Question Bank (I-scheme)

Name of subject: Emerging Trend in Mechanical Engg. Unit Test: I
Subject code: 22652
Course: ME6I
Semester: VI

Chapter 1: Recent Trend in Automobile Industry

2 marks questions

1.1 HYBRID CAR MANUFACTURERS

1. The fuel efficiency of Mild hybrids vehicle is more as compared to conventional hybrid systems by _____ %?

a) 10- 15%

b) 7-15%

c) 3-15%

d) 1-15%

2. Which voltage is likely to be available from the battery of an electric vehicle also known as Mild hybrid?

a) 12V

b) 24V

c) 300V

d) 100V

3. The MHEV system consists of which volt?

a) 12V

b) 24V

c) 48V

d) none of the above.

4. world's first commercially mass-produced and marketed hybrid automobile was the Toyota Prius. It became available on the Japanese market in what year?

A 1998

B. 1996

C. 1997

D 1999

5. Hybrid vehicles convert energy that is normally lost through braking into electrical energy. What is the term that is used for this recycling of energy?

A Perpetual motion

B Regenerative breaking

C. Kinetic conversation

D. Hybrid archamy

6. First mass produced hybrid vehicle internationally is.....

1) Tesla model X.

2) Mahindra e2o.

3) Toyota Prius.

4) Ford GT.

7. The first vehicle with hybrid technology was developed by.....

1) **Ferdinand Porsche.**

2) Thomas Edison.

3) Isaac Newton.

4) Alexander Graham Bell.

8. Which of the following is not an advantage of hybrid vehicles.

1) Environmentally friendly.

2) **Initial cost is low.**

3) Better mileage.

4) Higher energy conservation.

9. Which of the following is not a disadvantage of hybrid vehicles?

1) You will not get as many discounts or incentives as you will get with electric vehicles.

2) They aren't as powerful.

3) **Lower mileage and higher emissions.**

4) They are not exempted from tax.

10. Which of the following is not the type of hybrid vehicle?

a) Plug in hybrid

b) Parallel hybrid

c) Natural gas for vehicle

d) Series hybrid

11. Regenerative braking involves :

a) Nano fibers that repair the surface of brake pads

b) Reducing the amount of friction

c) Reclaiming heat from the brake and using it for power

d) All of the above

12. What purpose does a generator serve in a hybrid vehicle?

(a) It converts nuclear energy 6more nuclear energy.

(b) It converts mechanical energy into electrical energy.

(c) It converts chemical energy into electrical energy.

(d) It converts electrical energy into mechanical energy.

13._____ technology helps to stop a combustion engine when the vehicle pulls to a stop and restart it when driver accelerates.

- Start stop technology
- Passive braking technology
- **Regenerative braking technology**
- Internal cooling technology

14. _____ what does MHEV stands for

- **Mild hybrid electric vehicle**
- Micro hybrid electric vehicle
- Mild horsepower electric vehicle
- Micro horsepower electric vehicle

15. The electric motor in hybrid car can also act as_____

- **A generator**
- A Fuel pump
- Cooling fan
- Compressor

16. The full form of the BAHV's.

A) Battery assisted hybrid vehicle.

B) Battery proxy hybrid vehicle.

C) Battery assist hydro vehicle.

D) Nonn off the above.

17. The BAS mild hybrid system used……. To start the internal combustion engine.

a. Belt drive
b. Chain drive
c. Direct drive
d. None of the above.

18. The electric motor in a mild hybrid is acting as a

a. Power booster
b. Hydro boost
c. Buffalo power booster
d. Booster plug

19. In _____ vehicle energy is stored in an auxiliary battery and then it is used to quickly start a vehicle

a) Full hybrid **b) Micro hybrid**
c) Series hybrid d) Mild hybrid

20.In which vehicle system lowest size of a battery is used

a**) Micro hybrid** b) Mild hybrid
c) Series hybrid d) Parallel hybrid

7. In which vehicle system bigger size of a battery is used

a) Micro hybrid b) Mild hybrid
c) Series hybrid **d) Full hybrid**

21. Following is not type of hybrid electric vehicle.

A) Series
B) Parallel
C) Vertical
D) Complex

22. In parallel hybrid vehicle Internal Combustion Engine and electric motor are coupled by a ……..device.

a. Hydraulic
b. Pneumatic
c. Mechanical
d. Electric

23. The combustion engine can operate in …….. RPM range, even as a car change a speed.

a. Moderate
b. Wide
c. Narrow
d. None of the above

24. In this configuration, efforts are made to operate the electric motor alone at..... and ICE alone at.....

a) medium speed and lower speed.

b) higher speed and lower speed

c) higher speed and medium speed

d) lower speed and higher speed

25. Full form of CVT

a) continuously variation transform

b) continue various transmission

c) continuously various transformation

d) continuously variable transmission

26. Full form of ICE

a) Internal continuous engine

b) Internal combination engine

c) internal continue emission

d) none of the above

27. Full form of PEM in fuel cell

a) petrol-exchange membrane

b) proton-execute membrane

c) proton-exchange membrane

d) petrol-execute membrane

28. Which vehicles do not require the same level of battery power and do not achieve the same levels of fuel economy

a) Mild Hybrid
b) Full Hybrid
c) Series Hybrid
d) Parallel Hybrid

29. What does PHEV stands for
a) Plug-in Hybrid Electronic Vehicles
b) Plug-in Hybrid Electric Vehicles
c) Plug-out Hybrid Electronic Vehicles
d) Plug-out Hybrid Electric Vehicles

30. Which of these is the purpose of power-split device
a) To split Electrical Energy into Mechanical Energy.
b) To allow both the engine and Electric motor to propel the vehicle
c) To recharge the battery while braking
d) To recharge the brakes while driving

31. A Hybrid Vehicle equipped with push button start will enter the power ON mode but will not enter the ready to drive mode .No diagnostic trouble code are stored this could cause by
a) The high voltage safety plug is removed
b) A failed brake on/off switch
c) An empty fuel tank
d) A disconnect 12v battery

32. The MIL is illuminated and a battery module deterioration diagnostic trouble code is stored the most like cause is a failed by
a) High voltage battery
b) High voltage inverter
c) Motor/ generator
d) DC/ DC converter

33. A conventional vehicle costs 10 to 15 percent per mile in fuel to operate. How much does an electric vehicle cost per mile?

- **2 to 4 cents**
- 5 to 6 cents
- 7 to 8 cents
- 9 to 10 cents

34. The strategic petroleum reserve was created to lower oil prices during supply disruptions .How much did the US spend to build and fill the SPR?

- $980 billion
- $2 million
- $4.5 billion
- **$22 billion**

35. Current levels of off-peak electric capacity are sufficient to power how much of our nations car and light-duty truck fleet?

- 19%
- 33%
- 55%
- **73%**

36. Which of these is the purpose of the power-split device?

- To split electrical energy into mechanical energy
- **To allow both the engine and electric motor to propel the vehicle**
- To recharge the battery while braking

37. The electric cars available in india are:

A . Hyndai Kona Electic

B. Mahindra E20

C . Tata tigor EV 2019

D. All of the above

38. The following companies have launched electric motor cycles in india :

A . revolt

B . hero

C . Yamaha

D . all of the above

39. India's first electric bus was launched in ..... in 2014.

A . Chennai

B . Mumbai

C . Gujarat

D . Banglore

40. Ashok Leyland launched its electric bus in.....

A . oct 2015

B . oct 2016

C . april 2016

D . april 2015

41. SMEV stands for .....

A . society of manufacturing of ergonic volts

B . society of manufacturing of electronic vehicles

C . society of manufacturing of environment vehicles

D . society of manufacturing of electric vehicles

42. Society of Indian automobile manufactures:

A . SMEV

B . VMCV

C . SEMV

D . SSEV

43.. There is main reason for which the automotive manufacturers are developing and selling HEVs.

A. Reduction of Co2 emission.
B. Direction of exhaust gas toxic emission.
C. Improvement of powertrain dynamics
D. All of the above

1.2 E- Vehical

44. Who is the largest manufacturer of lithium batteries?
A] Us giga factory
B] Samsung solco
C] Panasonic
D] Toshiba
45. How many km can an electric car go?
A] 500 Km
B] 700 km
C] 450 km
D] 100km
46. The storage battery generally used in electric power station is
A] nickel-cadmium battery
B] zinc-carbon battery
C] lead-acid battery
D] None of the above
47. The output voltage of a charger is
A] less than the battery voltage
B] Higher than the battery voltage
C] The same as the battery voltage
D] None of the above
48. What is the challenge with electric vehicles?
A] Vehicle durability
B] Cell life
C] Cost
D] Both A and B
49. What is the life of battery in an electric car ?
A] 8 year
B] 10 year
C] 4 year
D] 20 year
50. What type of battery is used in an electric car?
A] Lithium ion
B] Nickel -metal hydride
C] Both A and B
D] None of the above
51. The capacity of a battery is expressed in terms of
A ampere per hour
B current
C volt
D ampere
52. Life of a battery in the electric vehicle is about

A 8 years
B 5 years
C 10 years
D 20 years
53. Who was the inventor of electric batteries in electric cars
A Thomas Davenport
B newton
C Dr Abdul kalam
D Nikola tesla
54. How much time it takes for a electric car of 60kWh battery to charge
    1. 5 hours
    2. **8 hours**
    3. 6-7 hours
    4. None of above
55. Advantages of lithium batteries
    1. Light weight
    2. Compact
    3. Low maintenance
    4. **All of the above**
56. How many volts it take to charge an electric car?
    1. 140
    2. 150
    3. **120**
    4. 200
57. How many known modes of charging of EVs are available
    1. 3
    2. 2
    3. **4**
    4. 1
58. Which from the listed are fuel cells
    1. SOFC
    2. MCFC
    3. PAFC
    4. **ALL OF THE ABOVE**
    59. Modern lithium ion batteries provide average range of
        - 120-280 kilometres
        - **320-480 kilometres**
        - 520-680 kilometres
        - 720-980 kilometres
    60. The electrolyte used in sodium nickel chloride batteries is
    - Sodium chloride
    - **Tetra chloraluminate**
    - Sodium bicarbonate
    - Sodium glutamate
    61. Average temperature of electrolyte in sodium nickel chloride batteries
    - 100 to 200 degree Celsius
    - **270 to 350 degree Celsius**
    - 380 to 410 degree Celsius
    - None of the above

62. Average lifespan of sodium nickel chloride batteries
- 5 years
- 10 years
- **15 years**
- 20 years

63. Sodium nickel chloride batteries are also called as
- Horse
- **Zebra**
- Cobra
- Turbo

64. What are the various types of batteries used in electric vehicles
- Lithium ion batteries
- Sodium nickel chloride batteries
- Sodium sulphor batteries
- **All of the above**

65. Sodium sulphur battery is a type of molten-salt battery constructed from _____ sodium and sulphur.
    - Solid
    - **Liquid**
    - Plasma
    - Gases

66. The following is the operating temperatures of the sodium –sulphur battery.
    - 400 to 600°C
    - 1000 to 1500°C
    - **300 to 350°C**
    - 100 to 200°C

67. The cell is usually ____ in shape.
    - Triangular
    - Circular
    - Rectangular
    - **Cylindrical**

68. Entire cell is enclosed by a steel casing that is protected usually by _____ and _____.
    - Nickel, chromium
    - **Chromium, molybdenum**
    - Aluminium, molybdenum
    - Nickel, aluminium

69. Full form of BASE is _____.
    - Basic Analysis and Security Engine.
    - Biefield Academic Search Engine.
    - Basel Agency for Sustainable Energy.
    - **Beta-Aluminium Solid Electrolyte.**

70. The sulphur in sulphur sodium battery is absorbed by___ sponge.
    - Sodium
    - **Carbon**
    - Wire
    - Cellulose

71. Which of the following is not the name of charging station?

- Electric vehicle charging station
- EVSE
- ECS
- **ESSV**

72. The charging time depends on which of the following factor?
    - Battery size
    - **Battery capacity**
    - Size of vehicle
    - Voltage of batery

73. The capacity of a battery is expressed in terms of

A. Current rating
B. Voltage rating
C. Ampere hour rating
D. None of the above

74. The storage battery generally used in electric power station is

A. Nickel-cadmium battery
B. Zinc carbon battery
C. Lead-acid battery
D. None of the above

75. Trickle charger of a storage battery helps to

A. Maintain proper electrolyte level
B. Increase its reverse capacity
C. Prevent sulphation
D. Keep it fresh and fully charged

76. On over charging a battery

A. It will bring about chemical change in active materials
B. It will increase the capacity of the battery
C. It will raise the specific gravity of the electrolyte
D. None of the above

77. Battery container should be acid resistance therefore it is made up of

A. Glass
B. Plastic
C. Wood
D. **All of the above**

78. Following will happen if battery charging rate is too high

A. Excessive gassing will occur
B. Temperature rise will occur
C. Bulging and buckling of plates we occur
D. All of the above

79. To prevent local action in battery, only ……is used in electrolytes

A. Pump water
B. Distilled water
C. Tap water
D. Both A and C

80. Ampere hour capacity of an industrial battery is based on …….hours discharge rate

A. 8
B. 12
C. 16
D. 24

81. Lithium cells operates ranging from
a. -25 ° C to 25 ° C
b. -50 ° C to 25 ° C
c. -50 ° C to 75 ° C
d. -75 ° C to 75 ° C
82. The positive plates of nickel iron cell is made up of
a. Nickel hydroxide
b. Lead peroxide
c. Ferrous hydroxide
d. Potassium hydroxide
83. In lead acid accumulators, the container is filled with distilled water and concentrated sulphuric acid in the ratio of
a. 1 : 2
b. 2 : 1
c. 3 : 1
d. 1 : 3
84. The emf of the dry cell is about
a. 0 V
b. 0.5 V
c. 1 V
d. 1.5 V
85. In cell, the current flows in outer circuit from
a. Positive terminal to negative terminal and electrons from negative terminal to positive terminal
b. Positive terminal to negative terminal and electrons from positive terminal to negative terminal
c. Negative terminal to positive terminal and electrons from negative terminal to positive terminal
d. Negative terminal to positive terminal and electrons from positive terminal to negative terminal
86. Which of the following battery is used for aircraft?
A. Lead acid battery
B. Nickel-iron battery
C. Dry cell battery
D. Silver oxide battery
87. When two batteries are connected in parallel, it should be ensured that
A. They have same emf
B. They have same make
C. They have same ampere hour capacity
D. They have identical internal resistance
88. The electrode for a battery must be
A. A semi conductor
B. An insulator
C. A good conductor of electricity
D. A bad conductor of electricity
89. A dead storage battery can be revived by
A. Adding distilled water
B. Adding so-called battery restorer
C. A dose of H2SO4
D. None of the above
90. The open circuit voltage of any storage cell depends wholly upon
A. Its chemical constituents

B. On the strength of its electrolyte
C. Its temperature
D. **All of the above**

91. Each cell has a vent cap
A. To allow gases out when the cell is on charge
B. To add water to the cell if needed
C. To check the level of electrolyte
D. To do all above functions

92. What is one of the primary downsides of fuel cells?
A. Weight
B. Cost
C. Pollution
D. Maintenance

93. A fuel cells converts ……energy into electrical energy
A. Mechanical
B. Magnetic
C. Solar
D. Chemical

94. Which of the following primary cells has the highest voltage ?
A. Manganese-alkaline
B. Carbon-zinc
C. Lithium
D. Mercury

95. Which of these is a problem electric car makers are trying to solve?
A. Electric cars aren't noisy enough.
B. They don't produce enough sulphur dioxides.
C. They don't cost enough.

96. Identify incorrect statement of Electric vehicle
A. Insufficient charging stations
B. Long charging period
C. Limited range
D. High operating cost

97. Which vehicle has the smallest number of principle components?
A. Traditional vehicle
B. Hybrid vehicle
C. Electric vehicle
D. Both A and B

98. Which of the following vehicles produces zero emissions?
A. Traditional
B. Hybrid
C. Electric
D. Both A and B

99. How long does an electric car battery lasts per charge?
A. 20 min.-10hr. **B. 30min.-12hr.**
C. 40min.-9hr. D. 60min.-8hr.

100. What is the life span of electric car batteries?
A. 8 Year B. 10 years.
C. 9 years D. 11 years.

101. Which electric vehicle has 30 kwh and 160 km range?
A. **Nissan leaf** B. Ford focus

C. Mitsubishi MiE5 D. Smart ED

102. Which is the modified form of batteries in today's electronic cars?

A. Lithium ion B. Nickel iron

C. Lead Acid D. Sodium Nitrate

103. How to increase the range on electric vehicles?

a. By increasing the battery capacity.

b. By reducing battery capacity.

c. By installing a turbocharger.

d. By installing another DC motor.

104. Inverter cell anode and cathode of the……. cell is used for vehicle

(a) Copper electrode zinc

(b) Zinc copper

(c) Aluminium zinc

(d) Nickel Cobalt

105.The positive plants of nickel iron cell is made up of

a. Nickel hydroxide

b. Lead peroxide

c. Ferrous hydroxide

d. Potassium hydroxide

106. A stable interface between solid _____ liquid _____ and gaseous _____ promotes high rate of electrode processes.

a) Fuel, electrolyte, electrode

b) Electrode, fuel, electrolyte

c) Electrode, electrolyte, fuel

d) Fuel, electrode, electrolyte

107. Which of the following is not an example of a fuel cell?

a) Hydrogen-oxygen cell

b) Methyl-oxygen-alcohol cell

c) Propane-oxygen cell

d) Hexanone-oxygen cell

108. The electrolytic solution used in a hydrogen-oxygen fuel cell is _____

a) 75% KOH solution

b) 25% KOH solution

c) 75% NaOH solution

d) 25% NaOH solution

109. The residual product discharged by the hydrogen-oxygen cell is _____

a) Hydrogen peroxide

b) Alcohol

c) Water

d) Potassium permanganate

1.3 Safety in Automobile

110. By what percentage do seatbelts reduce the risk of death for a person sitting in front seat?

a) 40%

b) 50%

c) 60%

d) 70%

111. Where do typical car seat belts apply most of the stopping force?

a) To the shoulder and hips
b) To the chest and abdomen
c) To the rib cage and pelvis
d) To the head and legs

112. What area of car is designed to deform in a collision?
a) The crumple zone
b) The interior
c) The doors
d) The rear end

113. What's the primary advantage of a anti- lock braking system
a) They allow you to stop easier
b) They prevent locking
c) They allow you to steer while braking

114. Tempered safety glass is how many times stronger than regular glass
a) 1 to 3 times stronger
b) 5 to 10 times stronger
c) 3 to 5 times stronger

115. By what percentage can airbags reduce the risk of dying in a direct frontal crash?
a) 30%
b) 40%
c) 50%
d) 60%

116. What kind of gas inflates in an airbag
a) Hydrogen
b) Oxygen
c) Helium
d) Nitrogen

117. How far behind the steering wheel should you sit to avoid injury from an inflated airbag?
a) 8 inches
b) 5 inches
c) 10 inches
d) 13 inches

118. What are the requirements for a child to sit in a forward facing child seat?
a) He or she should weigh 10 to 15 pounds
b) He or she should weigh 13 to 15 pounds
c) He or she should weigh 15 to 18 pounds
d) He or she should weigh 20 pounds or more

119. When is a child ready to use an adult seat belt?
a) When they're around 4 feet,9 inches tall
b) When they're around 3 feet,5 inches tall
c) When they're around 4 feet,5 inches tall
d) When they're around 3 feet,9 inches tall

120. What does airbag, used for safety of car driver, contain?
A. Sodium bicarbonate
B. **Sodium azide**
C. Sodium nitrite
D. Sodium peroxide

121. What year did the government mandate driver's side airbags?
A. 1989
B. **1996**

C. 2001

D. The government has never mandated it.

122. Cruise control is used in which vehicles

A Road vehicles

B water vehicles

C aeroplane

D bus

123. Adaptive cruise control is used to adjust _of vehicle

A speed

B direction

C magnitude

D light

124. Adaptive cruise control system uses _

A all of the below

B laser sensor

C radar sensor

D camera setup

125. Autonomous cruise control are considered a _ car

A level 1

B level 2

C Level 3

D level 4

126._____Introduced laser 'preview distance control'

A Mitsubishi Diamante

B BMW

C Toyota

D Mercedes

127. Toyota offered a _____ cruise control

A lazer

B radar

C camera

D all of the above

128. What was based system do not detect and dark vehicles in adverse weather

A laser

B camera

C phone

D laptop

128. If the impulse response in absolutely integrate then the system is

(a) Absolutely stable

(b) Unstable

(C) Linear

(d) Stable

129. Asymptotic stability is connected with:

(a) A system under influence of input.

(b) A system not under influence of input.

(c) A system under influence of input.

(d) A system not under influence out.

130. If root of the characteristics equation has positive real part system is

(a) Stable

(b) Unstable

(C) Marginally stable

(d) Linear

131. _____ is a quantitative measure of how fair the transients die cut in the system.

(a) Absolutely stable

(b) Conditionally stable

(c) Unstable

(d) Relative stability

132. A controller essentially is a

A. Sensor

B. Clipper

C. Comparator

D. Amplifier

133. When brakes are applied on a moving vehicle the kinetic energy is converted to

A. Mechanical energy

B. Heat energy

C. Electrical energy

D. Potential energy

134. The force required to stop a vehicle is dependent on

A. The weight of vehicle

B. The declaration rate

C. Both A and B

D. None of the above

135. Handbrake is applicable to

A. Only front wheels

B. Only rear wheels

C. Both front and rear wheel.

D. All of the above.

136. The power brake may be exerted by

A. Electrical energy

B. Engine vacuum

C. Air pressure

D. All of the above

137. What does air bags, used for safety of car driver contain?

1.sodium bicarbonate.

2.sodium azide

3.sodium nitrate

4.sodium peroxide

138. Which country first use in air bags for aerospace industry.

1.Iindia

2.U.S

3. China.

4.Pakistan

139. Which spacecraft landing first use in air bags.

1.luna 9 and Luna 13.

2.luna 10 and luna 12

3.luna 11 and luna 4

4.luna 16 and luna 18

140. First used in pedestrian air bags.

1. Volvo v50
2. Volvo v60
3. **volvo v40.**
4. Volvo v70

141. Who invented air bags in Japan.

1.Yasuzaburou kanka.
2. **Yasuzaburou kobori**
3. Varun Khatri.
4. Saurabh zombie

142. The time between the collision of two aircraft on a collision course is called_____

a) Differential time **b) Tau**

c) Traffic Time d) Collision Time

143.What is the surveillance range of a general TCS system?

a) 30 sec b) 20min

c) 2 min **d) 4 min**

144. Anti-collision system is also known as _____

a) Collision Avoidance System b) Pre-crash System

c) Collision Mitigation system d) Forward collision warning system

e) All of the above

145. In India, Autonomous Emergency Braking system (AEB) could become mandatory on new cars by_____

a) 2020 b) 2024

c) 2022 d) 2026

146. A 2015 study based on European and Australasian data suggests the AEB can decrease rear end collisions by_____%

a) 40%. **b) 38%**

c) 24%. d) 56%

147. What is adaptive cruise control?

1. **Adaptive cruise control is a safety and comfort providing technology in automobile**
2. Adaptive cruise control is automatic car driving technology
3. Adaptive cruise control is fast car driving technology
4. Adaptive cruise control is slow car driving technology

148. When was cruise control invented?

1. 1945
2. **1948**
3. 1952
4. 1961

149. Purpose of inventing Adaptive cruise control?

1. **To reduce accident**
2. To increase efficiency of automobile
3. To increase driving comfort
4. To invent new driving technology

150. Demerits of Adaptive cruise control?

1. System may fail
2. This system do not work on wet surface well
3. Not effective in bad weather
4. **All of the above**

151. Major components of Adaptive cruise control?

1. Radar sensor
2. ACC buttons on the steering wheel
3. Multi-information display
4. **All of the above**

152. Where is the ACC system most effective?

1. **In traffic conditions**
2. High ways
3. Hills
4. Wet and slippery surface

153.The following is not a drum brake

(A) External contracting brake
(B) Internal expanding brake
(C) Disc brake
(D) All of the above

154.In disc brake, the disc is attached to the

(A) wheel
(B) axle
(C) suspension system
(D) none of the above

155. The mechanical brakes are operated by means of

(A) levers
(B) bell cranks
(C) cams
(D) all of the above

156.Hydraulic brakes function on the principle of

(A) Law of conservation of momentum
(B) Law of conservation of energy
(C) Pascal's law
(D) None of the above

157.Tandem master cylinder consists of

(A) One cylinder and one reservoir
(B) Two cylinders and one reservoir
(C) One cylinder and two reservoirs
(D) Two cylinders and two reservoirs

158. Electronic Stability Program is use to

a) Assist in braking
b) Reducing loss of traction
c) Use in ECU
d) for proper loading and unloading of weight in vehicle

159. When the Electronic Stability Program system intervenes?

a) When it detect probable loss of steering control
b) When tire start to skid
c) When sudden brakes are applied
d) All of above

160. Electronic Stability control generally work when

a) Steering is in over steering and under steering condition
b) When collision has to be prevent

c) Fuel is low
d) Roads are uneven

161. Electronic Stability control can effect by
a) Dry road condition
b) Frozen road condition
c) both a and b
d) non of these

162. These are main components of Electronic Stability control system
a) Speed Sensor
b) Steering angle measurement angle
c) Yaw-rate sensor
d) All of the above

163.---------- is a feature that alerts a driver to an imminent crash and helps them use the maximum braking capacity of the car.

a) AEB
b) Air Bag
c) Vehicles
d) Electronic Stability control

164. The loads supported by an automobile frame are……..

a) Weight of the body and Passengers.
b) Torque from engine and Transmission.
c) Sudden Impact from Collision
d) All of the above.

