

a. 1984. b. 1987. C. 2000. d. 1980

42. Deenbandhu plant having a capacity of **2** m cube/day

a.2. b.5. c. 7. d.8

43. About 90% of the biogas plants in India are of the **deenbandhu** type

a. Janata. b. Kvic. c. Deenbandhu . d. Lokmangal

44. Biogas plant can run **2** HP engine for 1 hour

a.3. b.2. c.5. d.1

45. Biogas plant can run **100 litre** capacity refrigerator for 9 hour

a.100. b.500. c 490. d. 2000

46. 1 cubic metre of biogas plant illuminate a lamp having **60 watt** capacity for 7 hours

a. 60. b.90. c.10. d.300

47. 1 cubic metre biogas plant can develop **1.25 kwh**

a.3. b.2. c.1.25. d. 1

48. Lifespan of the kvic type plant is **30 years**

a.30. b 45. c. 50. d.34

49. Fixed bed gasifier in generally a **vertical reactor**

a. Vertical. b. horizontal. c. triangular. d. Circular

50. In **updraft gasifier** at the top material at the top and the Air release from the bottom to the top

51. In a **cross draft gasifier** air is fed into the gasifier through a horizontal nozzle

52. In a **down draft gasifier** the biomass is fed the top and producer gas and ash moves down

53. The first zone of the gasification process is known as **drying**

a. Drying. b. Payrolysis c. Oxidation. d. Reduction

54. The second zone of the gasification process is known as **pyrolysis**

a. Drying. b. Payrolysis c. Oxidation. d. Reduction

55. Third zone of the gasification process is known as **oxidation**

a. Drying. b. Payrolysis c. Oxidation. d. Reduction

56. IV zone in the gasification process is known as **reduction**

a. Drying. b. Payrolysis c. Oxidation. d. Reduction

57. Pyrolysis zone temperature ranges from **200 degree Celsius to 600 degree Celsius**

a.200-600. b.120. c.900-1200. d.1300-800

58. In drying on temperature is up to **120 degree Celsius**

a.200-600. b.120. c.900-1200. d.1300-800

59. In oxidation zone temperature in this from **900 to 1200 degree Celsius**

a.200-600. b.120. c.900-1200. d.1300-800

60. In reduction zone temperature reduces from **1300 to 800 degree Celsius**

a.200-600. b.120. c.900-1200. d.1300-800

61. The process of briquetting consists of applying pressure to mass of particles with or without binder

62. Most of the agroforestry biomass contains high moisture **18 to 20%**

a.18-20. b.26. c.44. d.10

63. The compression ratio of approximately **7 : 1** for the loose biomass to form brequttres

a.7:1. b.1:2. C.5:6. d.5:6

64**. Bricquetting** is a technology method to compressing bulk raw material

65. Biomass is semi-fludized through the application of high pressure in the range of **1200 to 2000** kg per centimetre square

a.1200-2000 b.100-200 c.22-80. d.none

66. Briquetting machine operate at lower pressure range **500 to 1000** kg per centimetre square

a.1200-2000 b.500-1000 c.22-80. d.none

67. Biomass is force through the holes in a die plate by pressure rolls is called as **pelleting**.

a.pelleting. b.cutting. c.rolling. d.extruding

68. Modified from pelleting product for the size 2to5 CM is called **cutting**

a.pelleting. b.cutting. c.rolling. d.extruding

69.where biomass is forced through the holes using A screw is called **extruding**

a.pelleting. b.cutting. c.rolling. d.extruding

70.where biomass is wrapped around the rotating shaft with producers high-density roll is called as **rolling.**

a.pelleting. b.cutting. c.rolling. d.extruding

71.**sun** is the heaviest body of the solar system around which all the planets revolve

72. The light emitted from the sun reaches the earth in 8.3 minutes

73. **Sun** is the main source of heat and light energy for all the members of solar system including the earth

74. **Pyrheliometer** is used for measuring beam radiation

a.Pyrheliometer. b.anemometer. C.Pyranometer. d.Lux

75. **Pyranometer** is used to measure total radiation

a.Pyrheliometer. b.anemometer. C.Pyranometer. d.Lux

76. **Anemometer** is used to measure wind speed

a.Pyrheliometer. b.anemometer. C.Pyranometer. d.Lux

77. **Lux** is the unit of the light

a.Pyrheliometer. b.anemometer. C.Pyranometer. d.Lux

78. This solid materials in the presence of a temperature difference of heat is called as **conduction**

a. Conduction. b. Radiation . c. conviction. d. Convection

79.**radiation** in which energy moves in space by electromagnetic waves in a moving field

a. Conduction. b. Radiation . c. conviction. d. Convection

80. **Convection** means the heat is transferred from different phases

a. Conduction. b. Radiation . c. conviction. d. Convection

81. The temperature attained on a parabolic concentrator reflector is **100 to 300 degree Celsius**

82.the most favourable orientation of a collector for heating only is due to south at an inclination angle to horizontal equal to the **latitude + 15 degree**