165. What area of car is designed to deform in a collision ?

a) Crumple zone
b) Interior zone
c) Doors
d) Rear end

166. The energy absorb by brake is always kinetic.
a) No, potential
b) Kinetic or potential
c) Potential
d) Strain Energy

167. Hand brake is applicable to
(A) only front wheels
(B) only rear wheels
(C) both front and rear wheels
(D) all of the above

Chapter 2: <u>Process Engineering</u>

2.1 Process Boilers

1] A boiler is a device used to create steam by applying _____to water
a) Light energy b) **heat energy**
c) Wind energy d) mechanical energy

2] Process boiler is a type of boiler with a capacity of _____Buts per hour

a) 200,000 **b) 300,000**
c) 400,000 d) 50,000

3]_____is the most widely used media in distribution of heat over distance in industries

a) Steam b) light
c) Springs c) water

4] The temperature and pressure in saturated stem has_____relationship

a) Direct **b) indirect**
c) Neither of above d) both a and b

5] What should be the temperature of feed water?

a) 12^0 c b) 80^oc
c) 50^0c d) none of above

6] For caring the heat efficiently the steam must be_____

a) dry b) wet
c) saturated d) none of above

9] What happens when air dissolves in condensate?

a) non corrosive b) temperature of air increases
c) corrosive d) none of above

7]_____is used to release condensate in pipe work

a) steam trap **b) valves**
c) power generators d) none of above

8. Water tube boilers are those in which _____
   a) Flue gases pass through tubes and water around it
   b) Water passes through the tubes and flue gases around it
   c) Work is done during adiabatic expansion
   d) Change is enthalpy
9. Fire tube boilers are those in which _____
   a) Flue gases pass through tubes and water around it
   b) Water passes through the tubes and flue gases around it
   c) Work is done during adiabatic expansion
   d) Change is enthalpy
10. Size of boiler tubes is specified by _____
   a) Mean diameter and thickness
   b) Inside diameter and thickness
   c) Outside diameter and thickness
   d) Outside diameter and inside diameter
11. Cochran boiler is a _____
   a) Horizontal fire tube boiler
   b) Horizontal water tube boiler
   c) Vertical water tube type
   d) Vertical fire tube type
12. Locomotive boiler has _____
   a) 137 fire tubes and 44 superheated tubes
   b) 147 fire tubes and 34 superheated tubes
   c) 157 fire tubes and 24 superheated tubes
   d) 167 fire tubes and 14 superheated tubes
13. Water tube boilers produces steam at a_____ pressure than that of fire tube boilers.
   a) Higher
   b) Lower
   c) Same
   d) None of the above
14. The biggest loss in the boiler is _____

a) Moisture in fuel
b) Dry flue gases
c) Steam formation
d) Unburnt carbon

15.The draught in locomotive boilers is produced by a _____
a) Chimney
b) Centrifugal fan
c) Steam jet
d) All of the above

16.The draught may be produced by a_____
a) Chimney
b) Mechanical fan
c) Steam jet
d) All of the above

17.The efficiency of the plant _____ with the mechanical draught
a) Increases
b) Decreases
c) Remain constant
d) None of the above

18. Which of the following boiler is best suited to meet the fluctuating demand of steam.....
A]Locomotive boiler.
B]Lancashire boiler
C]Cornish boiler
D]Babcock and wilcox boiler

19. Which of the following is a water tube boiler.....
A]Locomotive boiler
B]Lancashire boiler
C]Cornish boiler
D]Babcock and wilcox boiler

20. The economiser is used in boilers to.....
A]Increase thermal efficiency of boiler
B]Economise on fuel
C]Extract heat from the exhaust the gases
D]Increase flue gas temperature

21. An economiser in a boiler.....
A]Increases steam pressure.
B]Increases steam flow
C]Decreases fuel consumption
D]Decreases steam pressure

22.In a condensation process, _____ to _____
A] Gas, Solid
B] Gas, Liquid
C] Liquid, Gas
D] Liquid, Solid

23. When vapour is compressed isothermally the _____ changes.
A] Volume.
B] Pressure
C] Temperature
D] None of the mentioned

24.Condensation starts _____ point.

A] Dew point

B] Bubble point

C] Triple point

D] None of the mentioned

25. When gas changes to liquid through the process of condensation, the temperature

A] Increases.

B] Decreases

C] Remains constant.

D] None of the mentioned

26.When vapour is cooled at constant total system volume, the _____ changes.

A] Volume.

B] Pressure

C] Temperature.

D] None of the mentioned

27. Which of the following boiler is best suited to meet the fluctuating demand of steam.....

A locomotive boiler. B Lancashire boiler

C Cornish boiler D Babcock and wilcox boiler

28. Boiler efficiency is a measure of how effectively _____ energy in fuel is converted into heat energy in steam going to the turbines

A Chemical energy B Heat energy

C Thermal energy D All of the above

10. A _____ incorporates a firebox or furnace in order to burn the fuel and generate heat.

A Steam **B Boiler**

C Hydrogen D None

29. The water tubes in a simple vertical boiler are _____

a. Horizontal
b. Vertical
c. Inclined
d. All of the above

30. The diameter of fine tubes in Cochran boiler is of order of _____

a. 2cm
b. 6cm
c. 8cm
d. 15cm

31. The diameter of internal flue tubes of a Lancashire boiler is about _____ that of it's shell

a. One fourth
b. One third
c. Two fifth
d. One half

32. Thermal of well-maintained boiler will be of the order _____

a. 30%
b. 55%
c. 90%
d. 45%

33. What is the temperature at which the steam boiler are Capable to withstand

a. 200°C
b. 280°C
c. 540°C

d. 358°C

34. Where are steam boilers used in the industries
    a) heating requirement for facility
    b) steam for batching
    c) steam for processing
    d) all of the above

35. Which of the following is not a part of a boiler
    a) burner the combination
    b) chamber
    c) water reservoir
    d) None above

36. The heat in the boiler is used for making _____
    a) steam
    b) condensing process
    c) ice
    d) none of these

37. How many cooling towers are there near a reactor
    a) 1
    b) **4**
    c) 5
    d) 2

38. Cooling Towers vary from size of 40 metres to
    a) 400
    b) 120
    c) 450
    d) 560

39. What is the main component in a boiler
    a) steam
    b) heat
    c) pressure condenser
    d) combination

40. Which cooling Towers use a process similar to the one found in small evaporation active cooling units
    a) hyperbolic
    b) Tower
    c) condensate loop
    d) none of these

41. What is the reason to service a cooling tower?
    a) to ensure proper air flow
    b) to clean the tubes
    c) to inspect the water pump
    d) all of these

42. A _____ is a type of heat exchange system where water is heated to its' boiling point via combustion of a fuel blown through a tube submerged in water.
    a. Condensate loop
    b. Hyperbolic cooling tower
    c. Steam boiler
    d. All of above

43. The heat produced in this system is then rejected into the system as _____
    - **a. Steam**
    - b. Boiler
    - c. Both a & b
    - d. None
44. A -_____ incorporates a firebox or furnace in order to burn the fuel and _____ heat.
    - **a. Boiler, generate**
    - b. Heat, boiler
    - c. Steam, pressure
    - d. None
45. A boiler is an enclosed vessel that provides a means for _____ and _____ heat to water until it becomes hot water or steam.
    - a. Generate, boiler
    - b. Condenser, loop
    - **c. Combustion, transfers**
    - d. All of above
46. Steam produced in a boiler can be used for a variety of purposes including space heating, drying and _____
    - a. Sterilization
    - b. Humidification
    - c. Power generation
    - **d. All of above**
47. The _____ system includes anywhere that the steam condenses to form liquid water.
    - a. Loop
    - b. Power
    - c. Liquid
    - **d. Condensate**
48. The back pressure created by lift is approximately _____PSIG for every 2 feet of condensate lift.
    - **a. 1 PSIG**
    - b. 3PSIG
    - c. 1PSGI
    - d. 3PSGI
49. Condensate is the liquid formed when steam passes from the _____ to the_____state.
    - a. Vapor, solid
    - b. Solid, liquid
    - **c. Vapor, liquid**
    - d. None
50. A _____ incorporates a firebox or furnace in order to burn the fuel and generate heat.
    - Steam
    - **Boiler**
    - Hydrogen
    - None
51. The generated heat is transferred to water to make _____ the process of boiling.
    - **Steam**
    - Boiler
    - Both
    - None

52. Steam is regularly used for propulsion (as a driving force) in applications such as _____ turbines.
    - Gas turbine
    - **Steam turbine**
    - Water turbine
53. Steam Boilers is used in _____industries
    - Heating Requirement for Facility.
    - Steam for Batching.
    - Steam for Processing.
    - **All of the above**
54. Industrial boilers are closed vessels that use a fuel source or electricity to generate _____for industrial purposes.
    - Fuel
    - Food
    - **Steam**
55. Basic Parts of a Boiler.
    - Burner,
    - the combustion chamber,
    - the heat exchanger
    - **All of the above**
56. Boiler water pH refers to a quantitative figure that expresses the acidity or alkalinity of boiler water. Ideally it should be between
    - **8.5 to 9.5**
    - 7.5 to 8.5
    - 9.5 to 10.5
57. Steam Properties and Qualities**:**
    - they are capable of dividing and renewing themselves for long periods
    - they are unspecialized
    - they can give rise to specialized cell types.
    - **All of above**
58. On mollier chart ,free expansion or throttling process from High pressure to atmosphere is represented by
    - **Horizontal straight line**
    - Vertical straight line
    - Straight inclined line
    - Curved line
59. What is the function of boiler?
    - To burn the fuel in a confined closed system With the supply of air
    - To generate steam in varying pressure
    - **To generate steam at constant pressure**
    - To produce flue gases by burning fuel at a given pressure
60. What is the temperature at which the steam boiler are capable to withstand
    - 200°C
    - 280°C
    - **540°C**
    - 358°C
61. What increase as steam pressure increase inside a boiler
    - Force

- **Density**
- Rate of steam conversion
- Viscosity

62. In what is water in high pressure boiler circulated through?
    - Conduits
    - Cove
    - Channel
    - **Tubes**
63. Why single boiler unit per turbine is equipped commonly?
    - **For better turbine control**
    - To reduce the cost
    - For overcoming losses of power
    - To improve the efficiency
64. Cornish boiler is an example of which types of boiler?
    - **Fire tube boiler**
    - Water tube boiler
    - Vertical tube boiler
    - Extremally fired boiler
65. Which of these is a stationary boiler?
    - Locomotive boiler
    - Marine boiler
    - Mobile boiler
    - **Babcock Wilcox boiler**
66. What is the steam pressure limit of natural circulation Boiler?
    - 650 bar
    - **180 bar**
    - 400 bar
    - 550 bar
67. A device known as a _____ is used to release condensate from the pipework whilst preventing the steam from escaping from the system.
    a. **Steam traps**
    b. Steam pipes
    c. Boiler nose
    d. Release valve
68. Which of these is a ‘fissile fuel’?
    a. **Thorium**
    b. Carbon
    c. Potassium
    d. Graphite
69. What kind of energy output is obtained from a ‘Steam Power Plant’?
    a. Heat energy
    b. Sound energy
    c. **Electricity**
    d. Thermal energy
70. Water that is fed back to the boiler by the pump is called?
    a. Absorber
    b. Absolute
    c. Compressor
    d. **Condensate**

71. Which of these is an output of a 'Furnace'?

a. Fuel gas

b. Cool Air

c. **Flue gases**

d. Water Vapor

72. The product of efficiency & heat transferred to the working fluid is?

a. Net temperature change

b. **Net work done**

c. Net enthalpy change

d. None of the mentioned

73. Rankine cycle efficiency in a good steam power station may be in the range between.....

a.15% - 20%

b.**35% - 40%**

c.50% - 60%

d.90% - 95%

74. The following is the correct order of energy conversion in thermal power plants

a. **Chemical energy – Mechanical energy – Electrical energy**

b. Mechanical energy – Chemical energy – Electrical energy

c. Wind energy – Mechanical energy – Electrical energy

d. Heat energy – Electrical energy – Mechanical energy.

75. Feed water usually at…… °C temperature.

a) 70 b) 120

c) 1000 **d) 80**

76. If the water level inside the boiler were not carefully control cased…

a) explosion b) overheat and fail

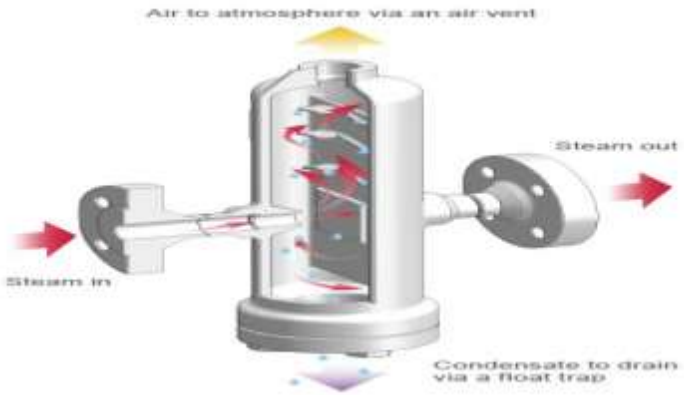
c) both a) & b) d) None of above

77. when steam is condensate volume is drastically…….

a) reduces b) increase

c) both a) & b) d) None of above

78. Following image shows part of……



a) compressor **b) separator**

c) steam tube d) boiler shell

79. Direct relation between…….. &……of saturated steam, the amount of energy input to process easy to control.

a) volume, pressure b) volume, temperature

c) temperature, pressure d) None of above

80…… is excellent carrier of heat

a) Water **b) steam**

c) solid d) None of above

81. A steam and condensate system represents a _____ loop.
    - Discontinuous
    - **Continuous**
    - None of the above
    - All of the above
82. Once the condensate reaches the _____ , it becomes available to the boiler for recycling.
    - Condenser
    - Turbine
    - **Boiler**
    - Generator
83. A boiler or steam generator is a device used to create steam by applying heat energy to _____.
    - **Water**
    - Petrol
    - Oil
    - All of the above
84. Which of the following is not a type of boiler?
    - Fire tube boiler
    - Water tube boiler
    - Cast iron boiler
    - **Hot water boiler**
85. Which of the following is the combustion accessory of a boiler?
    - Fuel oil system
    - Gas system
    - Coal system
    - **All of the above**
86. Find the wrong statement.
    - Boiler is used to produce electricity in the energy business.
    - Boiler is used to produce steam for generating electricity.
    - **Boiler can pressurize the water and can also evaporate it.**
    - All are wrong.
87. When the bubbles of steam are produced?
    - **Once the water reaches saturation temperature**
    - Once the water starts evaporating
    - Once the temperature decreases
    - None of the above
88. If steam is pressurized _____
    - It occupies more space
    - **It occupies less space**
    - Both are correct
    - None of the above
89. Combustion air positive shut-off shall be provided on all newly installed _____
    a. Grant boilers
    b. Process boilers
    c. Worcester boilers

d. All of the above

90. Process boilers with capacity of 2.5 MMBtu/h and above are also referred as _
    a. Natural draft boilers
    b. Atmospheric boilers
    c. Both a. And b.
    d. None of the above
91. A flue damper and a vent damper are two examples of _____
    a. Combustion air positive shut off devices
    b. Combustion air negative shut off devices
    c. Both a. & b.
    d. None of the above
92. For process boilers , combustion air fans must meet the following requirements ___
    a. The fan motor shall be driven by a variable speed drive
    b. The fan motor shall include controls that limit the fan motor demand to no more than 30 %.
    c. Both a. & b.
    d. None of the above
93. Use of _____ is prohibited in process boilers.
    a. Use of a common gas
    b. combustion air control linkage
    c. jack shaft
    d. All of the above
94. Oxygen trim control strategy __
    a. continuously measures the oxygen content in the flue gas
    b. adjusts the combustion air flow
    c. Continually tuning the air-fuel mixture.
    d. All of above
95. It is easy to detect and monitor excess air
    a. As oxygen not used for combustion is heated and discharged with the exhaust gases.
    b. Oxygen is discharged without heating
    c. Both a. & b.
    d. None of above
96. Detecting and monitoring carbon monoxide assures the air/fuel ratio is not too rich as
    a. The excess air is trimmed
    b. Excess air is let out
    c. Both a. & b.
    d. None of above
97. Based on the exhaust gas analysis, a controller maintains stoichiometric combustion __
    a. by commanding a servo motor to adjust the combustion air damper
    b. By commanding servo motor to adjust the fuel supply valve.
    c. Both a. & b.
    d. None of the above.
98. Combustion is the ideal air/fuel ratio where
    a. the mixing proportion is correct,
    b. the fuel is completely burned
    c. the oxygen is entirely consumed
    d. **All of the above**

99. Green coal, in order to be burnt, must be

(A) Heated sufficiently

(B) Burnt in excess air
(C) Heated to its ignition point
(D) Burnt as powder
100. A safety valve usually employed with stationary boilers is
(A) Lever safety valve
(B) Dead weight safety valve
(C) High steam and low water safety valve
(D) All of these
101. The relative heat absorption for successively added equal areas of boiler convection heating surfaces_____
(A) Increases
(B) Decreases
(C) Remain unaffected
(D) First increases and then decreases
102. The pressure of steam in the engine cylinder at the beginning of the stroke is _____ the boiler pressure.
(A) Equal to
(B) Less than
(C) Higher than
(D) None of these
103. Adiabatic process is
(A) Essentially an isentropic process is_____
(B) Non-heat transfer process
(C) Reversible process
(D) Constant temperature process
104. Presence of moisture in fuel oil would
(A) Keep the burner tips cool
(B) Aid in proper combustion
(C) Because sputtering, possibly extinguishing flame
(D) Clean the nozzles
105. In a steam condenser, the partial pressure of steam and air are 0.06 bar and 0.007 bar respectively. The condenser pressure is
(A) 0.007 bar
(B) 0.053 bar
(C) 0.06 bar
(D) 0.067 bar
106. Find false statement about effect of sulphur in fuel?
(A) It has heating value
(B) It helps in electrostatic precipitation of ash in flue gases
(C) It leads to corrosion of air heaters, ducting, etc. if flue gas exit temperature is low
(D) It erodes furnace walls
107. The isentropic enthalpy drop in moving blade is two-third of the isentropic enthalpy drop in fixed blades of a turbine. The degree of reaction will be
(A) 0.4
(B) 0.56
(C) 0.67
(D) 1.67

108. A turbine is said to have an axial discharge when the steam leaves the blade tip at _____ to the direction of the blade motion.

(A) 60°

(B) 90°

(C) 180°

(D) 270°

109. Which of the following is not a result of the excess of impurity in boiler-feed.

a) Scale and sludge formation

b) **Decomposition**

c) Corrosion, priming and foaming

d) Caustic embrittlement

110. If the precipitate formed is soft, loose and slimy, these are _____ and if the precipitate is hard and adhering on the inner wall, it is called _____

a) **Sludges, scale**

b) Scale, sludges

c) Sludges, rodent

d) Scale, rodent

111. Which of the following option is incorrect about the sludges?

a) Sludges are soft, loose and slimy precipitate

b) They are non-adherent deposits and can be easily removed

c) **Formed generally at heated portions of the boiler**

d) Can be removed by blow down operation

112. The propulsion of water into steam drum by extremely rapid, almost explosive boiling of water at the heating surface is called _____

a) Foaming

b) **Priming**

c) Corrosion

d) Caustic embrittlement

113. The phenomenon during which the boiler material becomes brittle due to accumulation of caustic substances is known as _____

a) Foaming

b) Priming

c) Corrosion

d) **Caustic embrittlement**

114. Foaming is caused by the formation of _____

a) Acids

b) Alcohols

c) Oils and alkalis

d) Ketones

115. Boiler is a enclosed vessel that provides

a) Expansion

b) Ignition

c) Combustion

d) None of the above

116. High pressure boilers operate at

1. Lower than 15 psig
2. **Higher than 15 psig**
3. 15 psig

4. None of above

117. Boiler works from application of which type of energies
    1. Fuel combustion
    2. Electricity
    3. Nuclear energy
    4. **All of above**

118. Combustion of which fuels from following is source of heat for boiler
    1. Wood
    2. Coal
    3. Oil
    4. **All of above**

119. Boilers are used in places like
    1. Domestic heating
    2. Commercial heating
    3. Industrial heating application
    4. **All of above**

120. Type of Lamont boiler is_____
    a. **Forced circulation**
    b. Natural circulation
    c. Over-through
    d. Positive forced circulation

121. What is called as the heart of the Lamont boiler?
    a. Water drum
    b. **Centrifugal pump**
    c. Furnace
    d. Blower

122. Through what is feed water from hot-well is passed through, before entering steam and water drum in Lamont boiler?
    a. Evaporator tubes
    b. **Economizer**
    c. Distributor header
    d. Circulating pump

123. In what form are the boiler tube arrange in Lamont boiler ?
    a. Parallel in vertical
    b. Inclined vertically
    c. **Parallel in horizontal**
    d. Horizontally inclined

124. Through which does the even circulation of water is possible in Lamont boiler ?
    a. **Nozzles**
    b. Water trough
    c. Feed pump
    d. Hose

125. What is the pressure range between which Lamont boiler operator ?
    a. 80-120 bar
    b. **120-160 bar**
    c. 180-360 bar
    d. 450-560 bar

126. In which year was Lamont boiler invented?
    a. 1905
    b. 1910
    c. 1920

d. 1925

127. What type of steam is generated by evaporator tube of Lamont boiler ?
    - **a. Saturated steam**
    - b. Unsaturated steam
    - c. Superheated steam
    - d. Flash steam
128. Where is water steam separator drum located in Lamont boiler ?
    - a. Inside of the boiler
    - b. Right above the furnace
    - c. Before the feed water pump
    - **d. Outside the boiler**
129. What is the main disadvantage of Lamont boiler ?
    - a. Less flexible in design
    - b. Low heat transfer rate
    - **c. Formation of bubbles**
    - d. Low steam generation capacity

1.2 Introduction to ultra-supercritical boiler

130. A supercritical boiler is one that operates above the pressure and temperature of following values
    - a) 100 kg/cm² and 540°C
    - b) 1 kg/cm² and 100°C
    - **c) 218 kg/cm² abs and 373°C**
    - d) 218 kg/cm² abs and 540°C
131. Steam is generated in a _____ boiler at a pressure above the critical point.
    - a) Simple
    - b) once through
    - **c) Superficial**
    - d) thrice through
132. Apart from feed heating, what should a plant have to obtain a gain in thermal efficiency?
    - a) Lubrication
    - b) Differential heating
    - c) **Reheating cycles**
    - d) Regenerative cycles
133. What is the critical point of steam generation in a “once through” boiler?
    - a) 221.5 bar
    - b) 221.4 bar
    - c) 221.3 bar
    - d) **221.2 bar**
134. In a typical layout of a 215MW reheat power plant, the feed in the boiler is at?
    - a) 280 degree Centigrade
    - b) 230 degree Centigrade
    - **c) 238 degree Centigrade**
    - d) 250 degree Centigrade
135. The input to the low pressure feed water heater is from?
    - a) Drain heater
    - b) **Drain cooler**
    - c) Drain pipe
    - d) None of the mentioned
136. In which year was Benson boiler was invented?

a) 1918
b) 1920
c) 1921
d) 1922

137. What type of boiler is a Benson boiler?
a) Super critical boiler
b) Fire tube boiler
c) Natural circulation boiler
d) Over-through boiler

138. What is the capacity of Benson boiler?
a) 180 tonnes/hr & above
b) **150 tonnes/hr & above**
c) 250 tonnes/hr & above
d) 300 tonnes/hr & above

139. What is the major disadvantage of the Benson boilers?
a) Boiler is big in size
b) Has large storage capacity
c) **Deposition of salts**
d) Bubble formation

140.The increment in thermal efficiency compared to the corresponding Subcritical cycle is gained at the expanse of?
a) compactness of the plant
b) simplicity of the plant
c) **complexity of the plant**
d) expanse of the plant

141. The input to the low pressure feedwater heater is from?
a) Drain heater
b) Drain cooler
c) Drain pipe
d) None of the mentioned

142. Supercritical boiler generate___ to ___pressure.
a) 22Mpa to 25Mpa
b) 28Mpa to 20Mpa
c) 23Mpa to 27Mpa
d) 25Mpa to 28Mpa

143. supercritical boiler are use of……..
A. Thermal power. **B. Electric power**
C. Solar power. D. Steam power

144. Which type of boiler is used critical pressure……..
A. Benson boiler. B. Water tube boiler.
C. Fire tube. D. Steam boiler

145. Who patent design for boiler.
A. Mark Benson. B. Mark Zuckerberg
C. Newton. D. C.N. Rao

145. Which of the following needs to be incorporated to prevent the low pressure turbine exhaust wetness from being excessive?
a) Double regeneration
b) Double carbonization
c) Double reheat
d) Double cooling

146. A ultra-super critical boiler operates at……

a) Ultra-Supercritical pressure
b) Thermal pressure
c) Critical pressure
d) Atmospheric pressure

147. _____ terms are used to describe supercritical and ultra-supercritical coal generation by the coal industry.

(a) High- efficiency and low -emissions
(b) Low-efficiency and high- emissions
(c) High-efficiency and high- emissions
(d) Low-efficiency and low-emissions

148. In 1922,_____ was granted a patent for a boiler designed to convert at high pressure.

(a) Mark Benson
(b) James Watt
(c) Alexander Graham Bell
(d) Archimedes

150. What was the main concern behind Benson's concept ?

(a)Safety
(b) power generation
) c (conversationof energy
)d (All of the above

151 .The subcritical temperature is_____.

) a(. Up to809 F and221.2 bar
) b (Up to 705F and 221. 2bar
) c.(Up to900 F and344.3 bar
) d .(Up to 605F and 216. 3bar

152 .Ultra-supercriticaltemperature is up to _____.

a)). 1,400 °F
) b .(2,000 °F
) c .(1,600 °F
) d .(1,800 °F

153 .Which of these is not a type of steam generator depending upon the kind of applications?

) a) utility steam generators
) b) marine steam generators
) c) agricultural steam generators
) d) industrial steam generators

154 .The subcritical steam generators operate between a pressure ranges of?

) a) 120-160 bar
) b) 100-110 bar
) c) 130-180 bar
) d) 140- 200 bar

155 .Industrial steam generators operate at a steam capacity of?

) a) 1300 kg/s
) b) 1000 kg/s
) c) 500 kg/s
) d) 125 kg/s

156. Ultra-super critical boiler uses steam with very high temperature up to ……

a) 980°
b) 620°
c) 550°

d) 720°

157. A ultra-super critical boiler generates less emission per……of power output.
    a) Kilowatt
    b) Watt
    c) Megawatt
    d) Metric horse power
158. A ultra-super critical boiler was developed in the US in …….
    a) 1950s
    b) 1970s
    c) 1960s
    d) 1940s
159. Philo unit 6 in ohio was built by …….
    a) Thomas Savery
    b) Denis Papin
    c) Thomas Edison
    d) Babcock and Wilcox
160. If ……. has a future, then ultra-super critical boiler will be the key.
    a) Coal
    b) Fossil fuels
    c) Natural gas
    d) Oil
161. A ultra-super critical boiler technology is today the option of choice for most new……. fired power stations.
    a) Coal
    b) Natural gas
    c) Biogas
    d) Oil
162. In ultra-super critical boiler technology the units run at about ……. efficiency.
    a) 40%
    b) 50%
    c) 55%
    d) 45%
163. Yuhuan has ……. first 1000MW ultra-super critical pressure boiler.
    a) America
    b) China
    c) India
    d) Russia
164. Which type of generator is a type of boiler that at maximum critical pressure frequently used in the production of electric power.

a. **Supercritical boiler**
b. High pressure boiler
c. Low pressure boiler
d. None

165. Ultra supercritical boilers are mostly used in _____.
    a. Petrochemical industries
    b. Coal industries
    c. Textile industries
    d. none
166. Supercritical is ___% efficient than subcritical boiler.
    a. 42-47
    b. 50-55
    c. 32-38

d. More than 60

167. Find false statement
    a. Tube of supercritical boilers are self-supporting
    b. Corners are easy to form
    c. Uniform heating of water takes place in supercritical boiler occurs
    d. All

168. State disadvantage of Supercritical boiler.

a. Corrosion problem
b. Setting of material in feed lines can produce explosions
c. Leakage problem
d. All

169. What type of boiler is supercritical boiler

a. Drum type
b. Once through type
c. Both
d. None

170. A ultra-supercritical steam generator operates at pressures above the critical pressure-
    a. 2400 psi
    b. 1500 psi
    c. 3200 psi
    d. 4600 psi

171. The point of ultra-supercritical steam generator is to save on coal to heat the water and reduce _____ emissions.
    a. Oxygen (O_2)
    b. Water (H_2O)
    c. Carbon dioxide (CO_2)
    d. Both 'a' and 'c'

172. Because less coal is consumed in this system, emissions of _____ and particulate and solid waste by products are reduced.
    a. Sulphur dioxide (SO_2)
    b. Nitrogen oxide (NO_x)
    c. Carbon dioxide (CO_2)
    d. All of the above.

173. Higher plant efficiency up to_____ over the entire load range.
    a. 30%-50%
    b. 20%-40%
    c. 60%-90%
    d. 50%-80%

174. The world's first boiler using supercritical technology was introduced by "B&W" in _____
    a. 1948
    b. 1936
    c. 1928
    d. 1957

175. The thermal efficiency of a Watt's Beam Engine is about?
    a) 50%
    b) 100%
    c) 5%
    d) 2%

176. Among which locomotive steam engines have the highest efficiency?
    a) 1 MW
    b) 2 MW

c) 30 MW
d) 660 MW

2.3 Hyperbolic Cooling towers

177. Which of the following is the simplest method of cooling the condenser water?
A] Spray cooling pond
B] Cooling tower
C] Indirect air cooling
D] Hyperbolic cooling tower
178. Open cooling system is also called as _____
A] parallel system
B] once through system
C]air based system.
D] non-reversible system
179.What type of cooling system is used in the large power plants?
A] Cooling ponds
B] Natural flow system
C] Cooling towers.
D] Single deck system
180. Wet cooling towers (or open circuit cooling towers) operate on the principle of .....
A] Condensation.
B] Evaporative cooling
C] Both of the above
D] None of the above
181. How does outside air enter into the wet cooling system?
A] Air vents
B] Louvers.
C] Tuyeres
D] Vacuum
182. How is water circulated throughout the dry cooling tower system?
A] Finned tubes.
B] Metal pipes
C] Porous tubes.
D] Swirling tubes
183. Why is exhaust steam coming out of turbine is admitted to a steam header?
A] To increase the pressure.
B] To decrease the velocity
C] To decrease the pressure drop.
D] To control the pollution
184. How is air produced in mechanical draught cooling tower?
A] Air Tuyeres.
B] Propeller fans
C] Air blowers.
D] Louvre

185. Hyperbolic cooling towers generally used in the
   a) Steel industry
   b) Fertilizer industry

c) Alumina industry

d) Power industry

186. Design of hyperbolic cooling tower standard for all _____ cooling tower

a) Mechanical draft

b) Natural draft

c) Both a & b

d) Neither a & b

187. Beams of hyperbolic cooling towers are made up of

a) Tungsten

b) Iron

c) Stainless steel

d) Brass

188. Natural draft in hyperbolic cooling towers reduces _____ of fans

a) Damage

b) Efficiency

c) Cost

d) Speed

189. Hyperbolic design allows for use of _____ without sacrificing structural integrity

a) Minimum material

b) Maximum material

c) High quality material

d) Low quality material

190. Following is not the advantage of hyperbolic design

a) Less maintenance cost

b) Less initial cost

c) Less noise

d) All of the above

191. Following is advantage of hyperbolic design

a) Less initial cost

b) Less noise

c) Less vibration

d) All above

192. Hyperbolic cooling towers used in

a) Coal-fired power plant

b) Nuclear plants

c) Thermal power plant

d) All of these

193. Natural draft in hyperbolic cooling tower is used for production of

a) Fertilizer

b) Steel

c) Chemical

d) Electrical energy

194. When vapour is cooled at constant total system volume, the _____ changes.

A Volume. **B PRESSURE**

C Temperature. D None of the mentioned.

195. Approximately about_____ of cooling in cooling tower is through The sensible cooling

A 5% B 80%

C 20% D 40%

196. Condensation starts at _____ point.

A Dew B Bubble

C Triple D none of the mentioned

197. In which type of cooling system are nozzle arranged on different elevation?

A Single deck system B D**ouble deck system**

C Natural flow system D Direct flow system

198. The exhaust steam coming out of turbine is admitted to a steam header to

A Increase the pressure B decrease the pressure

C decrease the pressure drop D control the pollution

199. Wet cooling towers operate on the principle of .....

A Condensation. B **Evaporative Cooling**

C Both of the above D None of the above

200. The open cooling is also called as?

A Parallel system **B Once through system**

C Air based system D Nonreversible system

201. .How does outside air enter into the wet cooling system?

A Air vents **B Louvers**.

C Tuyeres D Vacuum

202. Which one of the following the maximum effect on cooling tower performance

A Fill media B Drift

C Lourvers D Casing

203. How many number of spray nozzle does each module on spray pond cooling system contain?

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

204. Which of the following is the simplest method of cooling the condenser water?

a. Spray cooling pond
b. Cooling tower
c. Indirect air cooling
d. Hyperbolic air cooling

205. In which type of cooling pond system are nozzles arranged on same elevation?

a. Single deck system
b. Double deck system
c. Natural flow system
d. Direct flow system

206. What are used in the direct flow system to transfer the pond batch uniting at intake?

a. Separators
b. Filters
c. Baffle walls
d. Porous pipes

207. What type of cooling system is used in the large power plants?

a. Cooling ponds
b. Natural flow system
c. Cooling towers
d. Single deck system

208. How is water circulated throughout the dry cooling tower system?

a. Finned tubes
b. Metal pipes

c. Porous tubes
d. Swifting tubes

209. Which of the following gives out highest pollutants to the atmosphere

1 cooling tower
2 water tower
3 steam tower
4 fire tower

210. What come out from the the cooling tower of a nuclear power plant

1 smoke
2 cool air
3 hot air
4 none of theses

211. What are built to cool down the cooling water in a power plant

1 Towers
2 Cooling pond
3 Air filter
4 non of these

212. What are present depend on cooling tower building material as well

1 pollution
2 population
3 dust
4 none of these

213. Why is exhaust system coming out of the turbine is admitted to a steam header

1 to increase the pressure
2 to increase the velocity
3 to decrease the pressure
4 to increase the velocity

214. Which of the following is a fissile fuel

1 carbon
2 potassium
3 thorium
4 graphite

215. How is air produced in mechanical cooling tower

1 air fan
2 propeller fans
3 air blowers
4 propeller blowers

216. _____ cooling towers use a process similar to the one found in small evaporative cooling units.

a. Hyperboloid
b. Tower
c. Condensate loop
d. None

217. Hyperboloid cooling towers have become the design standard for all _____draft cooling towers because of their structural strength and minimum usage of material.

a. Natural
b. Induce

c. Force
d. None

218. The hyperboloid shape also aids in accelerating the upward convective air flow, improving _____ efficiency.
    a. Heating
    b. Warming
    c. Cooling
    d. Cold
219. The _____ that are present depend on cooling tower building material, as well. Cooling towers are built of concrete, wood, plastic or metal.
    a. Heat
    b. Pollutants
    c. Cold
    d. All of Above
220. There are _____main types of cooling towers that are defined by how water or air passes through them.
    a. One
    b. Two
    c. Three
    d. Four
221. A _____ is a specialized heat exchanger in which air and water are brought into direct contact with each other in order to reduce the water's temperature.
    a. Cooling tower
    b. Heating tower
    c. Both
    d. All are wrong
222. How can we increase the efficiency of a cooling tower?
    a. Save energy.
    b. Reduce the amount of water being consumed.
    c. Decrease the amount of chemicals required for water treatment.
    d. All of above
223. There are two huge cooling towers close to building site of reactor __ and __ of the Chernobyl Power Plant.
    a. 1&3
    b. 4&5
    c. 2&5
    d. 1&4
224. Cooling towers vary in size from small roof-top units to very large hyperboloid structures that can be up to ____ meters tall and _____ meters in diameter, or rectangular structures that can be over 40 meters tall and 80 meters long.
    a. 200&100
    b. 100&50
    c. 200&50
    d. 200 &150
225. How do you service a cooling tower?

- Ensure Proper Airflow.
- Clean Your Tubes.
- Inspect the Water Pump.

- **All of above**

226. The hyperboloid shape also aids in accelerating the upward convective air flow, improving _____ efficiency.

- Performance
- **Cooling**
- Heating
- All of the above

227. _____ Cooling towers have become the design standard for all natural-draft cooling towers because of their structural strength and minimum usage of material.

- HCT
- CCT
- **Hyperboloid**
- None

228. The pollutants that are present depend on **_____** building material, as well.

- **Cooling tower**
- Water tower
- Steam tower
- Fire tower

229. The presence of these pollutants can cause a series of problems. The main problems that are caused_____

- are fouling,
- limestone formation,
- corrosion and biological
- **All of the above**

230. Most **cooling towers** are capacity rated at a "standard" **wet bulb temperature** of ___of

- 72°F
- 52°F
- **78°F**
- 75°F

231. When sizing a cooling tower the highest anticipate_____ should be used?

- Dry bulb
- **Wet bulb**
- Both dry and wet bulb
- None of the above

232. In _____ cooling tower there is no direct contact between the water and Air.

- Dry type
- Evaporative type
- Once through
- **All of the above**

233. In cooling tower ,higher temperature _____ corrosion potential

- Decrease
- **Increase**
- Temperature has no effect on corrosion

234. Which of the following faction affect the cooling tower performance?

- The range
- Heat load
- Wet bulb temperature
- **All of the above**

235. In which system is Cooling of hot water is done on tray as step by?
a) Mechanical draught cooling system
b) Hyperbolic cooling tower
c) **Atmospheric cooling tower**
d) Wet cooling tower

236. How does the flow of air occur in natural draught cooling towers?
a) **Natural pressure head density between cold outside air and humid inside air**
b) Variation in pressure of both cold outside air and humid inside air
c) Due to the given air vents and vacuum ports
d) Because of difference in the volume of both the of airs

237. The first hyperboloid shaped cooling tower was introduced by the Dutch engineers Frederik van Iterson and Gerard Kuypers and built in ……..
a) **1918** c) 1919
b) 1870 d) 1920

238.Hyperbolic cooling towers are made up of high height reinforced ……structure.
a) plastic c) metal
b) alloy d) **concrete**

239. The hyperbolic cooling towers are associated with ……. and …….. power plants.
a) electrical, thermal c**) thermal, nuclear**
b) nuclear, electrical d) none of above

240. Wind is the prime lateral load and its combination with self-weight of the tower shell can cause the buckling instability leading to …….failure.
a) polytropic c) **catastrophic**
b) both a) & b) d) none of above

241. Cooling efficiency of a cooling tower is significantly affected under cross-wind condition and might decrease to…… in the range of moderate to high wind velocity condition.
a) 50% c) 25%
b) 75% d) 90%

242. The …….-induced response of cooling tower is the key factor to improve safety and to reduce tower crack.
a) wind c) heat
b) water d) steam

243. Wind load analysis can be performed following methods.
a) experiments wind pressure coefficient
b) shape factors
c) wind-induced vibration coefficient
d) all of above

244. The ……..used to improve the stability of the total structure HCT.
a) concrete material c) wind properties
b) stiffening rings d) functional structure

245. For achieving maximum buckling stability use…….parameters.
a) location c) quantity
b) dimensions **d) All of above**

246. Natural draft cooling towers are mainly used in the _____.
- Steel industry
- Fertilizer industry
- Alumina industry

- **Power stations**

247. A better indicators for cooling tower performance is _____.

- Wet bulb temperature
- Dry bulb temperature
- Range
- **Approach**

248. Cooling tower effectiveness is the ratio of _____.

- **Range/(range + approach)**
- Approach/(range + approach)
- Range/ Approach
- Approach/ Range

249. The cooling water reduces the water temperature close to _____.

- Dry bulb temperature
- **Ambient wet bulb temperature**
- Dew point temperature
- None of the above

250. The ratio of dissolved solids in circulating water to dissolved solids in makeup water is called.

- Liquid gas ratio
- **Cycle of concentration**
- Cooling tower effectiveness
- None of the above

251. Which one of the following is true to estimate the range of cooling tower?

- Range = Cooling water inlet temperature- wet bulb temperature
- Range = Cooling water outlet temperature- wet bulb temperature
- **Range = heat load in kcal per hour / water circulation in liters per hour**
- None of the above

252. Which one of the following fill material is more energy efficient for cooling towers in case of sea water cooling?

- Splash fill
- **Film fill**
- Low clog film fill
- None of the above

253. L/G ratio in a cooling tower is a ratio of _____.

- Length and girth
- Length and temperature gradient
- **Water flow rate and air mass flow rate**
- Air mass flow rate and water flow rate

254. Normally the guaranteed best approach a cooling tower can achieve is _____.

- 5°C
- 12°C
- 8°C
- **2.8°C**

255. Hyperbolic cooling towers have become design standard for all natural draft towers because

a. Their structural strength

b. Minimum usage of material.
c. Improving cooling efficiency
d. All of the above.

256. Common applications of Cooling towers include
a. Cooling the circulating water used in oil refineries
b. petrochemical and other chemical plants
c. thermal power stations
d. All of the above.

257. The hyperboloid cooling towers are often associated __
a. with nuclear power plants
b. Used in some coal-fired plants
c. In some large chemical and other industrial plants.
d. All of the above.

258. _____ type of cooling towers are structurally strong.
a. Counter flow towers
b. Hyperbolic towers
c. Cross flow towers
d. None of the above

259. Which type of cooling towers operate through a chimney or stack ___
a. Cross flow
b. Counter flow
c. Hyperbolic
d. All of above

260. Hyperbolic cooling towers are also referred as
a. Natural draft towers
b. Cross flow towers
c. Hyperboloid towers
d. None of the above

261. _____ type of cooling towers are used with nuclear power plants.
a. Cross flow
b. Natural draft
c. Hyperbolic
d. None of above

262. Improved cooling efficiency and minimum usage of material are the key features of _____
a. Natural draft cooling towers
b. Cross flow towers
c. Hyperbolic cooling
d. All of above

263. The first hyperbolic cooling tower was built in...
a. 1916
b. 1917
c. 1918
d. 1919

264. Thermal efficiencies up to.....have been observed in hybrid cooling towers
a. 92
b. 82
c. 72
d. 62

265. In which system is Cooling of hot water is done on tray as step by?

a. Mechanical draught cooling system
b. Hyperbolic cooling tower
c. Atmospheric cooling tower
d. Wet cooling tower

266. Which of the following is the simplest method of cooling the condenser water?

- **Spray cooling pond**
- Cooling tower
- Indirect air cooling
- Hyperbolic cooling tower

267. Natural Draft or Hyperbolic towers have been used for

- **Large Capacity of water**
- Small Capacity of Water
- High Efficiency
- Low capital cost

268. Why is exhaust steam coming out of turbine is admitted to a steam header?
a) To increase the pressure
b) To decrease the velocity
c) To decrease the pressure drop
d) To control the pollution

269. In which system is Cooling of hot water is done on tray as step by?
a) Mechanical draught cooling system
b) Hyperbolic cooling tower
c) Atmospheric cooling tower
d) Wet cooling tower

270.. How does the flow of air occur in natural draught cooling towers?
a) Natural pressure head density between cold outside air and humid inside air
b) Variation in pressure of both cold outside air and humid inside air
c) Due to the given air vents and vacuum ports
d) Because of difference in the volume of both the of airs

271. How is air produced in mechanical draught cooling tower?
a) Air Tuyeres
b) Propeller fans
c) Air blowers
d) Louvre

272. Why is induced draught considered better than the forced draught?
a) Because power requirement is high for forced draught
b) Maintenance of induced draught fan is costlier
c) Forced draught is less efficient
d) Forced draught produces less amount of speed of air

273. Natural draft cooling tower are mainly used in
a) Steel Industry
b) Alumina industry
c) Fertilizer industry
d) Power station

274. Cooling tower effectiveness is the ratio of
a) Range/(Range + approach)
b) Approach/(range + approach)
c) Range /(range - approach)

d) Approach/ /(range - approach)

275. Which one of the following is true to estimate the range of cooling tower?

a) Range = cooling water inlet temperature – wet bulb temperature
b) Range = cooling water outlet temperature – wet bulb temperature
c) Range = heat load in kcal per hour / water circulation in lines per hour
d) None of the above

276. The ratio of dissolved solids in circulating water to the dissolved solids in makeup water is called

a) Liquid gas ratio
b) Cycle of concentration
c) Cooling tower effectiveness
d) None of the above

278. Cooling tower is a _____device

a) Heat absorption **b) heat rejection**
c) Both a and b c) neither a nor b

279. In natural draft cooling tower the air flow is obtained by_____

a) Difference in air pressure b) difference in air temperature
c) Difference in air speed d) none of the above

280. In the natural draft cooling tower_____ is not required

a) Fan b) tower
c) Nozzle d) none of the above

281. Which among the following are the components of natural draft cooling tower

a) Supply basin **b) reinforced concrete**
c) Hot water distribution d) none of the above

282. Water lost in form of liquid droplet is called as _____

a) Drift b) water loss
c) Water evaporation d) none of the above

283. The effect that takes place which results in cooling action is

1. Condensing
2. Heating
3. Cooling
4. **Evaporating**

284. How many times year cooling water must be cleaned

1. Once a year
2. Thrice a year
3. **Twice a year**
4. Four times a year

285. How many times chlorination must be carried out for cooling towers

1. **Twice a year**
2. Once a year
3. Thrice a year
4. None of above

286. Cooling towers operate through a ____process that efficiently cools the already cycled water to be reused.

1. Heat exchange
2. Heat expand
3. **Heat transfer**
4. None of above

287. In hyperboloid cooling towers the material is filled at

1. Tower’s bottom

2. **Tower's top**
3. Near tower
4. None of above

288. Pollution caused by cooling tower includes
1. Fouling
2. Limestone formation
3. Corrosion
4. **All of above**

2.4 Waste Heat Recovery-Process Industry

289. Out of the following which one is not unconventional source of energy?
(A) Tidal power
(B) Geothermal energy
(C) Nuclear energy
(D) Wind power.
290. Pulverized coal is
(A) Coal free from ash
(B) Non-smoking coal
(C) Coal which bums for long time
(D) Coal broken into fine particles.
291. Heating value of coal is approximately in power plant
(A) 1000-2000 kcal / kg
(B) 2000-4000 kcal / kg
(C) 5000-6500 kcal / kg
(D) 9000-10,500 kcal / kg.
292. Water gas is a mixture of
(A) CO2 and O2
(B) O2 and H2
(C) H2, N2 and O2
(D) CO, N2 and H2.
293. Coal used in power plant is also known as
(A) Steam coal
(B) Charcoal
(C) Coke
(D) Soft coal.
294. Which of the following is considered as superior quality of coal?
(A) Bituminous coal
(B) Peat
(C) Lignite
(D) Coke.
295. In a power plant, coal is carried from storage place to boilers generally by means of
(A) Bucket
(B) V-belts
(C) Trolleys
(D) Manually.
296. Live storage of coal in a power plant means