83. **A passive method** is one in which thermal energy flows through a living space by natural means without the help of a mechanical device

84.The size of the box type cooker is **50x50x12**

a.50x50x12. b.60x60x20. c.none d.100x100x20

85.The dimensions of the latest model are.

a.50x50x12. b.**60x60x20.** c.none d.100x100x20

86.The temperature attained is ahout **100 oC** in solar coocker

a.190 b. 100. c. 15-20. d.None

87.Addition of single glass glass reflector **15-20 oC**

a.190 b. 100. c. 15-20. d.None

88.Deliver hot hoter renge of **50 to 70 oC**

a.190 b. 50-70. c. 15-20. d.None

89.A solar heater works on a principal on **natural circulation**

a. Natural circulation. b.heated. c.drying. d.none

90.Removal of moisture at predetermined level is called **dring**

a.drying. b.dehydration. c.none. d.sorting

91.Removal of moisture at dry bone condition

a.drying. b.**dehydration**. c.none. d.sorting

92.A cabinet type solar dryer is suitable for **small** scale use.

a. Small. b.large. c. None. d. Not used

93.For **large** scale drying convective dryer is used.

a. Small. b.large. c. None. d. Not used

94.In cabinet dryer drying temperature from **50- 80 oC**

a.50-80. b.10. C 19-24. d.15-20

95.Cabinet dryer drying time ranges from **2-4 days**

a.2-4. b.5. c.01. d.7-8

96. **Basin type** solar stills are adopted for distillation of water

a.basin type. b. Cabinet. c. Convective. d.none

97.A well designed still capacity is **3 lit/m2**

a.3. b.2. c.6. d.5

98.A **solar pond** is a simple device for collecting and storing heat

a.basin type. b. Cabinet. c. Convective. d.solar pond

99.**A solar pond** designed to reduce convective and evaporative heat loss .

a.basin type. b. Cabinet. c. Convective. d.solar pond

100. In a **solar pond** greater Salt concentration at the bottom

a.basin type. b. Cabinet. c. Convective. d.solar pond

101. **convective solar pond** reduces heat loss by being covered a transparent membrane

a.basin type. b. Cabinet. c. Convective solar pond d.none

102.**Non convective solar ponds** prevent heat loss by convective forces ..

a.basin type. b. Cabinet. c.non Convective. d.none

103.In a **non convective** ponds may be stabilized by viscocity

a.basin type. b. Cabinet. c.non Convective. d.none

104.The salt gradient pond is the most common type of **non convective** solar pond.

a.basin type. b. Cabinet. c.non Convective. d.none

105. A solar pond is mass of shallow water about **1-1.5 m**

a.0.5. b.1- 1.5. c.2.5. d.5

106. In a **solar pond salt** have been dissolved at a higher concentrations

107. In a solar pond **solar radiations** entering the pond surface is observed through out the depth

108.The top layer of the solar pond is **convective**

a.convective. b.non convective. c.high concentration d.none

109. The bottom layer of the solar pond **is convective layer**

a.convective. b.non convective. c.high concentration d.none

110. The middle layer of the solar pond is **non convective layer**

a.convective. b.non convective. c.high concentration d.none

111. **solar fencing** is the modern days alternative to the conventional type of perimeter protection

112.the conventional types of fenses are only **passive fences** cannot resist the intruder

113.The **solar fence** is scientific fence and works on the solar energy with backup facility

114. The heart of power fence is the **energizer**

115.the solar water pumping system is **a standalone** system operating on a power generated using solar PV system

116**.the winds** on the earth surface are caused by the unequal heating of the land and water by the sun

117. Energy derived from wind velocity is **wind energy**

118.**wind energy** is non conventional type of energy which is renewable with suitable devices

119.the minimum wind speed of **10 km per hour** is considered to be useful for working windmill for agriculture purpose

120. The **wind energy** vary from time to time and place to place.

121. In India win speed lies between **5 kilometre per hour to the 20 km per hour**

a.5-20. b.10-30. c.none of these. d.4

122. Windmill is a machine for **wind** energy conversion

a.wind. b.water. c.Velocity. d.kinetic

123. **Vertical Axis machine** simple design as compared to horizontal express

124. **Savoni windmill** works on the principle of cup anemometer

125.**horizontal Axis wind turbines** have their axis of rotation horizontal to the ground

126.the **horizontal type windmill** have a 3 cross section or more efficiently thick cross-section to the blade

127. In windmill rotors **more than two** blades would have higher coefficient

128**.biofuel** transportation fuel like biodiesel that are made from biomass material

129. **Viscosity** representation flow characteristics and the tendency of fluids

130. **Density** represents weight per unit volume.