(A) Coal ready for combustion
(B) Preheated coal
(C) storage of coal sufficient to meet 24 hour demand of the plant
(D) Coal in transit.
297. Pressure of steam in condenser is
(A) Atmospheric pressure
(B) More than atmospheric pressure
(C) Slightly less than atmospheric pressure
(D) much less than atmospheric pressure.
298. Equipment used for pulverizing the coal is known as
(A) Ball mill
(B) Hopper
(C) Burner
(D) Stoker

299. Major advantage of waste heat recovery in industry is:
a) Reduction in pollution b) increase in efficiency
c) Both a & b d) none of the above

300. Heat recovery equipment will be most effective when the temperature of flue gas is:
a) 250oC b) 200 oC **c) 400** oC d) 280 oC

301. The waste gases coming out from gas turbine exhausts are of the order of:
a) 370-540 b) 450 – 700 c) 700-800 d) 250-440

302. Recuperated is used mainly as a waste heat recovery system in a ____.
a) Boiler **b) Billet Reheating Furnace**
c) Compressor d) None of the above

303. Recuperated will be more efficient if the flow path of hot and cold fluids is in:
a) Co-current mode **b) Counter current mode**
c) Cross current mode d) Cone of the above

304. The major limitation of metallic recuperated is -------
a) Limitation of handling COx, NOx etc.
b) Limitation of reduced life for handling temperature more than 1000 oC
c) Manufacturing difficulty of the required design
d) None of the above

305. Ceramic remunerators can withstand temperatures up to:
a) 600 oC **b) 1300 oC** c) 1700oC d) 950oC

307. Air preheater is not used as a waste heat recovery system in a____.
a) Boiler b) billet Reheating Furnace
c) Heat treatment furnace **d) compressor**

308. Typical waste gases temperature from glass melting furnace
a) 1000-1550 oC b) 800-950 oC c) 650–750 oC d) 760-815 oC

309. Regenerator is widely used in:
a) Reheating Furnaces b) heat treatment furnaces
c) Baking Ovens **d) glass melting furnaces**

310. In a low to medium temperature waste heat recovery system which of the device is most suitable
a) Economiser
b) Heat wheels
c) air preheater
d) Recuperator

311. Recovery of heat from dryer exhaust air is a typical application of:

a) Waste heat recovery boiler
b) Heat pump
c) Heat wheel
d) Economizer

312. Capillary wick is a part of
a) heat pump
b) heat wheel
c) heat pipe
d) regenerator

313. Economizer is provided to utilize the flue gas heat for ___
a) preheating the boiler feed water
b) preheating the stock
c) preheating the combustion air
d) preheating fuel

314. Recovery of waste heat from hot fluid to fluid is called:
a) thermo compressor
b) waste heat recovery boiler
c) heat Pump
d) economizer

315. Thermo-compressor is commonly used for
a) compressing hot air
b) flash steam recovery
c) distillation
d) reverse compression of CO2

316. The exchanger typically used in the pressurizing section of a dairy plant is
a) Plate heat exchanger
b) Shell and tube exchanger
c) Run around coil exchanger
d) All of the above

317. Pick up the odd one out:
b) Regenerator
c) Recuperator
d) Metallic recuperator
e) Economiser

318. Energy recovery is typically via production of ____
a) Gas
b) Heat
c) Light
d) Steam

319.What is the maximum percent of energy recovered if the steam is condensed before reintroduced to system?
a) 25
b) 35
c) 45
d) 55

320. Which of the following industrial process uses waste as a fuel?
a) Cement kilns
b) Lead manufacturing
c) Acid manufacturing
d) Sulphur manufacturing

321. What is the combustion temperature range in cement kiln incineration?
a) 1300-1600

b) 1350-1650
c) 1250-1450
d) 1235-1600
322. Non-volatile heavy metals in kiln are fixed into ____
a) Clinker's crystalline structure
b) Fumes
c) Solid lump
d) Slag
323. Which of the following waste types are not suitable for co-combustion in cement kilns?
a) Chlorine
b) Hydrogen
c) Calcium
d) Carbonate
324. A major advantage of waste heat recovery in industry is
a) Reduction in pollution
c) Increase efficiency
d) None of the above
325. Nellore to medium temperature waste heat recovery system the most suitable device is ------
a) Economizer
b) Heat wheels
c) Air preheater
d) Recuperate
d) Carbonate
326. Which of the following act regulates transportation of hazardous waste?
a) RCRA
b) CERCLA
c) NEPA
d) NPL
327. When was the first law regarding transportation of hazardous materials passed?
a) 1966
b) 1866
c) 1855
d) 1965
328. Which of the following statute made transportation of hazardous materials illegal?
a) 1869
b) 1870
c) 1871
d) 1872
329. Which of the following act improves regulatory and enforcement activities?
a) HMTA
b) DOT
c) ICC
d) NPL
330. A waste heat recovery system in industrial process has been key to reduce ……. Consumption.
a) Coal
b) Fuel
c) Biogas
d) Oil
331. Heat loss can be classified into …….

a) High temperature
b) Low temperature
c) Medium temperature
d) All of the above

332. Heat recovery provides valuable energy sources and ……. consumption.
a) Reduce energy
b) Increase energy
c) Increase fuel
d) Reduce fuel

333. Techniques of waste heat recovery …….
a) Direct contact condensation
b) Indirect contact condensation
c) Transport membrane condensation
d) All of the above

334. One of the key areas for ……. energy saving in existing systems is waste heat recovery.
a) Potential
b) Kinetic
c) Thermal
d) Electrical

335. The biggest point sources of waste heat originate from ……. production.
a) Steel or Brass
b) Copper or Glass
c) Steel or Glass
d) Steel or Copper

336. The system is suitable to recover heat from …….. temperature exhaust gases .
a) Medium-low
b) Medium-high
c) High-low
d) High

337. The waste heat energy could be used to produce …….
a) Cool air
b) Hot air
c) Exhaust gas
d) All of the above

338. A waste heat recovery unit is an energy recovery heat exchanger that transfers heat from process outputs at ……..
a) High temperature
b) Medium temperature
c) Low temperature
d) Both a & b

339. A waste heat recovery unit (WHRU) is an_____ that transfers heat from process outputs at high temperature to another part of the process for some purpose, usually increased efficiency.
a. Energy recovery heat exchanger
b. Energy recovery heat diffuser
c. Both ‘a’ and ‘b’
d. None of the above

340. The waste heat recovery unit (WHRU) is a tool involved in _____.
a. Regeneration
b. Cogeneration
c. Both ‘a’ and ‘b’
d. None of the above

341. Using an organic fluid that boils at a low temperature means that energy could be regenerated from waste fluids is known as _____.

a. Heat exchanger
b. Heat remover
c. Heat pumps
d. Heat absorber

342. Traditionally, waste heat of low temperature range _____ has not been used for electricity generation despite efforts by ORC companies, mainly because the Carnot efficiency is rather low.

a. 0-250 °C
b. 0-150 °C
c. 0-200 °C
d. 0-120 °C

343. What are the benefits or the advantages of waste heat recovery units (WHRU)?

a. Reduced Pollution
b. Reduced equipment sizes
c. Reduced auxiliary energy consumption.
d. All of the above

344. A high temperature waste heat recovery unit consists of recovering waste heat at temperatures greater than _____.

a. 200 °C
b. 500 °C
c. 300 °C
d. 400 °C

345. Types of waste heat exchanger are:

a. Regenerative and recuperative burners
b. Economizers
c. Waste heat boilers
d. All of the above

346. Calculate the recoverable waste heat (Q, in kCal/hour) from flue gases using the following parameters: V (flow rate of the substance) 2000 m3/hr r (density of the flue gas): 0.9 kg/m3 Cp (specific heat of the substance): 0.20 kCal/kg oC DT (temperature difference): 120 oC h (recovery factor): 50%

a. 21600
b. 43200
c. 25600
d. 34000

347. In industrial operations fluids with temperature less than _____ are set as the limit for waste heat recovery because of the risk of condensation of corrosive liquids

a. 80C
b. 100C
c. 120C
d. 200C

Question Bank (I-scheme)

Name of subject: Emerging Trend in Mechanical Engg. **Unit Test: II**
Subject code: 22652
Course: ME6I
Semester: VI

Chapter 4: Energy Audit and Management

4.1 Standards and Labelling

1) Energy audit is a kind of scientific management method of ……
    a) Energy
    b) Power
    c) Force
    d) Fuel
2) Energy audit is conducted by……..
    a) government
    b) Company
    c) Energy utilization unit
    d) Auditor
3) Energy audit refers to the……..
    a) Inspecting
    b) Examining
    c) Analyzing
    d) All of the above
4) The targets of energy audit are….
    a) Investigating problem
    b) Rectifying problem
    c) Analyzing problem
    d) None of the above
5) The ultimate aim of energy audit is to encourage enterprises to…….
    a) Save energy
    b) Reduce production cost
    c) Increase economic benefit
    d) All of the above
6) During an audit and expert examines the facility for….
    a) Energy leakage
    b) Reduction
    c) Energy conservation
    d) None of the above
7) Energy audit is an assessment of…….
    a) How much energy a facility consumes
    b) How much money of facility consumes
    c) Cost of the facility
    d) Size of the facility

8) According to…… "energy audit" means verification, monitoring, analysis of use of energy including submission of technical report containing recommendations for improving energy efficiency with cost benefit analysis and an action plan to reduce energy consumption.
    a) Energy conservation act 2001
    b) Industrial act 1946
    c) Factory act 1947
    d) none of act
9) Energy audit can also save you significant amount of money by……..
    a) Maximum energy efficiency
    b) Minimum energy efficiency
    c) None of the above
    d) All of the above
10) The strategy of adjusting and optimising energy using systems and procedures so as to reduce energy requirements per unit of output while holding constant or reducing total cost of producing the output from the systems is…….
    a) Energy Management
    b) Energy audit
    c) Energy utilisation
    d) Energy wastage

11.The fundamental goal of energy management is to _____
A. Produce goods and provide services with least cost and least environmental effects
B. Produce goods and provide services with more cost and more environmental effects
C. Produce goods and provide services with No cost and no environmental effects
D. All of the above

12. Definition of energy management given by cape hart , turner and Kennedy is ____
A. The Judicious and effective use of energy to maximize profits and enhance competitive position.
B. The Judicious and effective use of energy to minimize profits and enhance competitive position.
C. The systematic approach for decision making in area of energy management.
D. All of the above

13. The objective of energy management is ____
A. To achieve and maintain optimum energy procurement and utilization throughout the organization
B. To minimize the energy cost without affecting production and quality
C. To minimize the environmental effects
D. All of the above

14. Energy savings is not the driving face when companies decide to purchase _____
A. New equipment
B. Ne resources
C. New technologies
D. New low tech materials

15.The systematic approach for decision making in area of energy management is _____
A. Energy audit
B. Energy savings
C. Energy effect
D. All of the above

16.The form of implementing the new energy efficiency technologies, new materials and new manufacturing process is _____

A. Energy management C. Energy savings
B. Energy audit D. All of the above

17. The major inputs for the economic development of any country is ____
A. Energy C. Energy management
B. Energy audit D. Energy saving

18. To balance the total energy inputs with its use which , serves to identify all the energy streams in a faculty is __
A. Energy management C. Energy saving
B. Energy audit D. Energy

19. In the case of developing country which sector assumes a critical importance in view of the ever increasing needs
A. Energy sector C. Energy audit sector
B. Energy management sector D. Energy saving sector

20 .The ultimate aim to encourage the enterprise to save the energy , reduce the production cost and increase economic benefits is ____
A. Energy audit C. Energy saving
B. Energy management D. Energy

21. Full form of BEE
a. Bureau of energy efficient
b. Basic electrical and electronics
c. Basic thermal engineering
d. None of the above.

22. BEE under the provisions of the act _____.
A. 2000 C) 2001
B. 2002 D) 1999

23. The standards and labeling scheme lunched in _____
A) may 2006 C) march 2006
B) Feb 2005 D) June 2006

24. A star rating, ranging from _____ in the asending order of energy efficiency.
A) 1 to 4. C) 1 to 5
B) 1 to 6. D) 1 to 10

25. The informative labels affixed _____.
A) Product. C) equipment
B) tool. D) machine .

26. _____ has been formulated by Bureau of energy efficient.
A) star labeling program. B) computer program
C) ranking program. D) None of the above.

27. BEE is under of ministry of _____.
A) health. B) defense
C) power. D) all of the above.

28. HVAC stands for _____.
A) heating, ventilation, air conditioning
B) height, velocity ,area
C) all of the above.
D) None of the above.

29. The Prohibit manufacturers sale and import such equipment _____.

A) which is confirm to the standard B) which does not conform to the standard

C) which is rejected. D) None of the above.

30. S&L stands for _____.

A) sale and lost. B) standard and labeling.

C) None of the above. D) All of the above.

31. _____ is a level of quality or attainment.

A) Standards C) monitoring energy

B) Labels D) none of the above

32. _____ mainly give consumers the necessary information to make informed purchase.

A) Energy management C) label

B) Standards D) energy efficiency

33. The full form of MEPS

A) Minimum energy protection standards C) minimum energy policies standard

B) Minimum energy performance standards D) minimum efficiency performance standards

34. The ratio of the total amount of heat that equipment can remove from the indoors to travel and amount of energy consumed by the equipment is known as

A) Energy performance ratio (EPR). C) Energy efficiency RATIO (EER).

B) Energy consumption ratio (ECR). D) None of the above

35. In power saving guides "more stars more savings".

A) True B) false

36. _____ is the minimum EER for 5-star in India in 2019.

A) 4.50 C) 4.00

B) 7.10 D) 4.49

37. What is the full form of BEE?

A) Basic electrical and electronics. C) Bureau of energy efficiency.

B) Bureau of energy equipment. D) all of the above.

38. In power saving guide efficiency parameter is mention.

A) True B) false

39. Allow consumer to compare the energy consumption of similar products and factor life time running cost into their purchasing decision is called as

A) Comparative label C) category label

B) Endorsement label D) none of the above

40. Provide a certification to inform prospective purchasers that the product is highly energy efficient for its category is known as.

A) Comparative label C) category label

B) Endorsement label D) none of the above

41. One time registration fee of rupees 1,00,000 for large-scale and Rs _____ for small scale industry.

A. 30,000 C. 15,000

B. 25,000 D. 28,000

42. S.S.I. stands for _____

A. Small scale industry C. Scanner scale industry

B. Scalar scale industry D. None of the above

43. Quality management system certificate has _____

A. ISO 9001. C. ISO 9005

B. ISO 9004. D. ISO 9006

44. S.S.I certificate is provided to _____ industry.

A. Large scale. C. Small scale

B. Medium scale. D. All of these

45. Agreement between BEE and user of label should be done on ₹ 100 _____ stamp paper.

A. Judicial stamp paper. C. Court fee stamp paper

B. Non judicial paper D. Normal fee paper

46. For each product under S&L scheme, BEE should upload the information on the ____ web portal

A. Government C. S&L web portal

B. Small scale web D. Private portal

47. The Bureau initiated the standard and labeling program from ___

A. 2006 C. 2009

B. 2008. D. 2010

48. The registration for BEE is done in _____ stage

A. Three stage. C. Four stage

B. Two stage. D. Single stage

49. The models applied to BEE should highlighted in the endorsement _____ sheet

A. Endorsement C. Blank

B. General. D. None of above

50. Labelling on the induction motor is voluntary

A. True

B. False

51…… are provided to the major kind of appliances in the form of lablels.

A) Graphic data. C) star rating

B) Star labeling. D) all of the above.

52. Star rating are given out of ……..

A) 3. C) 4

B) 5. D) 6.

53. The manufacturer are officially required to put this label as per the standards and labelling program introduce in……

A) 2004. C) 2005

B) 2006. D) 2007

54. Prime importance of star rating is …….. to consumer about how the energy efficient each product is.

A) Educate. C) Inform

B) Indicate. D) Educate and inform.

55. BEE (in star rating) stand for.

A) Bureau of Earth Efficiency . C) Bicycle energy expenditure

B) Bureau of Energy Efficiency . D) Bureau of Energy Expenditure

56. BEE star rating is solely based on appliance's power .....

A) Consumption. C) Delivery.

B) Recovery. D) Rejection.

57. Appliances need to have BEE star rating label are……

A) Frost free refrigerator. C) Color TV

B) Distribution Transformer. D) All of the above.

58. Types of scale used in BEE star rating labels.

A) Small. C) Big.

B) Both A and C. D) None of the above

59. Small label can be found in plants which usually don't consume …….. energy.
    A) Less. C) More
    B) Medium. D) None of the above
60. Follow product has big label.
    A) Ceiling fan. C) Tubelight
    B) Computer. D) Refrigerator
61. Higher the number stars, EER or efficiency will be.
    A. Greater C. Lesser
    B. Moderate D. None of the above
62. EER in BTU/HR/W = _____ X EER in W/W
    A. 3.410 C. 3.411
    B. 3.412 D. 3.413
63. Full form of EER is _____
    A. Energy Electric Ratio C. Energy Efficiency Ratio
    B. Energy Effective Ratio D. Energy Electron Ratio
64. Full form of BEE is ____
    A. Basic Electronics and Engineering C. Bureau of Electric Energy
    B. Bureau of Electric Efficiency D. Bureau of Energy Efficiency
65. Energy Efficiency Ratio is Equal
    A. Cooling Capacity (W) + Power consumption (W)
    B. Cooling Capacity (W) - Power consumption (W)
    C. Cooling Capacity (W) / Power consumption (W)
    D. Cooling Capacity (W) X Power consumption (W)
66. Total number of stars is limited to ____for all ACs
    A. 5 C.4
    B. 6 D.7
67. Number of stars in Red background indicates _____
    A. The rating granted to that shop
    B. The rating granted to that company
    C. The rating granted to that particular model
    D. The rating granted to that group
68. Full form of COP is
    A. Coefficient of Pressure
    B. Coefficient of performance
    C. Coefficient of program
    D. None of the above
69. Full form of ISEER is _____
    A. Indian seasonal electric efficiency ratio
    B. Indian seasonal efficiency energy ratio
    C. International seasonal efficiency energy ratio
    D. Indian seasonal energy efficiency ratio
70. Power saving guide label is stickled on_____
    A. Internal parts of AC C. On condenser and compressor
    B. External cover of AC D. On back cover of AC
71. If we take the numder above, we can see that with increase of energy star rating there is a possibility of saving up to _____.
    a) 14% c) 15-20%

b) 35% d) 30%

72. In comparison an inverter tech AC being flexible tonnage AC can save more over_____star AC.
a) BEE3 c) BEE1
b) BEE5 d) BEE4

73. In inverter tech AC some manufactures claim up to saving_____.
a) 50% c) 60%
b) 20% d) 80%

74. Inverter tech AC if usage of AC is more than 1000 hour in a year and per unit cost of electricity is more than rs _____per unit.
a) 10 c) 5
b) 7 d) 4

75. You may recover the incremental capital cost used to purchase a _____ air conditioner.
a) Lower star c) Higher star
b) Higher power d) Lower power

76. 5Star air conditioner will provide the same amount of colling using _____ power than 1 star air conditioner of same tonnage.
a) Lesser c) more
b) Equal d) all of the above

77. Star rating are provided to all the major kind of appliance in the form of _____.
a) Label c) stamp
b) Punching d) sticker

78. Inverter technology AC cost further.
a) More c) less
b) Equal d) all of the above

79 …….. product on which labeling is voluntary.
A. LPG stoves C. laptops
B. Ballast D. All of above

80. How many stages of application for registration?
A. only one C. two
B. five D. four

81. Which are the following stages of registration?
a) Company registration
b) Product registration
c) Model registration
d) Symbol registration

A. a) and b) C. b) and c)
B. a) and c) D. a) and d)

82. Each and every document submitted to BEE must be ……and …….
A. verified and authorized C. sign and stamp
B. registered and uploaded D. verified and uploaded

83. …… documents are not accepted as per general guideline of company registration.
A. without proper filling and loosing C. folded or improper
B. Both A and B D. None of above

84. Covering letter include….....
A. Annexure 1A and 2A C. Annexure 1 and report
B. Annexure 1 and 2 D. None of above

85. One time company registration fee for large scale industry is Rs……..

A. 150000 C. 100000
B. 50000 D. 75000

86. Company registration fee for small scale industry is Rs ……
A. 10000 C. 15000
B. 25000 D. 20000

87. Name of the user of label include in ……. Certificate.
A. Tread mark B. SSI
C. BIS D. None of above

88. If small scale industry applying for registration first time required ……..certificate
A. BIS B. SSI
C. Both A and B D. None of above

89. The applications of S&L scheme are _____.
a) Procedure for obtaining a label b) Financial obligations involved
c) Frost free refrigerator d) Model registration

90. The following are the types of labels.
a) Comparative label b) Brand label
b) Descriptive label d) Grade label

91._____ are the function of a label.
a) Well defined test protocols b) Target limits on energy performance
b) Disseminate information on the benefits to consumers d) Describes energy performance

92. Products on which labeling is voluntary are
a) Electric geysers b) Induction motors
b) Ceiling fans d) All of the above

93. The meaning of standard are
a) Target limits on energy performance
b) Well defined test protocols to obtain a sufficiently accurate estimate
c) Both are correct
d) Both are wrong

95. The effectiveness of energy labels depend upon what factors?
a) How they present information to consumer
b) How they are supported by information to the consumer
c) How they are supported by information campaigns
d) All of the above

96. Energy labels can be used ____
a) Efficiently b) Effectively
b) Stand alone d) None of the above

97. The function of comparative label is ____
a) Allow consumers to compare the energy consumption of similar products
b) Provide a certification to inform prospective purchasers
c) Gives necessary information
d) Target limits on energy performance

98. Function of endorsement label is ___.
a) Gives necessary information
b) Target limits on energy performance
c) Allow consumers to compare the energy consumption of similar products

d) Provide a certification to inform prospective purchasers

99. Products on which labeling is mandatory are _____.

a) Colour TV
b) Room air conditioners
b) Direct cool refrigerator
d) All of the above

100. Labeling is voluntary on

a) Solid State inverters
b)Diesel Generator
c) LED retrofit lamps
d) all of above.

101. Registration is done in two stages :

a) Registration
b) Model Registration
c) Both a. And b.
d. None of above

102. An applicant is required to apply online through

a) Customer portal
b) Project Management Portal
c) S & L portal
d) none of above

103. Documents which are clipped or only stapled

a) Will be accepted
b) Will not be accepted
c) will be approved
d) none of above

104. Deviation from the process would be treated as _____to application.

a) Compliance
b) Non-compliance
c) acceptance
d) none of above

105. Covering letter is given in

a) Annexure 1
c) Annexure 2
c) both (a) and (c)
d)None of above

106. For large scale industries the One time registration fee is

a) Rs.25000
b) Rs.100000
c) Rs.250000
d) Rs.700000

107. For small scale industries the company registration fee is

a) Rs.100000
b)Rs.250000
c) Rs.25000
d) Rs.150000

108. Payment of the fees can be made through

a) cheque
b) cash
c) demand draft
d) none of above

109. One time company registration fee can be paid through

a) demand draft
b) online
c) both a) and b)
d) None of above

110. Model registration fee for each model is

a. 1000
b. 2000
c. 3000
d. 4000

111. Model registration fee payment can be done by...

a. Demand draft
b. Online
c. Cash
d. Both a & b

112. Manufacturers are required to put star rating labels as per the...

a. ISO
b. ASME
c. The standards and labeling program
d. RBI

113. The standards and labeling program was introduced in

a. 2003
c. 2009

b. 2006 d. 2012

114. Star rating are provided to all major kinds of _____ in the form of labels.
a. Appliances c. Eatables
b. Clothes d. Vehicles

115. Appliances which need to have energy Star rating mandatorily:
a. Refrigerator c. AC
b. TV d. All of above

116. Full form of NABL
a. National athletic basketball league
b. National Accreditation Board for Testing and Calibration Laboratories
c. National Accreditation Board limited
d. National athletic baseball league

117. The new BEE start rating came into effect from _____ onwards
a. May 2019 c. August 2019
b. July 2019 d. January 2020

118. The appliance with the lowest energy consumption are given...
a. Lowest rating c. 1 star
b. Highest rating d. 2 star

119. The appliance with the highest energy consumption are given...
a. Lowest rating c. 5 star
b. Highest rating d. 4 star

120. BEE star rating labels show additional information such as
a. Product c. brand name
b. Product category d. All of the above

121. For consumers, _____ is helpful as it allows you to calculate the actual money you would spend in electricity bills for that particular product.
a. Electricity bill c. BEE Star Rating
b. User manual d. Water bill

123. Following product have small BEE Star Rating label
a. Refrigerator c. Geysers
b. Washing machine d. Ceiling fans

124. Following product have big BEE Star Rating label
a. Ceiling fans c. Tube light
b. Refrigerator d. Television

125. The _____ is aimed at appliances which have a constant usage andconsume more electricity.
a. Electricity bill c. BEE Star Rating
b. User manual d. Water bill

126. Bee star rating label just give _____ representation of the energy consumption levels byshowing star ratings.
a. Physical c. Visual
b. Both a and c d. None of the above

127. Choose the correct statement about BEE Star rating label
a. Higher the number of stars, greater will be the efficiency
b. Lesser the number of stars, greater will be the efficiency
c. Higher the number of stars, lesser will be the efficiency
d. None of the above

128. Choose the correct star rating for BEE Star rating label limit

a. 1< to 5 c. 1 to 5
b. 1 to 5> d. None of the above

129. Higher the number of stars, _____ will be the efficiency or EER
a) Lesser c) Greater
b) Likewise e) average

130. We have defined EER by
a) BTU/hr/W c) BTU/min/W
b) BTU/sec/W d) BTU/hr/V

131. EER in BTU/hr/W =
a) 3.222 * EER in W/W c) 3.413 * EER in W/W
b) 3.234 * EER in W/W d) 3.400 * EER in W/W

132. A 5 star AC in the previous year may become a _____ AC the next year after revision of rating takes place.
a) 5 star c) 3 star
b) 7 star d) 10 star

133. Factor apart from cost that determines the selection of an AC is
a) It's appearance c) Power saving guide label
b) It's type d) it's durability

134. BEE Energy efficiency ratings are based on
a) Savings in cost c) savings in electricity consumption
b) Savings in input d) savings in machinery

135. Small labels can be found in appliances which usually
a) Don't consume more energy c) don't have higher cost
b) Don't consume less energy d) don't have high maintenance

136. Products with big label are
a) Refrigerator c) AC
b) Washing machine d) all of above

137. Big label helps to calculate actual money to be spent on
a) Maintenance bills c) Electricity bills
b) Repairing d) None of above

138. Labels show information such as
a) Brand name c) product category
b) Energy consumption of the product d) All of above

139. _____ is the system to reduce the amount of energy input into the system without negatively affecting the output.
A) Energy Management. C) ISEER.
B) Energy audit. D) Energy monitoring.

140. Energy audit is the first step towards systematic effort for _____.
a) Realting energy inputs and production. C) Conversation of energy.
b) Reducing the amount of energy input. D) None of the above.

141. Correct objectives of energy audit-
a) Identifying the quality and cost of various energy inputs.
b) Relating energy inputs and production output
c) Highlighting wastage in major areas.
d) All of the above.

142. The PEA is the first step in implementing an energy conversation programme, and consists of essentially collecting and analyzing data.

a) True.
b) False.

143. The primary objective of energy audit is to determine ways to _____ energy consumption per unit of product output.

A. Increase. C) Slightly increase.
B. Reduce. D) Change.

144. Energy audit can be classified into the following two types:-

I) Preliminary audit. II) Secondary audit.

A. Correct.
B. Incorrect.

145. The _____ audit is the simplest and quickest thpe of audit.

A. Primary audit. C) Tertiary audit.
B. Secondary audit. D) Preliminary audit.

146. The instrument for measurement of flow/ velocity is_____.

A. Bimetallic. C) Turbine meter.
B. Manometer. D) Wattmeter.

147. Pressure is measured with the help of-

A. Manometer. C) Thermocouple.
B. Ammeter. D) Orifice plate.

148. Considerable savings are possible through small improvements in the “house keeping” practices.

A. True.
B. False.

149. The Bureau of Energy Efficiency initiated the standard and labelling programme for equipments & appliances in

A. 2001.
B. 2004.
C. 2006.
D. 2008.

150. The S & L activity has been identified as a key activity for energy efficiency improvement which stands for

A. Standards & Listening.
B. Standards & Labelling.
C. Standards & Logistics.
D. Standards & Lateral.

151. The relation between EER in BTU/hr/W EER in W/W is given as_____.

A. EER in BTU/hr/W = 3.245 EER in W/W.
B. EER in BTU/hr/W = 3.44 EER in W/W.
C. EER in BTU/hr/W = 3.413 EER in W/W.
D. EER in BTU/hr/W = 1.234 EER in W/W.

152. The standard and labelling scheme is invoked for 20 equipment from which _____ number of equipment are mandatory.

A. 30.
B. 20.
C. 10.
D. 15.

153. State whether the given product have been notified under the mandatory labelling as on May 2018. (Inverter type Room A/c).

A. True.
B. False.

154. The label which allows consumer to compare the energy consumption of similar products and factor lifetime running cost into their purchasing decisions.

A. Comparative label.
B. Endorsement label.
C) Standard label.
D) None of the above.

155. The label which provides a certification to inform prospective purchasers that the product is highly energy efficient for its category.

A. Standard label.
B. Comparative label.
C. Endorsement label.
D. None of the above.

156. State whether the Diesel Engine Driven Monoset Pumps for agricultural purposes have been notified under the voluntary labelling.

A. True.
B. False.

157. The Model Registration fee for each model is _____ & payment can be made through ____.

A. 1500rs & only bank DD.
B. 1000rs & bank DD or through online.
C. 10,000rs & only through online.
D. None of the above.

4.2 ENERGY MOUNTING AND TARGETING

1. The energy used by any business varies with _____ processes.

a) Input b) Volumes
c) Production. d) All of the above

2. Future energy use is likely to vary if you change____ of your business

a) Labour. b) Funds
c) Aspects d) Efficiency

3. _____ will provide indications of effectiveness of your operations.

a) Benchmarking b) Stops
c) Production d) machines

4. Energy audit is an_____ of energy flows

a) Inspection b) Survey
c) Analysis. c) All of the above

5. Energy audit will help to keep focus on _____ which occurs in energy.

a) difficulty b) change
c) variations d) conversion

6. In any industry three top operating expenses are found to be _____.

a) wnergy. b) labour cost
c) all of the above d) material

7. CUSUM stands for _____

a) Constant summation. b) Current sums
c) Control construction d) Cumulative sum

8. CUSUM technique provides _____

a) Deployment. b) Maintenance
c) Development. d) Trend line

9. Annual total energy & production chart smoothens out ____ in energy timing of meter readings.
a) Errors b) Efficiency
c) Accuracy. d) Repeatability

10. SEC is _____
a) Specific engine control b) System error control
c) Second error control d) Specific Energy Consumption

11. Energy monitoring and targeting is primarily a_____ technique.
A) management C) information
B) installation D) none of above

12. Energy monitoring and targeting is primarily a management technique that use Energy system on basic to
A) Eliminate waste C) Reduce pollution
B) Both A & C are correct D) None of above

13. It builds on the principle "you can't manage _____
A) what you don't measure". C) what you measure. “
B) what you weight. “ D) none of above

14. A management goal to work towards energy _____.
A) preservation C) conservation
B) consumption D) all of above.

14.It involves a _____ disciplined division of the facility into Energy Cost Centre
A) kinematics C) pneumatic
B) systematic D) none of above.

16. the energy used is compared with production _____
A) space C) volume
B) material D) mass

17. The information is available on a regular basic ,variances can be spotted and _____
A) interpreted C) discarded
B) change D) none of above

18. The Monitoring and Targeting programs they show typical elections in annual energy costs
A) selection C) power
B) election D) none of above

19. monitoring is essentially aimed at establishing the existing pattern of energy consumption.
A) surface C) marking
B) pattern D) none of above.

20._____ information can be derived from the financial accounting systems - utilities cost centre
a) Plant level b) Plant department level
c) System level d) Equipment level

21. Plant level information can be found in?
a) variable yield data b) energy consumption data
c) both A & B d) none of the above

22. Sub metering data helps to determine which data.
a) financial data b) yield data
c) system level performance data d) none of the above

23. Equipment level information is obtained from ____ & ____

a) name plate data & schedule information b) low unit cost & financial data
c) Both a & b d) none of the above
24. Electric bills and other fuel bills should be collected _____.
a) daily b) monthly
c) periodically d)none of the above
25. A critical feature of M&T is to understand____
a) energy management. b) what drives energy consumption
c) product configuration d) none of the above
26. The next stage of monitoring process is to ____
a) study and analyze the data b) obtain a visual representation
c) both a & b d) none of the above
27. It js strongly recommended that the data be _____.
a) presented graphically b) non of above
c) presented visually d) both A&B are correct
28. A better appreciation of variations is always obtained from_____
a) energy-production relationships b) visual representation
c) business process automation d) both A&C are correct
29. Graphs provide an effective means of developing the _____
a) energy - production relationships b) production data
c) hours of operation d) none of the above
30. _____ energy use, so that projects intended to improve energy efficiency can be checked.
a] Recording c] Checking
b] Controlling. d]Allocating
31. _____one is not the essential elements of M&T system.
a] Recording c] Analyzing
b] Source d] Checking
32_____ energy consumption to an appropriate standard or benchmark.
a] Setting target c] Comparing.
b] Reporting d] Allocating
33. ____ the result including any variances from the targets which have been set.
a] Reporting c] Determining
b] Recording d] Highlighting
34. _____ to reduce or control energy consumption.
a] Determining c] Highlighting
b] Recording d] Setting Targets
35. Particular M&T system will involve the following:
a] Checking c] Determining
b] Allocating d] All of the above
36. _____ energy costs to specific departments (energy/Accounting Centres)
a] Recording c] Allocating
b] Checking d] Determining
37. _____ energy performance/ efficiency.
a] Allocating c] Allocating
b] Checking d] Determining
38. Comparing energy consumption to the set target on a regular basis is called as _____.

a]Reporting
c] Determining
b] Recording
d] Highlighting

39. Implementing management measures to correct any variances, which may have occurred _____.
a] Recording
c] Checking
b] Controlling.
d] Allocating

40. A critical feature of _____ is to understand what drives energy consumption.
a) M&Y
b) M&T
c) T&M.
d) C&V

41. After collection of what monitoring process starts
a) production data.
b) visual presentation
c) money.
d) all of the above

42. what is the next step of monitoring process?
a) visual presentation.
b) Bar chart
c) study and analysis.
d) none of the above

43. it is strongly recommended that the data be presented graphically.
a) true.
b) false.

44. A better appreciation of variation is almost always obtained from a _____
a) visual presentation.
b) table of number
c) both a & b.
d) none of the above

45. Graphs generally provide an effective means of developing what
a) map.
b) energy production
c) relationship.
d) none of the above

46. The energy data entered into____
a) spreadsheet.
b) bar chart
c) histogram
d) all of the above

47. It is hard to envisage it is happening from
a) energy bills.
b) data
c) energy production.
d) plain data

48. The starting point is to collect and collate _____ months of energy bills
a) 24/24.
b) 12/24
c) 12/12.
d) 24/12

49 Having how much months of production and energy data, we can plot a moving annual total
a) Three.
b) Five
c) Twelve.
d) six

50. In the production of wave energy _____ form of energy is used.
a) Potential energy
b) Kinetic energy
c) Solar energy
d) Wind energy

51._____ energy sources does not produce carbon dioxide.
a) Oil
b) Uranium
c) Coal
d) Natural gas

52. _____energy source is the largest source used in India.
a. CNG
b. LPG
c. Coal

d. Bio Gas

53. _____ is the most popular kitchen fuel in India
    a. LPG
    b. Kerosene
    c. Coal
    d. Firewood

54. Common energy source in Indian villages is:
(a) Electricity
(b) Coal
(c) Sun
(d) Wood and animal dung

55. Five of the world's top fourteen oil producing countries are located in
a) Middle East
b) USA
c) Canada
d) Russia

56. Energy is released from fossil fuels when they are_____
a) Pumped
b) Cooled
c) Burned
d) Pressurized

57. In the production of wave energy which form of energy is used?
a) Potential energy
b) Kinetic energy
c) Solar energy
d) Wind energy

58. Energy in the form of heat and light is obtained by_____
a) Biomass
b) Fossil fuels
c) Sun
d) Wind

59. How many forms of fossil fuels are there_____
a) One
b) Two
c) Three
d) Four

60. Energy monitoring and targeting is built on the principle of " _____".
a) "production can be reduced to achieve reduced energy consumption"
b) "Consumption of energy is proportional to production rate"
c) "You cannot manage what you do not measure"
d) None of the above.

61. Poor scattering on trend line of production Vs Energy consumption indicates ___.
a) poor level of control
b) good level of control
c) both the above
d) none of above.

62. Energy and production data is useful to calculate……
a) Specific Energy Consumption
b) Specific Fuel consumption
c) Specific Cost
d) None

63. Data required to plot a moving annual total is ____.
a) Production
b) Energy
c) Both a and b
d) None the above
64. For any company, energy consumption mostly relates to……..
a) Profits
b) Inventory
c) Production
d) All the above
65. The best way of correlating production and energy data in any plant is…..
a) Text format
b) Graphical representation
c) Oral communication
d) None
66. The energy used by any manufacturing process varies with
a) Production volume
b) Type of process
c) Resource input
d) All the above
67. To draw a CUSUM chart following data is required
a) Monthly energy consumption& monthly production
b) Monthly specific energy consumption and turn over
c) Monthly profits and production
d) None
68. One of the following is not the element of energy monitoring & targeting system
a) Recording the energy consumption
b) Comparing the energy consumption
c) Controlling the energy consumption
d) Reducing the production
69. Level of production may have an effect on specific energy consumption. State
a) True b) False
70. India's position in the Global Wind Energy Council (GWEC) is_____
a) Fourth
b) Third
c) Second
d) First
71. Total primary energy consumption of fuel in the world is lead by _____
a) Coal
b) Nuclear
c) Hydro
d) Oil
72. The world's top consuming country of domestically produced hydroelectricity is _____
a) India
b) Brazil
c) China
d) Japan
73. India's energy consumption growth in 2016 is_____
a) 3.6%
b) 4.6%
c) 2.9%

d) 1.5%
74. The maximum work attainable as the system comes in equilibrium with surrounding is called__
a) Energy
b) Availability
c) Exergy
d) Entropy
75. Exergic _____ is a measure of the perfectness of a thermal system.
a) Enthalpy
b) Efficiency
c) Strength
d) Degree
76. _____ power does the small scale wind machine generate.
a) 18 KW
b) 2 KW
c) 12 KW
d) 30 KW
77. _____type of generator are made use in wind turbines.
a) Recreational generators
b) Synchronous generator
c) Asynchronous generator
d) Alternator
78 India's total primary energy consumption is _____
a) 24.3 BTU
b) 19.01 BTU
c) 120 BTU
d) 30.1 BTU
79 State true or false. Nordic countries consumption of energy per capita is among the highest in the world.
a) True b) False
80. _____many percent of energy transferred from one trophic level to the next higher level.
a) 20%
b) 10%
c) 50%
d) 100%
81. The value of the reference value is chosen _____
a) 3/4 ways between mean and the out-of-control mean towards the mean
b) 1/2 ways between mean and the out-of-control mean
c) 3/4 ways between mean and the out-of-control mean towards the out-of-control mean
d) 1/4 ways between mean and the out-of-control mean towards the mean
82. After the value of Ci– increasing than the value of _____ the process is said to be out-of-control.
a) Control interval b) Decision interval
c) Distribution interval d) Calculation interval
83. If the value of $\mu 0 > \mu 1$, K will have a negative value.
a) True b) False
84. Each vertical bar in cusum status chart represents _____
a) The value of Ci+ and Ci– b) The value of Ci–
c) The value of Ci+ d) Neither the value of Ci+ nor Ci–
85. The value of K and H should be determined according to the ARL required for the corresponding cusum chart.
a) True b) False

86. To apply Shewhart-cusum combined procedure, the Shewhart control limits should be applied almost _____ standard deviation from the center.

a) 2 b) 1

c) 1.5 d) 3.5

87. Combined Cusum-Shewhart procedure is applied _____

a) On-line control b) On-line measure

c) Off-line control d) On-line measure

88. The standardized variable vi was subjected to vary more with respect to ____ than process mean.

a) Sample mean b) Sample variance

c) Process variance d) Process standard deviation

89. Each vertical bar in cusum status chart represents _____

a) The value of Ci+ and Ci– b) The value of Ci–

c) The value of Ci+ d) Neither the value of Ci+ nor Ci–

90. Only two-sided cusums are useful all over the industries.

a) True b) False

91. M&T is an established technique that was the first launch as a National program in the UK in …….

a.1900. c.1992

b.1971. d.1980

92. Its …….. goal is to meet in said pattern by providing all the necessary data on the energy consumption as well as certain driving factors as identified during preliminary investigation.

a. Secondary. c. Primary

b. Tertiary. d. None.

93. M&T techniques rely on the …… main principles.

a. two c. three

b. one. d. six

94. Energy monitoring and targeting is …….

a. primary management techniques

b. secondary management techniques

c. tertiary management techniques

d. None

95. As per pie chart on energy consumption the supply unit of the electricity is……..

a. kWh c. kV

b. kg. d. Watts

96. As per the case study of the CUSUM technique energy consumption and the production data were collected for plant over a period of …….. months.

a. 20. c. 19

b. 6. d. 18

97. Energy monitoring and techniques builds on the principle of “you can manage what you measure”.

a. true

b. false

98. Monitoring and targeting programs have been so effective that they show typical reductions in annual energy cost in the various industrial sectors between…….

a. 10 to 30 % c. 5 to 20%

b. 5 to 10 % d. 5 to 30%

99. As per chart on energy consumption the supply unit of furnace oil is ……

a. kWh c. kV

b. kg. d. Watts

100. A CUSUM graph follows a random fluctuation trend and oscillates around.

a) 100
b) 100%
c) 0
d) none of the above
102. To draw a CUSUM chart following data is required
a) Monthly energy consumption& monthly production
b) Monthly specific energy consumption and turn over
c) Monthly profits and production
d) None
103. What is specific energy consumption.
a) energy consumption per month
b) Energy consumed per unit of production
c) energy consumption per year
d) none of the above
104. Data required to plot a moving annual total is ____.
a) production
b) energy
c) both the above
d) none the above
105. Energy and production data is useful to calculate……
a) Specific Energy Consumption
b) Specific Fuel consumption
c) Specific Cost
d) None
106. What type of data is useful to find out the fixed energy consumption?
a) SEC Vs production
b) SEC Vs Energy
c) Production Vs energy
d) None
107. What do you mean by "toe"
a) Total oil equivalent
b) Tons of effluent
c) Tons of oil equivalent
d) none of the above
108._____ is primarily a management technique that uses energy information as a basis to eliminate waste, reduce and control current level of energy use and improve the existing operating procedures.

a) Energy monitoring and targeting
b) CUSUM
c) Specific energy consumption
d) Production

109._____is essentially aimed at preserving an established pattern.

a) Targeting
b) Analysing
c) Monitoring
d) ecording

110._____is the identification of energy consumption level, which is desirable as a management objective to work towards energy conservation

a) Recording
b) Targeting
c) Analysing
d) Monitoring

111. "The judicious and effective use of energy to maximise profits and enhance competitive positions". This can be the definition of:
   a) Energy conservation c) Energy management
   b) Energy policy d) Energy Audit

112. The energy management function is generally vested in –
   a) Senior Management c) Distributed among number of middle manager
   b) One energy manager or co-ordinator d) (b) & (c) together

113. The objective of energy management includes
   c) Minimising energy costs c) Minimising environmental degradation
   d) Minimising waste d) all the above

114. One unit of electricity is equivalent to ___ kcal heat units.
   a) 800 c) 400
   b) 860 d) 680

115. Which instrument is used to monitor O2, CO in flue gas?
   a) Combustion analyzer c) Pyrometer
   b) Power analyzer d) Fyrite

116. Lux meter is used to measure……
   a) Illumination level c) Harmonics
   b) Sound intensity and illumination level d) Speed

117. For a cement plant the parameter, "kWh/MT of clinker "indicates
   a) Energy Index parameter c) Production factor
   b) Utility factor d) load factor

118. Energy manger should be well versed with
   a) Manufacturing and processing skills c) Technical and marketing skills
   b) Managerial and technical skills d) Managerial and commercial skills

119. CO2 measurement of Fyrite kit is based on (EA
   a) Weight basis (dry) c) Weight basis (wet)
   b) Volume basis (dry) d) Volume basis (wet)

120. Non contact speed measurements can be carried out bb
   a) Tachometer c) Stroboscope
   b) Stroboscope d) Speedometer

121.Energy monitoring and targeting is built on the principle of " _____ ".
a) "production can be reduced to achieve reduced energy consumption"
b) "Consumption of energy is proportional to production rate"
c) "You cannot manage what you do not measure"
d) None of the above.

122. One of the following is not the element of energy monitoring & targeting system
a) Recording the energy consumption b) comparing the energy consumption
C) Controlling the energy consumption d) Reducing the production

123. Which of the variable does not contribute to energy consumption?
a) Production b) Hours c) Climate d) none of the above

124. Poor scattering on trend line of production Vs Energy consumption indicates ___.
a) poor level of control b) good level of control

c) both the above d) none of above.

125. Level of production may have an effect on specific energy consumption.

a) True b) False

126. M & T involves a systematic, disciplines division of the facility in to energy cost centres.

a) True b) False?

126. "The judicious and effective use of energy to maximise profits and enhance competitive positions". This can be the definition of:

e) Energy conservation c) Energy management

f) Energy policy d) Energy Audit

127. The energy management function is generally vested in –

c) Senior Management c) Distributed among number of middle manager

d) One energy manager or co-ordinator d) (b) & (c) together

128. The objective of energy management includes

g) Minimising energy costs c) Minimising environmental degradation

h) Minimising waste d) all the above

129. One unit of electricity is equivalent to ___ kcal heat units.

c) 800 c) 400

d) 860 d) 680

130. Which instrument is used to monitor O2, CO in flue gas?

c) Combustion analyzer c) Pyrometer

d) Power analyzer d) Fyrite

131. Lux meter is used to measure……

c) Illumination level c) Harmonics

d) Sound intensity and illumination level d) Speed

132. For a cement plant the parameter, "kWh/MT of clinker "indicates

c) Energy Index parameter c) Production factor

d) Utility factor d) load factor

133. Energy manger should be well versed with

c) Manufacturing and processing skills c) Technical and marketing skills

d) Managerial and technical skills d) Managerial and commercial skills

134. CO2 measurement of Fyrite kit is based on (EA

c) Weight basis (dry) c) Weight basis (wet)

d) Volume basis (dry) d) Volume basis (wet)

135. Non contact speed measurements can be carried out bb

c) Tachometer c) Stroboscope

d) Stroboscope d) Speedometer

136. Which of the following is must in food labeling?

a) Name c) Standard specification

b) Place of origin d) All of the mentioned

137. Which of the following need not to be in the same vision of field

c) Product name c) Quantity

d) Date mark d) Place above of origin

138. Food authenticity means_____

e) The food should match the description c) The food should taste good

f) It should be cheap d) None of the above

139. Which of the following is the form of mis-description?

g) Incorrect Origin c) Incorrect quantitative description

h) Extending the food d) All of the above

140. Which of the following food item has been exempted from labeling?

i) On the spot food like bakery items c) Ready to eat food

j) Food served on plane machine d) All of the above

141. According to CODEX standards, which of the following item is hypersensitive?

k) Cereals c) Nuts

l) Milky products d) All of the above

142. Which among the following claims is prohibited?

m) Substantiated Claims c) All of the above

n) Claims of Veg/non- veg d) None of the above

143. Arrange the steps involved in Energy Management strategy

A- Set up energy monitoring and reporting system

B- Appoint energy management

C- Conduct energy audit

D- Identify the strategic corporate approach

a) D – B – A - C

b) A - B – C – D

c) D – A – B – C

d) C – A – B – C

144. The percentage of energy saved at the current rate of use ,compared to the refference year rate of use is called……..

a) Energy Utilization

b) Energy Performance

c) Energy Efficiency

d) None

145. An energy policy does not include ……

a) Target Energy Consumption Reduction

b) Time Period for Reduction

c) Declaration of top Management Commitment

d) Future Production Projection

146. The various types of instruments required during audit is not need to be….

a) Easy to carry

b) Inexpensive

c) Easy to operate

d) Unreadable

147. M&T is an established technique that was the first launch as a National program in the UK in …….

a.1900. c.1992

b.1971. d.1980

148. Its …….. goal is to meet in said pattern by providing all the necessary data on the energy consumption as well as certain driving factors as identified during preliminary investigation.

a. Secondary. c. Primary

b. Tertiary. d. None.

149. M&T techniques rely on the …… main principles.

a. two c. three

b. one. d. six

150. Energy monitoring and targeting is …….

a. primary management techniques
b. secondary management techniques
c. tertiary management techniques
d. None

151. As per pie chart on energy consumption the supply unit of the electricity is……..
a. kWh c. kV
b. kg. d. Watts

152. As per the case study of the CUSUM technique energy consumption and the production data were collected for plant over a period of …….. months.
a. 20. c. 19
b. 6. d. 18

153. Energy monitoring and techniques builds on the principle of "you can manage what you measure".
a. true
b. false

154. Monitoring and targeting programs have been so effective that they show typical reductions in annual energy cost in the various industrial sectors between…….
a. 10 to 30 % c. 5 to 20%
b. 5 to 10 % d. 5 to 30%

155. As per chart on energy consumption the supply unit of furnace oil is ……
a. kWh c. kV
b. kg. d. Watts

156. India's position in the Global Wind Energy Council (GWEC) is_____
a) fourth
b) third
c) second
d) first

157. Where does India stand on solar energy production?
a) First
b) Third
c) Fifth
d) Seventh

158. _____ country leads in the production of biofuel in the world?
a) United States of America
b) Brazil
c) Germany
d) Argentina

159. India is placed within the top 25 nations, in terms of oil production in the world.
a) True
b) False

The Arab states of the Persian Gulf are known for the production of _____
a) Coal
b) Copper
c) Gold
d) Petroleum

160. India stands in the first position, in the production of coal in the world.
a) True
b) False

161._____ country produces the largest share of electricity generated by nuclear power.
a) India
b) France
c) China
d) Japan
162. Total primary energy consumption of fuel in the world is lead by _____
a) Coal
b) Nuclear
c) Hydro
d) Oil
163. India's energy consumption growth in 2016 is_____
a) 3.6%
b) 4.6%
c) 2.9%
d) 1.5%
164. _____ is the world's biggest oil consuming country?
a) United States of America
b) Japan
c) India
d) China

4.3 Energy management and Audit

1. The fundamental goal of energy management is
   a) To produce goods and provide services with the least cost.
   b) To produce goods and provide services
   c) To sell goods only
   d) To give services only
2. _____is the Objective of the energy management from the following :-
   a) To give each product a label
   b) To evolve minimum energy consumption
   c) To minimize environmental effects
   d) To achieve optimum energy procurement.
3. Energy Efficiency rating in BTU/hr/W is equal to
   a) 4.413 W/W
   b) 2.413 W/W
   c) 3.413 W/W
   d) none of the above
4. On which Product is Labeling mandatory
   a) Colour TV
   b) LPG stoves
   c) Ballast
   d) Office Equipments
5. On which products is Labeling Voluntary
   a) Direct cool Refrigerator
   b) Ceiling fans
   c) Colour TV
   d) Tubular Florescent Lamps
6. The standards and labelings scheme (S&L) is one of the major thurst areas of _____.

a) BEE
b) ISEER
c) HVAC
d) ISO

7. _____ gives the consumers the necessary information to make informed purchase.
a) Barcodes
b) QR codes
c) Labels
d) Serial numbers

8. _____is the one time Company Registration fee for large scale industries ?
a) 50000/-
b) 100000/-
c) 150000/-
d) None of the above

9. Salient feature of Energy Conservation Act 2001 is
(a) establishment of BEE
(b) to prescribe energy conservation building codes for all buildings
(c) to specify energy consumption
(d) both (b) & (c)

10. The Act which is proposed to bring the qualitative transformation of the electricity sector is
(a) Regulatory Commission Act, 1998
(b) Indian Electricity Act, 1910
(c) Electricity Act, 2003
(d) Supply Act, 1948

11. The energy sources that are either found or stored in nature are
a) Secondary Energy Sources
b) Primary Energy Sources
c) both (a) and (b)
d) none of the above

12. _____ is commercial energy source.
a) Electricity
b) Coal
c) Oil
d) All the above

13. Inexhaustible energy sources are known as
a) commercial Energy
b) renewable Energy
c) primary energy
d) secondary energy

14. _____ country has the largest share of the global coal reserves?
a) Russia
b) China
c) USA
d) India

15. Infrared thermometer is used to measure
a) Surface temperature
b) Flame temperature
c) Flue gas temperature
d) Hot water temperature

16. The objective of energy management includes

a) Minimising energy costs
b) Minimising waste
c) Minimising environmental degradation
d) All the above
17. The various types of the instruments, which requires during audit need to be
a) Easy to carry
b) Easy to operate
c) Inexpensive
d) All above
18. For a cement plant the parameter, “kWh/MT of clinker “indicates
a) Energy Index parameter
b) Utility factor
c) Production factor
d) Load factor
18. Energy manger should be well versed with
a) Manufacturing and processing skills
b) Managerial and technical skills
c) Technical and marketing skills
d) Managerial and commercial skills
19. An energy policy does not include
a) Target energy consumption reduction
b) Time period for reduction
c) Declaration of top management commitment
d) Future production projection
20. CO_2 measurement of Fyrite kit is based on
a) Weight basis (dry)
b) Volume basis (dry)
c) Weight basis (wet)
d) Volume basis (wet)
21. Non-contact speed measurements can be carried out by
a) Tachometer
b) Stroboscope
c) Oscilloscope
d) Speedometer
22. The tool used for performance assessment and logical evaluation of avenues for improvement in Energy management and audit is
a) Fuel substitution
b) Monitoring and verification
c) Energy pricing
d) Bench marking
23. Infrared thermometer is used to measure
a) Surface temperature
b) Flame temperature
c) Flue gas temperature
d) Hot water temperature
24. Find out the ‘odd’ among the following choices for fuel substitution for industrial sector of India.
a) LDO with LSHS

b) Coal with rice husk
c) Natural gas for fertilizer plant
d) LPG for soft coke
25. The various types of the instruments, which requires during audit need to be
a) Easy to carry
b) Easy to operate
c) Inexpensive
d) All (a) to (c)
26. Air velocity in ducts can be measured by using ___ and manometer
a) Orifice meter
b) Borden gauge
c) Pitot tube
d) Anemometer
27. "The judicious and effective use of energy to maximise profits and enhance competitive positions". This can be the definition of:
a) Energy conservation
b) Energy management
c) Energy policy
d) Energy Audit
28. The energy management function is generally vested in –
(a) Senior Management
(b) One energy manager or co-ordinator
(c) Distributed among number of middle manager
(d) (b) & (c) together
29. The objective of energy management includes
a) Minimising energy costs
b) Minimising waste
c) Minimising environmental degradation
d) All the above
30. The ratio of current year's production to the reference year's production is called as
a) Demand factor
b) Production factor
c) Utilisation factor
d) Load factor
31. Replacement of steam based hot water generation by solar system is an example of
a) Matching energy usage to the requirement
b) Maximising system efficiency
c) Energy substitution
d) Performance improvement
32. One unit of electricity is equivalent to ___ kcal heat units.
a) 800
b) 860
c) 400
d) 680
33. The benchmarking parameter for air conditioning equipment is
a) kW/Ton of Refrigeration
b) kW/ kg of refrigerant handled

c) kcal/m3 of chilled water
d) Differential temperature across chiller
34. The percentage of energy saved at the current rate of use, compared to the reference year rate of use, is called
a) Energy Utilization
b) Energy Performance
c) Energy Efficiency
d) None
35. _____ instrument is used to monitor O2, CO in flue gas (EA)
a) Combustion analyzer
b) Power analyzer
c) Pyrometer
d) Fyrite
36. Lux meter is used to measure……
a) Illumination level
b) Sound intensity and illumination level
c) Harmonics
d) Speed
37. Why is a food web more realistic way of portraying an ecosystem than a food chain?
a) Because it shows the relation of organisms with each other in a habitat
b) Because food chains use only a small sampling of organisms
c) Because it doesn't shows the relation of organisms with each other in a habitat
d) Because it compares the number of consumers to the number of micro-organisms.
38. ____ is called for an organism that helps to define an entire ecosystem.
a) Super species c) Dominant species
b) Keystone species d) Precious species
39. ____ is called for the diagram that shows how food chain linked together into more complex feeding relationship.
a) Food web c) Food circle
b) Food chain d) Food triangle
40. Find condition is true for food web
a) A food web only follows just one path c) A food web starts with a consumer
b) A food web ends with a producer d) A food web shoes many paths plants and animals connected
41. _____ one of the the major difference between food web and food chain.
a) Food chain and food web are linear pathway
b) Food chain and food web are interconnected pathway
c) Food chain is a single linear pathway and food web is interconnected pathway
d) Food chain is interconnected pathway through which food web is single linear pathway
42. Food webs derive their energy from sunlight.
a) True
b) False
43. In which of the following we can have more than one source of organisms for energy
a) Food chain c) Food circle
b) Food web d) Food rotation
44. _____ following is the highest trophic level organism in grassland food web.
a) Grass c) Lizard
b) Grasshopper d) Hawk

45._____following is correct order of food web for aquatic food web.

a) Diatoms->pteropods->lantern fish->squid->marlin b) Diatoms->lantern fish->squid->marlin->pteropods

c) Lantern fish-> diatoms-> squid-> marlin->pteropods d) Lantern fish-> diatoms-> squid-> pteropods-> marlin

46.Large sharks remain in the highest trophic level in the aquatic food web.

a) Because large sharks are predators c) Because large sharks are phytoplankton

b) Because large sharks are top predators d) Because large sharks are zooplankton

47. Minimum EER of 5-star rating is

a. 3.50 c) 3.99
b. 4.00 d) 4.50

48. Bureau of Energy Efficiency was founded on .....

c. 1 March 2001 c) 1 March 2002
d. 4 March 2001 d) 4 March 2002

49. Higher the number of stars, lower will be the Efficiency.

e. True b) False

50. Labeling is mandatory on ..... product

f. Frost Free Refrigerator c) Colour TV
g. Room Air-conditioners d) All of the above

51. Manufacturers claim up to ..... savings on inverter tech AC

h. 50% c) 55%
i. 60% d) 65%

52. Which of the following food item has been exempted from labeling?

i. On the spot food like bakery items
ii. Ready to eat food
iii. Food served on plane/ vending machine
iv. All of the mentioned

53. Generally the '% Daily Value' is based on a 2000 – 2500 cal diet.

v. True
vi. False

54. According to CODEX standards, which of the following food item is hypersensitive?

j. a) Cereals. c) Milk Products
k. b) Nuts. d) All of the above

55. Nutrition claim means _____

i. A food has certain nutritional properties including but not limited to the energy value
ii. A food has certain limitations
iii. All of the mentioned
iv. None of the mentioned

56. Which among the following claims is prohibited?

l. a) Substantiated Claims. c) All of the above
m. b) Claims of Veg/non- veg. d) none of the above

57. Freon group of refrigerants are

n. a) Inflammable. c) Non-inflammable and toxic
o. b) Toxic. d) Nontoxic and non-inflammable

58. The boiling point of ammonia is

i. a) -10.5°C. c) -33.3°C

p. b) -30°C. d) -77.7°C

59. For obtaining high COP, the pressure range of compressor should be

q. a) High. c) Optimum

r. b) Low. d) Any value

60. Which of the given reasons, is NOT a valid reason for packaging of food items?

a) Security and portion control. c)Marketing and convenience

b) Protection and information transmission. d) None of the mentioned

61. Which of the following is a must in food labeling?

a) All of the mentioned. c) Standard Specification

b) Place of Origin. d) Name

62. Which of the following need not be in the same vision of field?

a) Product name. c) Place of Origin

b) Date mark. d) Quantity

63. Food Authenticity means _____

a) The food should match the description. b) The food should taste good

c) It should be cheap. d) None of the mentioned

64. Which of the following is a form of mis-description?

a) Incorrect Origin. c) All of the mentioned

b) Extending the food. d) Incorrect Quantitative Description

65. Indian S&L Programme launched on which day .

s. 18th May 2016. c) 16 May 2016

t. 26th March 2005. d) 25th August 2006

66. Which of the following are NOT key constraints of the food processing industry?

a) Inadequate quality control. c) High packaging cost

b) Low demand. d) Poor infrastructure as in no cold storage

67. Which of the following comes under grain processing in India?

a) Oil seed processing . c) Wheat processing

b) Oil seed & Wheat processing. d) None of the mentioned

68. Which year energy conservation act enacted.

u. 2001. C) 2010

v. 2005 d) 2005

69. Full form of HVCA.....

w. Hazard Vulnerability Capacity Assessment

x. Human Vulnerability Capacity Assessment

y. Hazard Vulnerability Capacity Agreement

z. Human Vulnerability capacity Agreement

70. BEE is under the provision of ..... Act.

aa. EC Act , 2000. C) EC Act , 2002

bb. EC Act ,2001. D) None of the above

71. BEE scheme was launched in.....

i. May , 2004. C) May ,2006

ii. April ,2006. D) April , 2004

72. Product on which labelling is mandatory.....

iii. Electric Geysers. B) LPG Stoves

iv. Ballast. D) Colour TV

73. Product of which labelling is voluntary ....

v. Frost Free Refrigerator. C) Colour TV

vi. Ceiling Fans D) Distribution Transformer

74. EER in BTU/HR/W=.....

vii. 3.432 * ERR in KW/W. C) 3.413 * ERR in W/W

viii. 3.134 * ERR in KW / W. D) 3.413. * ERR in KW/ W

75. According to star rating ,the 5 star gives minimum ERR....

ix. 4.20 C) 3.90

x. 4.70 D) 4.50

76. Product with small label....

xi. Refrigerator c) Geyser

xii. Computer D) Air – conditioner

77. "The inspection, survey and analysis of energy flow for energy conservation in a building, process or system to reduce the amount of energy input into the system without negatively affecting the output(s)". Is the definition of?

a. Energy conservation b. Energy management

c. Energy policy d. Energy Audit

78. The Objective of Energy Management includes

a. Minimising Energy Costs b. Minimising Environmental Degradation

c. Minimissing waste d. All of the above

79.One unit of electricity is equivalent to ___ kcal heat units.

a) 800 b) 860

c) 400 d) 680

80. The benchmarking parameter for air conditioning equipment is

a) kW/Ton of Refrigeration b) kW/ kg of refrigerant handled

c) kcal/m3 of chilled water d) Differential temperature across chiller

81. Which instrument is used to monitor O2, CO in flue gas? (EA)

a) Combustion analyser b) Power analyser

c) Pyrometer d) Fyrite

82. Energy manger should be well versed with

a) Manufacturing and processing skills b) Managerial and technical skills

c) Technical and marketing skills d) Managerial and commercial skills

83. The tool used for performance assessment and logical evaluation of avenues for improvement in Energy management and audit is

a) Fuel substitution b) Monitoring and verification

c) Energy pricing d) Bench marking

84. The various types of the instruments, which requires during audit need to be

a) Easy to carry b) Easy to operate

c) Inexpensive d) All (a) to (c)

85. For a cement plant the parameter, "kWh/MT of clinker "indicates

a) Energy Index parameter b) Utility factor

c) Production factor d) Load factor

86. Energy consumption per unit of GDP is called as:

a) Energy Ratio b) Energy intensity

c) Per capita consumption d) None

87. A _____ is an inspection, survey and analysis of energy flows for energy conservation in a building, process and system.

a) Energy audit.
b) Wave audit.
c) Bank audit.
d) None of the above.

88._____ are portable devices capable of estimating the combusting efficiency of furnaces, boilers, or other fossil fuel burning machines.

a) Sound analyzer.
b) Light analyzer.
c) Combustion analyzer.
d) Temperature analyzer.

89._____ is the measure of whether a plant is now using more or less energy to manufacture its product than it did in the past.

a) Total Dissolved Solids (TDS)
b) Plant Energy Performance (PEP)
c) Revolutions Per Minute (RPM)
d) Option (a) and (b)

90. Types of Energy Audit to be performed depends on:

a) Function and type of industry.
b) Depth to which final audit is needed.
c) Potential and magnitude of cost reduction desired.
d) All of the above.

91. The _____ is the simplest and quickest type of audit.

a) Detailed audit.
b) Energy audit.
c) Preliminary audit.
d) None of the above.

92. Energy audit can be classified as.

a) Preliminary audit.
b) Detailed audit.
c) Both (a) and (b).
d) Only option (a).

93. The most basic measuring device needed is the _____.

a) Thermometer.
b) Voltmeter.
c) Wattmeter.
d) Tape measures.

94. A portable hand-held _____ and _____ is very handy for determining the power consumption and power factor of individual motors and other inductive devices.

a) Voltmeter and wattmeter.
b) Wattmeter and power factor meter.
c) Light meter and flash meter.

d) Thermometer and humidity meter.

95._____ measures oxygen and temperature of the flue gas.

a) Fuel efficiency monitor.
b) Combustion analyzer.
c) Contact thermometer.
d) Infrared thermometer.

96._____ is a non-contact type measurement which when directed at a heat source directly gives the temperature read out.

a) Thermocouples.
b) Contact thermometers.
c) Humidity.
d) Infrared thermometers.

97) An energy audit is an_____

a) inspection. c) analysis of energy.
b) survey. d) All of the above.

98) Energy audit is the first step towards_____for consevation of energy.

a) systematic effort. c) process.
b) building. d) only b.

99) Energy audit involves_____and_____of energy related data on regular basis and in a methodological manner.

a) collection. c) Both a&b.
b) Analysis. d) Only a.

100)_____ are portable devices capable of estimating the combusting efficiency of furnaces, boilers, or other fossil fuel burning machines.

a) Sound analyzer. c) Combustion analyzer.
b) Light analyzer. d)Temperature analyzer.

101)_____ is the measure of whether a plant is now using more or less energy to manufacture its product than it did in the past.

a) Total Dissolved Solids (TDS). c) Plant Energy Performance (PEP)
b) Revolutions Per Minute (RPM) d) Option (a) and (b)

102) In any industry,the three top operating expenses are often Found to be energy

a) electrical & thermal. c) none
b) labour and materials. d) option a & b

103) A _____ is an inspection, survey and analysis of energy flows for energy conservation in a building, process and system.

a) Energy audit. c) Wave audit
b) Bank audit. d) None of the above.

104)_____ is a non-contact type measurement which when directed at a heat source directly gives the temperature read out.

a) Thermocouples. c) Contact thermometers.
b) Humidity. d) Infrared thermometers.

105) Energy audit can be classified as.

a) Preliminary audit. c) Detailed audit.
b) Both (a) and (b). d) Only option (a).

106) The most basic measuring device needed is the _____.

a) Thermometer. c) Voltmeter.
b) Wattmeter. d) Tape measures.

107.____ is the key to a systematic approach for decision making in the area of energy management.

a) Energy Audit c) Energy management

b) Efficiency d) None of the above

108. The Bureau of Energy Efficiency launched

a) 2005 c) 2006

b) 2010 d) 2007

109."To minimize energy cost " is an objective of which of the following

a) Bureau of energy efficiency (BEE)

b) Standard and labelling standard (HVAC)

c) Energy Management

d) None of the above

110.____is type of Label allows consumers to compare the energy consumption of similar products.

a) Comparative label

b) Endorsement label

c) Both a & b

d) None of the above

111. Which of the following products on which labelling is not mandatory

a) Frost free c) LPG stoves

b) AC d) Laptops

112. On which Following products is labelling not Voluntary

a) Colour TV c) Ceiling fans

b) Ballast d) Induction motors

113. The prime importance of these _____ is to educate and inform consumers about how energy efficient each product is ?

a) Efficiency chart c) Both a & b

b) Star Rating d) None of the above

114. The following is not an element of M & T system

a) Recording b) Analyzing

c) Controlling d) Complaining

115. The M & T system stand for

a) Market and Trading system

b) Monitoring and Targeting system

c) Market and Targeting System

d) None of the above

116. Which one of the major inputs for the economical developement of any country.

A) management. B) Energy. C) Power. D) planning.

117. Energy is one of the major inputs for the _ _ _ of any country.

A) Environmental developement. B) political development.

C) Economical development. D) None of the above.

118. The fundamental goal of energy management is to produce goods and provide services with_ _ _

A) least cost and least environmental effect. B) high cost and least environmental effect.

C) least cost and least environmental effect. D) none of the above.

119. The fundamental goal of energy management is to produce_ _ _ .

A) least cost and least environmental effect. B) economical management.

C) goods and services. D) none of the above.

120. Definition of energy management given by _ _ _ .

A) Cape hart B) Turner

C) Kennedy. D) All of the above.

121. _ _ _ is the key to a systematic approach for decision making in the area of energy management.
A) Energy audit. B) Energy management.
C) Management. D) Planning.
122. Energy audit is the key to a systematic approach for decision making in the area of_ _ _
A) Energy audit. B) Energy management.
C) Management. D) All of the above.
123. Energy is one of the_ _ _ for the economic development of any country.
A) minor input. B) major input.
C) none of the above. D) all of the above.
124. Energy is one of the major input for the economic development of any country.
A) true B) false
125. Fundamental goal of_ _ _ is to produce goals and provide services.
A) Energy audit. B) Management.
C) Energy management. D) None of the above.

Chapter5: Agriculture equipment and Post-harvest Technology

1) Mechanized agriculture is the process of using agricultural machinery to…..
    a) Mechanize the work of agriculture
    b) Automate the work of agriculture
    c) Develop the work of agriculture
    d) none of the above
2) In modern times,…… has replaced many farm jobs formally carried out by man.
    a) Trucks
    b) Powered machinery
    c) Electric cars
    d) None of the above.
3) Need of farm mechanization is…….
    a) to increase the productivity
    b) to reduce human effort in the farm
    c) Both A and B are correct
    d) none of the above
4) Mechanization in Indian agriculture started with…….
    a) Land reclamation
    b) Development
    c) Central tractor organization
    d) none of the above
5) The production of irrigation pumps and diesel engines started during…….
    a) 1950s
    b) 1930s
    c) 1940s
    d) 2000s
6) The production of tractors and power tillers started in …….
    a) 1950
    b) 1940
    c) 1960
    d) 2001

7) The following is not a farm machinery
    a) Combine harvester
    b) Power tiller
    c) Fresher
    d) Dumper trucks
8) Farm mechanization has helped in…….. of agriculture from conventional to commercial crops
    a) Transformation
    b) Diversification
    c) Transport
    d) None of the above
9) ..... there has been a rising trend in production and sale of farm machinery.
    a) From 1986 to 2000
    b) From 1920 to 2005
    c) From 1935 to 2000
    d) None of the above
10) The leading manufacturer of farm equipment or agriculture equipment it in India are
    a) Mahindra and Mahindra
    b) Sonalika
    c) Force
    d) All of the above

11. It is quite true that the farmers with low earnings per capita because of low per hectare they get from holdings are.....

a) Indian farmers b) American farmers
c) Australian farmers d) all of the above

12. Mechanisation in india at various levels can be done in following ways…

a) by introducing the improved agricultural implements on small scale holding to be operated by bullocks.

b) by using small tractors, tractor drawn machines and power tillers on medium holdings to supplement source.

c) by using large scale tractor and machines on remaining holding to supplement animal power source.

d) All of the above

13. The step towards development of an appropriate agricultural technique in india is working towards the motto of saving.....

a) labour b) cost
c) surplus labour d) all of the above

14. Indian agriculture is undergoing a graduals shift from dependence on human power and animal power to.....

a) mechanical power b) solar power
c) thermal power d) all of the above

15. The machinery which enables the farmers to raise a second crop or multi crop attractive and way of life by becoming a commercial subsistence is….

a) efficient machinery b) agriculture machinery
c) affective machinery d) all of the above

16. At present the farm power availability as per hectare is….

a) 1.84KW/ HA c) 1.85KW/HA
b) 2.04KW/ HA d) 2.06KW/ HA

17. Benefits of mechanization of agriculture is…..

a) it increases production c) low cost of work
b) it increases efficiency d) all of the above

18. Need of farm mechanisation is to...

a) for timely operations of agriculture activities
b) to increase the production and productivity of food grains.
c) efficient utilisation of inputs, water and other natural resources.
d) all of the above

19. Advantages of mechanisation is.....
a) substitute for labour. c) amenity reasons
b) attract or retain farm staff d) all of the above

20. Agriculture machinery can be divided into following groups they are....
a) farm machinery c) drain engineering
b) irrigation engineering d) all of the above

21. Agricultural in India is _____ characteristics.
A) Important. C) unique
B) Base. D) None of the above.

22. The extant of area under the command of draught animals is about _____.
A) 51% C) 50%
B) 49% D) 57%

23. The production of tractor is commenced during 1961-62 ,turning out _____them
A) 880. C) 540
B) 860. D) 800

24. Mechanical and Electrical sources increased from _____-
A) 40 to 83 % C) 30 to 93 %
B) 35 to 87 % D) None of the above.

25. The traditional processing equipment used by Farmers include _____.
A) Supa. C) Chalni
B) Chakiya. D) All of the above.

26. Cocking need of villages are mostly met by the burning of _____.
A) Biomass. C) Hydroelectric
B) Crude oil. D) Neutral gas.

27. Solar photovoltaic devices encouraged their use for water _____.
A) Pumping. C) Lighting
B) Both A & C. D) None of the above.

28. Biomass is obtained For mixture of _____gas.
A) Corban monoxide. C) Hydrogen.
B) Both A & C. D) None of the above.

29. Farmers also adopted sprinkaler system for _____ purpose.
A) Commercial. C) Domestic
B) Industrial. D) All of the above.

30. A general-purpose or row-crop tractor is _____ machines
A. Single use C. Both A & B
B. Universal D. None of Above

31. The most common use of the term "tractor" is for the vehicles used on _____
A. Farm C. Medicinal Purpose
B. Production Industry D. None of above

32. A _____ is a track-type tractor with a blade attached in the front
A. Car C. Bulldozer
B. Truck D. Buses

33. A compact utility tractor (CUT) is a _____ version of an agricultural tractor
A. Smaller C. Medium
B. Larger D. Extreme

34. The earliest tractors were called "_____" tractors
A. Basic C. Common

B. Standard D. Moderate

35. Space technology has been incorporated into agriculture in the form of _____ devices
    A. ISP C. GST
    B. GPS D. None of above
36. Bulldozers are very powerful tractors and have excellent ground-hold
    A. Design C. Ground Hold capacity
    B. Rate D. Carrying capacity
37. One example is that loader tractors were created by _____- the blade
    A. Removing C. Both A &B
    B. Adding D. None of Above
38. The most common variation of the classic farm tractor is the _____
    A. HOE C. TOE
    B. BOE D. None of Above
39. Farm tractor hoe is also called as a _____
    A. Hoe remover C. Hoe weight loader
    B. Hoe Loader D. Hoe Weight remover
40. The most common type of equipment used in farms include balers, plows, mowers and _____
    A. Tractor. C. Car
    B. Cycle. D. All of above
41. The primary benefit of the three-point hitch system is to transfer the _____ and resistance
    A. Arm. C. Volume
    B. Body D. Weight
42. One of the most common tasks on the farm is _____
    A. Hitching C. Both A & B
    B. Non hitching. D. None A & B
43. _____ position in tractor is allows you to rest the bucket on the ground without down pressure or lift
    A. Boat. C. Draft control
    B. Float. D. None of the above
44. Power tiller is also known as the hand tractor or _____
    A. Standing C. Clearing
    B. Walking type D. Running type
45. History indicates that the process of mechanization is dynamic with no ultimate ____
    A. Goal C. obtain
    B. Design D. Sign
46. Each manufactures must improve his _____ to maintain a profitable position
    A. Reputation C. Control
    B. Product D. Customer
47. A tractor is an engineering vehicle specifically designed to deliver a high torque at_____ speeds
    A. High C. Slow
    B. Extreme High D. Medium
48. The word tractor was taken from _____
    A. French B. Sanskrit
    B. Latin D. Japanese
49. Tractors can be generally classified by number of _____ or wheels
    A. Axles C. Single Wheel
    B. Double wheel D. None of above
50. Tillage is normally classified as …….tillage.
    A. Primary. C) Primary or secondary
    B. Secondary. D) Tertiary
51. …… purpose of the tillage is to restrict water movement from the surface layers.

A. Primary. C) Secondary
B. Primary or secondary. D) Tertiary.

52. Primary purpose is to restrict ……. movement from the surface layers.
A. Air. C) Sunlight.
B. Water. D) Dust.

53. Primary tillage is the ……. soil tillage after the last harvest.
A. First. C) Second
B. Third. D) Fourth

54. When there is sufficient power available some soil types are ploughed ……
A. Wet. C) Dry
B. Moisture. D) Non of the above.

55. In clay soils, the fields often have to be fully saturated ……tillage can be undertaken.
A. Before. C) After
B. Beginning. D) Middle.

56. In lighter texture soils such as ……., tillage can be undertaken at moisture levels below field capacity.
A. Loam. C) Loam or sand
B. Sand. D) Non of the above

57. The disc is usually the preferred system as it takes ……. and can handle obstacles much easier.
A. Less power. C) More power
B. Moderate power. D) None of the above.

58. …… plows are preferable in the upland systems but as yet not widely available in Asia.
A. Disk. C) Chisel
B. Tined. D) Sub soiling

59. ……. plows are rows of concave steel discs that revolve as they are pulled.
A. Disk. C) Chisel
B. Tined. D) Sub soiling

60. _____is the following is not a secondary tillage tool
A. Disc plough C. Mould board
B. Disc harrow D. None of the above

61. Power tillers operate most satisfactory with?
A. Rotary tillage C. Plough
B. Transport carts D. Reapers

62. Vertical section of plough influences
A. Pulverization C. Width of cut
B. Depth of cut D. Direction of pull

63. Following is not a hand tool
A. Mould board C. Shovel
B. Spade D. Momaunty

64. _____plough is used to break through and shatter compacted or otherwise impermeable soil layers.
A. Disc plough C. Chisel plough
B. Sub-soil plough D. None of the above

65. Finner operation performed for seedbed preparation is :-
A. Primary tillage C. Strip tillage
B. Secondary tillage D. Rotary tillage

66. _____ are the primary tillage implements.
A. Chisel plough and sub soiler C. Disc plough and disc harrow
B. Chisel plough and disc harrow D. Leveler and clad crusher

67. Ploughing is done to :-

A. Improve soil aeration C. Increase water holding capacity
B. Destroy weeds D. All are correct

68. Jointer and coulter are the parts of :-
A. Disc plough C. Indigenous plough
B. Harrow plough D. MB plough

69. Standard disc plough diameter size is _____
A. 40 to 60 cm C. 70 to 90 cm
B. 60 to 90 cm D. 50 to 70 cm

70. The power tillage is most suitable for:
a) Stationary operation c) Deep ploughing
b) Rotary operation d) All are correct

71. A Vertical disc plough is also termed as:
a) Wheat plough c) Harrow plough
b) Both (a) & (b) d) None of these

72. In disc harrow, the penetration of disc improves by:
a) Increasing disc angle c) Lowering hitch point
b) Regulating optimum speed d) All are correct

73. The gang angle of disc harrow is adjusted in the range of:
a) 0-30 c) 30-60
b) 60-90 d) Above 90

74. _____ is not a tractor drawn tillage tool:
a) Cultivator c) Augar plough
b) Harrow d) Plank

75. _____ farming is a replacement of human and animal power by mechanical power for different farm operation:
a) Mechanized farming c) Mixed farming
b) Both of these b) None of these

76. An implement that pulled and guided by single hitch point of a tractor is:
a) Trailed implement c) Mounted implement
b) Semi mounted implements d) All are correct

77. The plough bottom as combined unit consist of:
a) None of these c) Coulter , jointer and frog
b) Beam , handle and MB d) Share, landside , frog and MB

78. The draft requirement in MB plough compared to disc plough for same depth of ploughing is:
a) Less c) More
b) Equal d) None of these

79. The hitching of plough is done by placing the plough:
a) Few centimeter below ground level c) Few centimeter above ground level
b) On the ground level d) None of these

80. The seed rate required in broadcasting method in comparison to drilling is:
A. More B. Less
C. Equal D. All are correct

81. The dibbling is mostly used for sowing:
A. Cereal grains B. Vegetables
C. Plantation crop D. All are correct

82. The dropping of seeds in furrow lines in continuous flow is:
A. Drilling B. Planting
C. Dibbling D. Hill dropping

83. Dibbler is a:
A. Seed drill B. Planter
C. Trans planter D. None of these

84. The equipment used for dropping seeds in a continuous stream and the spacing between plant to plant in a row is not constant is:

A. Seed drill B. Planter
C. Trans planter D. All are correct

85. The method of planting in which row-to-row as well as plant-to-plant distance is uniform is:

A. Drilling B. Hill dropping
C. Check row planting D. All are correct

86. The precision planter is:

A. Seed drill B. Broadcaster
C. Dibbler D. Dofaan

87. Seed drill is used for sowing:

A. Small seeds B. Bolder seeds
C. Seedlings D. Plants

88. Planters are used for sowing:

A. Small seeds B. Bolder seeds
C. Seedlings D. Plants

89. The dibbling method of sowing reduces seed rate by:

A. 1/2nd B. 1/3rd
C. 1/5th D. 2/3rd

90._____different types of crops are grown in India.

a) 230 b) 260
c) 250 d) 220

91. In 1951 there were _____no of tractors present in India.

a) 8635 b) 8000
c) 5000 d) 200

92._____has highest average farm power intensity.

a) Karnataka b) Maharashtra
c) Haryana d) Punjab

93. India receives_____ amount of solar energy

a) 5x1015 kwh/year b)5x1000 kwh/year
c) 5x1012 kwh/year d) none of the above

94. Solar energy in India can be used for _____number of days.

a) 365 b) 200
c) 100 d) 150

95. Production of tractors, motor, engines and process equipment is domain of organised

a) Unorganised sector b) Organised sector
c) Both of the above d) None of above

96. The extent of area under the command of draught animals is about

a) 55% b) 54%
c) 57% d) 60%

97. _____gas is the mixture mainly consisting of carbon monoxide and hydrogen in specially designed apparatus.

a) CNG b) LPG
c) Biomass d) None of the above

98. Anaerobic fermentation of animal excreta leads to generation of _____

a) Petrol b) Diesel
c) Natural gas d) Methane

99. cooking needs of the village are mostly met by the burning of _____

a) Biomass b) Petrol
c) Diesel d) None of the above

100. Mechanization helps in_____

a) Dairying b) Fisheries
c) Animal husbandry d) All of the above

101. The level of farm mechanization in _____is 90%
a) US b) China
c) Brazil d) Japan

102. The level of farm mechanization in _____is 75%
a) US b) China
c) Brazil d) Japan

103. The level of farm mechanization in _____is 57%
a) US b) China
c) Brazil d) Japan

104. Use of improved implements has potential to increase productivity up to_____
a)10% b) 30%
c) 20% d) 15%

105. Use of improved implements has potential to reduce the cost of cultivation up to_____
a)10% b) 30%
c) 20% d) 15%

106. _____seeding and planting operation are mechanized in India
a) 40% b) 60%
c) 37% d)29%

107._____ operation are mechanized in India
a) seeding and planting b) soil working
c) irrigation d) plant protection

108._____ seed bed preparation are mechanized in India
a) 40% b) 60%
c) 37% d) 29%

109. _____plant protection operation are mechanized in India
a) 40% b) 34%
c) 37% d) 29%

110. Tractor is an important machine used for .....mechanization.
A) Factory B) Farm
C) Industrial D) Commercial

111. Practice population has increased from..... to about 1.04 million during last 40 years
A) 1000 B) 5000
C) 9000 D) 7000

112 .....models of tractor are being produce in India in different HP ranges.
A) 39 B) 40
C) 50 D) 45

113. More than_____farmers depend upon animal drawn implements.
A) 50% B) 60%
C) 45% D) 80%

114. Use of improved implements has potential to _____productivity up to 30% and reduce the cost of cultivation up to 20%
A) Increase B) Decrease
C) Improve D) Up

115. Though agriculture contribute only 17.4 % to the country's gross value added for the year....
A) 15.4% B) 17.4%
C) 18.4% D) 20.4

116. History indicates that the process of mechanization is .....with no ultimate goal in sight.
A) Dynamic B) Motion
C) Statics D) None of the above

117._____ is a self-propelled power unit having wheels for tracks for operating agriculture implements and machines including trailers.

A) Car B) Tractor

C) Motorcycle D) Truck

118. Post harvest Technology deserve special attention.

A) True B) False

119. Most grain and seed crops are harvested with combined harvest threshers, commonly known as.....

A) Combines B) Different

C) Crops D) None of above

120. India is the largest producer of tractors in the world.

A) True B) False

121. Safety, comfort and _____ fir the operator will continue the great deal of attention.

A. Inconvenience C. Difficulties

B. Convenience. D. None of the above

122. Mechanical harvest of fruits and vegetables are difficult because_____

A. Different characteristics. C. Machinery

B. Operator D. All of the above

123. Tractor is a _____ power unit.

A. Self-propelled. C. Propelled

B. Impelled D. None of the above

124. Tractor engine is used as____

A. General purpose C. Special purpose

B. Prime mover. D. None of the above

125._____tractor us used for major operation such as ploughing, harrowing, sowing, harvesting and transporting work.

A. Row crop Tractor C. Special purpose tractor

B. Crawler tractor D. General purpose tractor.

126. Four wheel tractors are most _____ everywhere.

A. Popular. C. Non popular

B. Best D. Worst

127. How many HP for tractor is suitable suitable for 20 hectares farm?

A. 10-15 C. 20-25.

B. 30-35 D. 40-45

128. A tractor with fewer wheels Base, higher ground clearance may work successful in which soil

A. Heavier C. Black cotton soil

B. Wet soil D. Lighter soil

129. Tractors with less specific fuel consumption should be preferred because.....

A. High efficiency C. Good output

B. Good for field D. Less cost.

130. Air cooled engine is preferred in which condition?

A. Cool condition C. Humid condition

B. Hot zone. D. None of the above

131. _____ is the prime mover in which the direction of travel and its control for field operation is performed by the operator walking behind it.

A. Power tiller C. Tillage

B. Disc plough D. Rotary tiller

132. The concept of power tillage came in the world in the year _____.

A. 1910 C. 1920

B. 1945 D. 1932

133. _____ is the first country to use power tiller on large scale.

A. India C. China.

C. Japan D. Nepal.

134. Power tiller was first introduced in India in the year _____.
A. 1963 C. 1953
B. 1950 D. 1945

135. Power miller may be called a _____ walking type tractor.
A. Double axle C. Single axle
B. Triple axle D. None of the above

136. _____ is pulled and guided from single hitch point but its weight is not supported by the tractor.
A. Trailed type implement C. Semi mounted type implemented
B. Mounted type implemented D. Automatic implemented

137. For operation of power tiller, the power is obtained from the _____.
A. Batteries C. IC engine
B. SI engine D. All of the above

138. _____ is the mechanical manipulation of soil to provide favorable condition for crop production.
A. Power tiller C. Rotary tiller
B. Tillage D. Disc plough

139. Production of power tiller rapidly increased during the year _____.
A. 1950-1970 C. 1970-1980
B. 1960-1975 D. 1950-1965

140. _____ is used to transmit power from the engine to the main clutch.
A. V-Belt C. open belt drive
B. cross belt D. flat belt

141._____part is attached to the shoe which helps to penetrate into soil
a) shoe
b) beam
c) saddle
d) hammer

142._____ connects the main body to the plough to the Yoke
a) beam
b) saddle
c) stool
d) hammer

143. The size of the plough is represented by the _____ of the body
a) width
b) breath
c) length
d) height

144._____ tillage are proper for seeding and planting operations a secondary
a) Primary
b) Basic
c) Medium
d) None of these

145. The following tillage is not a type of a tillage
a) maximum
b) minimum
c) strip
d) rotary

146._____ tillage utilizes two or more different types of tools to simplify fields
a) combined
b) basic

c) strip
d) rotary

147._____ is a individual working element such as a disk or shovel
a) tool
b) machine
c) stripped
d) rotary

148. The following operation is not carried out by an plough
a) sowing seeds
b) breaking the clods
c) crushing the soil
d) hammering the soil

149._____ operation is used to cut and mix the soil
e) rotary
f) mlutch
g) strip
h) none of these

150. The steel mainly contains how much percentage of carbon
a) 0.70 to 0.80%
b) to 0.3 %
c) 0.5 to 0.1 %

151._____ is the function of mold board plough.
a) Cutting the furrow slice
b) Lifting the soil
c) Pulverizing the soil
d) All of the above

152.____ is the component of mold board plough.
a) Land side
b) Soil
c) Both a & b
d) None

153._____ component is penetrates into soil and make a horizontal cut below the soil surface.
a) Frog
b) Land side
c) Share
d) None

154. Share is a_____ components.
a) Sharp
b) Polished
c) Pointed
d) All of above

155. Shares are make of _____
a) Chilled cast iron
b) Steel
c) Both
d) None

156.___ to ____ manganese besides other minor elements.
a) 0.10 to 0.50%
b) 0.20 to 0.60%
c) 0.40 to 0.80%
d) 0.50 to 0.80%

157._____ are the types of moldboards.

a) General purpose
b) Stubble
c) Slat
d) All of above

158._____is the general purpose lying.

a) Between stubble and sod
b) Between soil and mud
c) Between man and machine
d) None

159._____ turns the furrow slice used in stubble soils.

a) Stubble type
b) Slat type
c) Share
d) Jointer

160._____ is used in tough soil of grasses.

a) Soil
b) Sod & Breaker type
c) Slat type
d) Plough

161._____have gaps between the slats.

a) Share
b) Soil
c) Slat type
d) None

162. There are a few accessories necessary for plough are _____.

a) Jointer
b) Coulter
c) Land wheel
d) All of above

163._____ is the wheel of the plough, which runs on the plough land.

a) Gauge wheel
b) Land wheel
c) Furrow wheel
d) None

164. Disc plough is more useful for_____

a) Shallow ploughing
b) Fast ploughing
c) Deep ploughing
d) Slow ploughing

165. Disc plough works in loose soil also without much clogging.

a) True
b) False

166.Standard disc plough contains steel disc of _____ diameter.

a) 10-30cm
c) 60-90cm
b) 30-60cm
d) 90-120cm

167. The components of disc plough are _____.

a) Frame extension
c) Furrow wheel
b) Top link connection
d) All of the above

168. The disc is made from _____ of 5mm-10mm thickness.

a) Heat treated steel
c) Stainless steel
b) Case hardened steel
d) High speed steel

169. It can be used in _____ soil without much danger of breakage.

a) Soft
b) Dry
c) Stumpy and Stony
d) Wet

170. The disc angle of a good plough varies between_____.
a) 25°-30°
b) 10°-15°
c) 18°-24°
d) 42°-45°

171. The function of scraper is to_____.
a) Remove soil stuck to the disc
b) Provide support to the disc
c) Used for holding plough
d) None of the above

172. The number of tynes varies from_____.
a) 3-4
b) 18-23
c) 79-90
d) 28-54

173. Blade that works well in trashy conditions_____.
a) Twisted blade
b) Straight blade
c) L type
d) None of the above

174. Ploughs used to break through shatter compacted or imperable soil layers.
a) Disc plough
b) Mold board plough
c) Chisel plough
d) Country plough

175. The hp required to operate subsoil plough _____.

a) 10-20hp
b) 20-30hp
c) 60-100hp
d) 140-200hp

176. Secondary tillage consists of conditioning the ____to meet the different tillage objectives of the farm

A) Weather. C) Atmosphere
B) Soil. D)All of the above

177. Lighter and final operations performed on the soil after _____ tillage operations.

A) Primary. C) Tertiary
B) Secondary D) None

178. Secondary tillage implements are _____and _____.

A) Hammer and screwdriver. C) Tractor and bullock
B) Lathe and drilling machines. D) All of the above

179. Harrow is secondary tillage implement used to cut soil to shallow depth for _____ and _____

A) smoothening. C) none of the above
B) pulverizing. D) both

180.____ harrow consist of two gangs placed end to end.

A) Single action disc harrow
B) Double action disc harrow
C) Triple action disc harrow
D) None above

181. Types of double action disc harrow

A) Tandem disc harrow. C) None
B) Off-set disc harrow. D) Both A and B

182. Each set of disc mounted on common shaft is called as ____

A) Arbor bolts. C) Gang
B) Spool. D)
Bearing

183. ____ operates gang mechanisms.

A) Gang. C) Spool
B) Gang bolt D) Gang control lever

184. The lateral movement of disc on shaft is called as _____

A) Spool. C) Gang
B) Bearing D) Gear

185._____ is essential to counter act the end thrust of gang due to soil thrust..

A) Spool. C) Gang
B) Bearing. D) Gang bolt

186. _____ it is a harrow with peg shaped teeth of diamond cross section to a Rectangular frame.

A) Spike tooth harrow C Spring tooth harrow
B) Acme harrow D Triangular harrow.

187._____ it is made of wooden plank used for smoothing the soil and crushing the Weeds .

A) Triangular harrow C Blade harrow
B) Patela D Guntaka

188._____ is used for making bunds or ridges by collecting the soil .

A) Ridger C leveller
B) puddler D Bund former

189. The ridger generally has _____ shaped shares fitted to the frog .

A V shaped C U shaped
B Both A and C D None of the these

190._____ harrow which consist of one or more blades attached to the beam

Or frame, used for shallow working of the soil.

A Spike tooth harrow C Spring tooth harrow

B Acme harrow D Blade harrow

191. The weight of the puddler is _____.

A 10-20 kg C 20-30 kg

B 30-40 kg D 45-55 kg

192. Puddling is done in standing water of _____ depth.

A. 10-15 cm C 20-25 cm

B. 5-10 cm D 15-20 cm

193. _____ is known as ridging plough and double mould board plough.

A. Bund former. C Puddler

B. Leveller. D Ridger

194. _____ it's consists of former board , beam and handle.

A. Ridger. C Cultivator

B. Puddler. D Bund former

195. _____ it is a Cultivator with tines or blades mounted on a power driven horizontal shaft.

A. Disc cultivator. C Rotary cultivator

B. Tine cultivator. D Trailed type cultivator

196._____is not a tractor drawn tillage tool

A. Cultivator B. Augar plough

C. Narrow D. Plank

197._____ is not a secondary tillage.

A. Disc plough B. Plough

C. Mould board D. None of these

198._____is not a hand tool.

A. Mould board. B. Shovel

C. Spade D. Mamounty

199. Power tillage operate most satisfactory with_____

A. Rotary tillage B. Plough

C. Transport carts D. Reapers

200.Vertical section of plough influence_____

A. Pulverisation B. Depth of cut

C. Width of cut. D. Direction of pull

201. Dead furrow is made by_____

A. One way MB plough. B. 2 way MB plough

C. Ridger. D. Disc harrow

202. The mowers are designed to cut_____

A. Wheat B. Poddy

C. Mustard. D. Grasses

203. The thresher caused Mon seed damage if_____

A. Speed is increases B. Clearance is increase

C. Feed rate is reduced. D. Speed is reduced

204. The two primary tillage equipment's are_____

A. MB and disc harrow B. Disc plough and disc harrow

C. Disc harrow and cultivator. D. MB and. Subscriber

205. weight transfer in a tractor in a tractor implement system is caused by_____

A. Application of Paul. B. Tractor force

C. Tractor slip. D. Weight of operator

206. The power tiller harrow is a _____ mounted reciprocating comb type.

A. Rear. C. Right

B. Front. D. None of the above

207. It has Staggered pegs in two rows at ___ Spacing.

A. 100 mm. C. 400 mm

B. 200 mm D. 50 mm

208. The frequency of operation is ___ per minute
A. 600 cycles C. 400 cycles
B. 100 cycles. D. 200 cycles

209. Bund former is used fir making bunds or ridges by collecting ___
A. Mud C. Water
B. Soil. D. All of the above

210.____ are used to hold water in the soil.
A. Bunds. C. Harrow
B. Ridger. D. None of the above

211. The _____ is also used for forming field or channels.
A. Bunds. C. Ridger
B. Harrow. D. None of the above.

212. The ridger has—- Shaped or —— shaped share fitted to the frog
A. V, Wedge. C. U, wedge
B. None of the above D. Both A and C

213. —— is important for churning of the soil with water
A. Levelers. C. Bunds
B. Ridger. D. Puddler

214. Puddling is done in standing water of ——- depth
A. 5-10 cm. C. 1-10 cm
B. 0-5 cm. D. 10-15 cm

215. The weight of the puddler is ——
A. 150-200 kg. C. 100-150 kg
B. 30-40 kg D. 200-250 kg

216. _____ consists of preparing seedlings in nursery and then planting these seeds in the prepared field.
a) Hill dropping
b) Transplanting
c) Seed dropping behind the plough
d) Check row planting

217. Name the method which is not a sowing method
a) Broadcasting
b) Hill dropping
c) Dibbling
d) Hitching

218. _____ is useful for uprooting and burying weeds between standing rows of rice crops in wetlands
a) Sweep
b) Engine operated weeder
c) Cono weeder for paddy
d) Dry land weeder

219. Below is not a function of seed drill
a) To meter the seeds
b) To carry the seeds
c) To remove the seeds
d) To place the seeds in furrow

220._____ is a component of seed drill
a) Transport wheel
b) Storage box
c) Cultivator
d) Driller

221. Weeds can compete with productive crops or pasture or convert productive land to unusable scrub
a) True b) False

222._____ weeder is useful for weeding crops like tapioca ,cotton ,sugarcane, tomato and pulses

a) Engine operated weeder
b) Sweep
c) Cono weeder for paddy
d) Junior hoe

223.____ has a long handled tool and a 120 mm diameter star wheel
a) Engine operated weeder
b) Cono weeder for paddy
c) Dry land weeder
d) Sweep

224. Junior hoe consist of _____ and _____ attached to the framework with hinge arrangement
a) Reversible showers, nozzle body
b) Reversible shovels, curved tyres
c) Reversible shovels, curved tyres
d) Pressure regulator, spray lance

225. In junior hoe the coverage is _____ ha per day
a) 1.5
b) 2.5
c) 1.7
d) 3.0

226. Very common sowing methods used in villages.
a. Broadcasting
b. Dibbling
c. Drilling
d. Seed dropping behind the plough

227. Transplanting method is generally used in nursery.
a. True
b. False

228._____ method used for planting in row to row and plant to plant distance is uniform.
c. Transplanting
d. Hill dropping
e. Check row planting
f. Drilling

229. Functions of seed drill machine_____.
g. To carry the seeds
h. To open furrow to an uniform depth
i. To cover the seeds and compact the soil around the seed
j. All of the above

230. Components of seed drill.
a. Frame
b. Seed box
c. Transport wheels
d. All of the above

231. In dry land weeder coverage is __ha/day
a. 0.05
b. 0.07
c. 0.1
d. 0.18

232. The Sweep coverage is ___ to ___ ha/day.
a. 1.75 to 2.5
b. 1.95 to 3.5
c. 1.35 to 2.3

233. Basic components of sprayer.
a. Nozzle body
b. Nozzle boss
c. Filter

d. Spray gun
e. All of the above

234. Broadcasting is the process of random scattering of seed on the surface of seed beads.
a. True
b. False

235. _____ methods consists of dropping the seeds in furrow lines in a continuous flow and covering them with soil.
a. Dibbling
b. Transplanting
c. Drilling
d. Seed dropping behind the plough

236. _____equipment is used for wedding in between rows of standing crops.
a) Engine operated weeder b) Cono weeder for puddy
c) Junior how d) Dry land weeder

237. _____ is not the component of spare.
a) Swirl plate b) Filter
c) Cut-off value d) Pump

238. _____ machine is used for placing the seeds in continuous furrows at uniform rate.
a) Dry land weeder b) Junior home
c) Seed drill d) Engine operated weeder.

239. _____ is not the function of seed drill
a) To carry seeds b) To increase size of seed
c) To meter the seeds d) Two places in furrows in acceptable form.

240. _____ is not component of seed drill.
a) Pressure regulator b) Frame
c) Seed box d) Transport wheel

241. Which equipment is used for weeding in Row crops in rain fed.
a) Puddy cono weeder b) Engine operated weeder
c) Dry land weeder d) Seed drill

242. Paddy Kana weeder is useful for.
a) Weeding between rows of crops like cotton for sugarcane.
b) For uprooting and burying weeds in between standing rows of rice crops in in wetland.
c) For weeding in raw crops in rain fed.
d) For placing seed in continuous flow.

243. _____ is the type of seed metering mechanism.
a) Fluted feed type b) Cup feed type
c) Brush feed mechanism d) All of above

244. Which component of seed drill is used for transmit power to operate seed dropping mechanism.
a) Frame b) Transport wheel
c) Seed box d) Covering device

245. _____ is the application of sprayer.
a) To break the liquid droplet of effective size
b) To distribute them uniformly event plants
c) To regulate amount of liquid to avoid excessive application.
d) All above them

246. _____ the capacity of ultra-low volume spray
a) less than 5 litres/hector
b) more than 5 litres/ hector
c) 5 to 400 litres/hector
d) More than 400 litres/hector

247. Knapsack hand compression sprayer develops pressure between
a) 2 to 3.5 kg/cm
b) 3 to 12 kg/cm
c) 12 to 35 kg/cm

d) None of the above

248. _____ sprayer do not require a separate tank
   a) Hand compression sprayer
   b) Knapsack hand compression sprayer
   c) Rocker sprayer
   d) Power sprayer

249. _____ is the types of nozzle used in sprayers
   a) Hollow cone type of nozzle
   b) Solid cone type nozzle
   c) Fan type nozzle
   d) All of the above

250. _____ is not a type of spray
   a) High volume spray
   b) Medium volume spray
   c) Low volume spray
   d) Ultra low volume spray

251. _____ are the application of pedal sprayer
   a) Row crops
   b) Vegetables
   c) Nursery stocks
   d) Tall crops

252. Harvesting can be done by
   a) Manully operated tools
   b) Animal drawn machines
   c) Mechanically operated machines
   d) All of the above

253. _____ is the minimum pressure required for operating a nozzle in desirable condition
   a) 1 kg/cm
   b) 1.5kg/cm
   c) 2 kg/cm
   d) 2.5kg/cm

254. Nozzle consists of _____components
   a) Washer
   b) Vortex plate
   c) Strainer
   d) All of the above

255. The power developed in prime mover of power operated sprayer is_____
   a) 1 to 5 HP
   b) 5 to 10 HP
   c) 10 to 20 HP
   d) None of the above

256. Junior hoe cover …… ha per day.
   a. 2.5. c. 3.5
   b. 1.5. d. 1.0

257. Application of Herbicides to remove ……
   a. Weeds c . Disease
   b. Pest. d. Plant

258. Application of insecticides to control ……..
   a. Weeds c. Disease
   b. Insect Pest d. Plant

259. ……Component to remove suspended matter large than a predetermined size from fluid.
   a. Relief valve. c. Filter
   b. Spray gun. d. Nozzle

260. …… Device to control the pressure of fluid and gases within range of settings.
   a. Relief valve. c. Filter
   b. Spray gun. d. Pressure regulator
261. Fan type nozzle capacity is …….. to …….. litres.
   a. 0.5 to 3.5. c. 0.6 to 3.5
   b. 0.6 to 4. d. 0.8 to 6
262. Motorized knapsack sprayer blade rotation at about ……. To …….. rev/min.
   a. 200 to 300. c. 100 to 120
   b. 120 to 400. d. 150 to 300
263. In battery operated sprayer fit …….. Volta rechargeable battery.
   a. 3 c. 4
   b. 5. d. 6
264. Foot or pedal sprayer developed ……. Kg/cm^3 Pressure.
   a. 17-21. c. 18-25
   b. 17- 28. d. 20-25
265. Nozzle diameter of hand atomizer is between …… to ……
   a. 0.7 – 1.5. c. 1.1- 1.5
   b. 0.6 – 1.6. d. 0.8 to 1.8
266. Equipment used primary for wedding is _____
   a) Spray Lance
   b) Nozzle cap
   c) Intercultural
   d) Nozzle tip
267. A _____ and _____are fixed to the framework for guiding.
   a) Nozeel cap , disc
   b) Handle, beam
   c) Spray boom, filter
   d) Shovel can, framework
268. Basic components of sprayer is
   a) Nozzle body
   b) Spray boom
   c) Nozzle cap
   d) All of the above
269. _____ nozzle which forms narrow elliptical spray pattern.
   a) Hollow cone nozzle
   b) Hard cone nozzle
   c) Solid cone nozzle
   d) Fan nozzle
270. Han optimizer sprayer has container of_____to_____ litres capacity.
   a) 0.5 to 4.5
   b) 0.1 to 3.4
   c) 0.5 to 3.5
   d) None of the above
271. _____Sprayer are versatile and simple power operated machines.
   a) Foot pedal sprayer
   b) Motorized knapsack sprayer
   c) Hand optimizer
   d) All of the above
272. Motorized knapsack sprayer are powered by____-____ HP petrol engine.
   a) 1.2 to 3.2
   b) 2.2 to 3.4
   c) 0.2 to 3.2
   d) 1.2 to 3.0
273. A Power sprayer essentially consists of:-

a) Tank
a) Agitator
b) Pressure Gauge
c) All of the above

274. Motoried knapsack duster is commonly in_____
a) America
b) India
c) France
d) None of the above

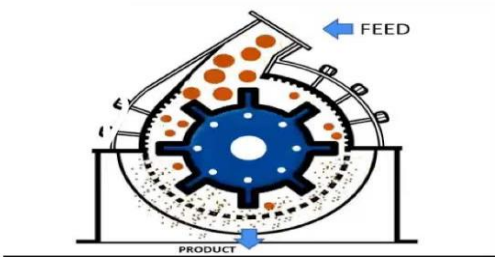
275. _____ is a machine to cut herbage crops and leave the them in swath.
a) Wind rower
b) Sickle mower
c) Fail mower
d) Gang mower

276. It consists of beats mounted on a shaft which rotates inside a closed casing and concave.
a) Dummy type
c) Spike-tooth type
c) Hummer type
d) Axial flow type

277. It consists of spike tooth cylinder, woven- wire mesh concave and upper casing provided with helical concave.
a) Dummy type
c) Spike-tooth type
b) Hummer type
d) Axial flow type

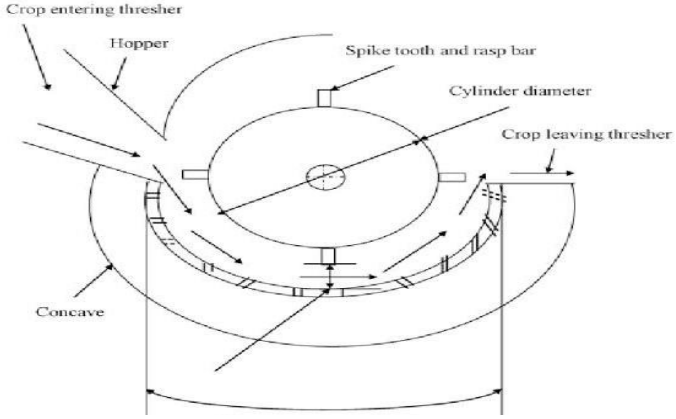
278. _____are mounted on the Periphery of a cylinder that rotates inside a closed casing and concave.
a) Dummy type
c) spike-tooth type
b) Hummer type
d) Axial flow type

279. Identify the picture.



a) Hummer mill type
b) Spike-tooth type
c) Dummy type
d) Axial flow type

280. Identify the picture.



a) Concave clearance
b) Sieve clearance
c) Concave units
d) Grain sieve

281. Machine factors which affecting thresher preformation.
a) Variety of crop, Moisture in crop material b) Feeding chute angle, cylinder type
c) Cylinder speed, feed rate d) Cylinder type ,feed rate

282. Operational factors which affecting thresher preformation.
a) Variety of crop, Moisture in crop material b) Feeding chute angle, cylinder type
c) Cylinder speed, feed rate d) Cylinder type ,feed rate

283. Crop factors which affecting thresher preformation.
a) Variety of crop, Moisture in crop material b) Feeding chute angle, cylinder types
c) Cylinder speed, feed rate d) Cylinder type, feed rate

284. _____machine designed for harvesting, threshing , cleaning and collecting grains while moving through standing crops.
a) Combine b) Self operated VCR
c) Power roller thresher d) Post harvesting technology

285. The _____ takes place between the cylinder and concave units of the combine.
a) Threshing b) Feeding drum
c) Straw spreader d) Separating

286. _____ is an assembly comparing of fingers, knife guides on wearing plates and shoe.
a) Cutter bar b) Knife section
c) Pitman d) Shoe

287. ____ are the applications of cutting bar.
a) Cutting metal sheets. b) Cutting glass type materials.
c) Cutting grasses and forage. d) None of these.

288. Knife clips are placed with wearing plates spaced __to__ apart
a) 20 to 30 b) 45 to 60
c) 20 to 35 d) 30 to 40

289. _____ type of connecting rod which is pinned to the crankshaft with the help of a pin, which helps to transmit the cut material.
a) Pitman b) Cutter bat
c) Shoe d) Wearing plate

290. _____ is a common troubles in the operation of Mower.
a) Knives get twisted. b) Knives get melted.
c) Knives gets rusted. d) Knives gets break.

291. At what degree does the cutter bar is set for achieving the object ?
a) 96 b) 88
c) 69 and half. d) 105

292. ___is the length of cutter bar which is recommended as per the standard of design of it.
a) 4cm b) 6cm
c) 2cm d) 3cm

293. Cutter bar is made up of which material_____
a) High grade steel. b) Low carbon alloy steel.
c) Platinum. d) High speed tool steel.

294. How much of lead degree is given if the cutter is set at 88 degree?
a) 2-degree b) 4 degree
c) 3-degree d) 5 degree

295. _____ are the labelling of cutter bar.
a) Shoe, ledger plate, wearing plate, knife, knife section, etc.
b) Star wheel, engine, cage wheel, etc.
c) both A & B
d) Conveyor belt, cutter bar, rivers, etc.

296. In vertical conveyor reaper, the crop to be harvested are guided by
a) Star wheel b) Reel

c) Row divider d) Cutter bar

297. In reaper, a flat plate with reo chatting edited is know as:
a) Cutter bar b) Knife section
c) Knife d) All are correct

298. The length of cutter bar of tractor front mounted reaper is
a) 1.8-2.0 m b) 1.9-2.1 m
c) 2-2.5 m d) 2.25-2.5 m

299. The main function of potato digger elevator is
a) Digging of potatoes b) Windrowing of potatoes
b) Both (A) & (B) c) None of these

300. Self-propelled combine harvester is provide with
a) Powering engine b) Petrol engine
c) Diesel engine d) Kerosene engine

301. The dummy type thresher is also termed as
a) Rasp bar type thresher b) Hammer mill type thresher
c) Spike tooth type thresher d) Syndicator tooth type thresher

302. A multi type thresher is equipped with
a) Spike tooth cylinder b) Rasp bar cylinder
c) Hammer mill cylinder d) All of the above

303. The threshing efficiency of thresher depends on
a) Cylinder peripheral speed b) Cylinder concave clearance
c) Feed rate, moisture content and type of crop d) All are correct

304. The spacing between two adjacent discs in Olpad thresher is
a) 5 cm b) 10 cm
c) 15 cm d) 20 cm

305. The Japanese type rotary thresher is used for threshing
a) Paddy b) Wheat
c) Sunflower d) Safflower

306. Manual production using …… manned cell operating indepently.
(a) Single (c) Double
(b) Both (d) None

307. The single stations are automated to ….. labor and …… rate.
(a) Different, high (c) High, different
(b) Reduce, increase (d) Increase, reduce

308. Machine can operate even under extreme ___
(a) Pressure (c) Temperature
(b) Atmosphere (d) All above this

309. The main Merits of automation are:-
(a) High initial cost (c) High production rate
(b) Increased consistency of output (d) None of above

310. The main Demerits of Automation are:-
(a) Increased throughput or productivity
(b) Reduce some work related injuries
(c) Displaces workers due to job replacement
(d) All above this

311. Type of Automation….
(a) Fixed (c) Flexible
(b) Both (d) None

312. Relatively inflexible in accommodating product change in which automation?
(a) Fixed (c) Programmable
(b) Flexible (d) All of them

313. Most suitable for batch productions are in which automation depends?
(a) Fixed (c) Programmable
(b) Flexible (d) All

314. Flexibility to deal with product design variation depend in which automation

(a) Fixed (c) Programmable
(b) Flexible (d) Both B & C

315. Performs tasks that are beyond human____
(a) Size (c) Weight
(b) Speed (d) All

316. Post harvest Technology opyimum in___
(a) Losses in handling (c) Cost reduction
(b) Losses in packaging (d) All

317. Post harvest technology has potential to create ____
(a) Rural industries (c) Urban industries
(b) Small scale ind. (d) Large scale ind.

318. In India,___ people live in village and____ of them depend on agriculture
(a) 50%,50% (c) 60%,805
(b) 80%,70% (d) 70%,705

319. In which process, Purification of raw materials by removing foreign matter
(a) Harvesting (c) Primary
(b) Secondary (d) Tertiary

320. In which process, processing of primary processing raw material into product
(a) Harvesting (c) Secondary
(b) Tertiary (d) None

321. RTC means ____ in consumer preferences in food processing sector.
(a) Ready to cook (c) Ready to creat
(b) Ready to cut (d) none

322. India is the world 2nd largest producer of ___ & _____
(a) Car, bike (c) Education, industries
(b) Both a & c (d) Fruit, vegetable

323. ____ production has traditionally been rural level cottage industrial activity
(a) Pickles (c) Rice
(b) Both a & d (d) Chutneys

324. Important vegetable exported are___
(a) Carrot (c) Onions
(b) Root (d) Other

325. The main purpose of agricultural processing_____
(a) Increase production (c) Reduce labour
(b) Increase speed of working (d) None

326. Knife clips are placed with wearing plates spaced from_____cm apart.
A) 10-20cm
B) 60-90cm
C) 15-25cm
D) 30-30cm

327. Play in bearings and worn knife head holders caused due to _____ in cutter bar.
A) Pitman
B) Breaking of knives.
C) Knife head.
D) Grass board.

328. Capacity of vertical conveyor reaper is
A) 0.1-0.9 ha/h
B) 10-20 ha/h
C) 0.4-0.6 ha/h
D) 1-2 ha/h

329._____ is not well register, there is unbalance load, uneven harvesting and exclusive clogging of crops on the knife
A) Vertical conveyor reaper
B) MOVER

C) Reaper binder
D) Potato digger elevator.
330. Different parts of Thresher are
A) Feeding device
B) Threshing cylinder
C) Concave
D) All of the above.
331. Major type of Thresher commercially available
A) Dummy
B) Raspbar
C) Concave
D) Elevator Canvas
332. To separate grains from the harvested crop and provide clean grain without much loss and damage which called as_____
A) Potato digger elevator
B) Groundnut digger shaker
C) Reaper binder
D) Threshing
333. Post harvest technology has to develop in consonance with the needs of each society to
A) Self-propelled type
B) Improve nutrition
C) PTO driven type
D) Conveyors
334. In threshers what are mounted on the periphery of the cylinder
A) Spike tooth type
B) Raspbar type
C) Syndicator type
D) Wire loob type.
335. Is hammer mill is similar to dummy type, but it is provided with aspirator for cleaning grains.
A) True
B) False
336. ____is part of the Cutter bar is shaped in Triangular shape with two cutting edges
a) Knife head
b) Knife back
c) Grass board
d) Knife Section
337. Cutter Bar made of ____
a) Copper
b) High Grade Steel
c) Cast iron
d) None of the above
338. The conventional type of Mower consists of which of the following
a) Wearing Plate
b) Nozzle
c) Air Chamber
d) None of the above
339. Steel Tank in the power sprayer is used to avoid
a) Moisturisation
b) Corrosion
c) Leakages
d) Stability
340. The reaper in a tractor can be raised or lowered by
a) Mechanically
b) Pneumatic system
c) Hydraulic system

d) Electric system

341. _____ is the range of capacity of Vertical Conveyer reaper
a) 0.1- 0.5 ha/h
b) 0.4-0.6 ha/h
c) 10-15 ha/h
d) None of the above

342. A potato digger elevator can be mounted to a tractor with _____ hp.
a) 10-15 hp
b) 20-25 hp
c) 50-70 hp
d) None of the above

343. ___ is the limit percentage for grain loss in India.
a) 1.5 % b) 15%
c) 5 % c) 7.26 %

344. ____machine is used for "Threshing , Harvesting , Separating , Cleaning and Collecting grains "
a) Lathe b) Milling
c) Combine d) Forklift

345. By which dimensional cut is the COMBINE indicated
a) Length b) Width
c) Diameter d) Diagonal

345. A tractor of 20-25hp is suitable for ..... hectares farm.

a. a) 15 c) 20
b. b) 25 d) 30

346. V-Belt has .... efficiency and its works as a Shock absorber.
a. Low c) High
b. Very low d) Very High

347. General purpose tractor is used for
a. Major farm operations c) Definite jobs
b. Crop cultivation d) All of the above

348. The first successful model of power tiller was designed in the year?
a. 1920 c) 1963
b. 1947 d) 1950

349. Special purpose tractor is used for
a. Major purpose operations c) Definite jobs
b. Crop cultivation d) None of the above

350. A tractor of 30-35hp is suitable for ..... hectare farm
a. 20 c) 30
b. 25 d) 35

351. ..... tractors are almost used in the current generation.
a. Petrol c) Electric
b. CNG d) Diesel

352. Walking Type Tractor is also called as
a. Wheel tractor c) Crawler tractor
b. Power tiller d) Both a and b

353. Tractor having three of four pneumatic wheels are called as .....
a. Wheel tractor c) Walking tractor
b. Crawler tractor d) Power tiller

354. Production of power tiller rapidly increased during ..... year
a. 1920 to 1930 c) 1950 to 1965
b. 1935 to 1945 d) 1960 to 1975

355. It is a……. of soil to provide favorable condition for crop production.
a. Chemical manipulation. c) Mechanical & chemical manipulation
b. Mechanical manipulation d) none of the above

356. Objectives of Tillage

a. To destroy the prevent weeds. c) both A & B
b. To reduce soil and erosion d) increase the output of work per unit time

357. Types of Tillage
a. Minimum Tillage. c) secondary Tillage
b. Primary Tillage. d) All of the above

358. Components of mold board plough
a. Share. c) forg
b. Mould board. d) All of the above

359. Find the odd mean out
a. Share. c) body
b. Shoe. d) Landside

360. Functions of mold board plough
a. Cutting the furrow slice. c) body to yoke
b. Increase the depth of operation. d) length of the beam

361. The following types of blades are used with the rotor in rotary tiller
a. 'L' type blade c) both A & B
b. Twisted blade d) chisel plough

362. Standerd disc plough consist of steel dics of… to……. CM diameter.
a. 60,90 c) 60,80
b. 70,100. d) 70,90

363. It is employed on mulchers designed mainly for secondary Tillage
a. 'L' type blade c) straight blade
b. Twisted blade d) dics blade

364. The tilt angle varies form…° to….. °. For a good plough
a. 20°,30°. c) 15°,30°
b. 10°,30°. d) 15°,25°

365. Normal ploughing up to a depth of about ____ CM.
i. 20 c) 15
ii. 14 d) 24

366. Singal acting disk harrow throw the soil in ____ direction.
i. Opposite. c) left
ii. Backward d) right

367. ___ plate used for cutting a inverting the soil.
i. Cooper. c) iron
ii. Aluminium. d) steel

368. Each set of discs that are mounted on a common shaft is called as ___
i. Spool. c) Bearing
ii. Gang. d) Gang control

369. A set of discs are mounted on the _____
i. Gang bolt c) Both a) and b)
ii. Arbor bolt. d) Non of the above

370. The spacing between the discs in the gang bolt ranges ___ cm for lighy duty and ___ cm heavy -duty harrows
i. 15-25 and 25-30 c) 40-45 and 45-50
ii. 20-30 and 30-40. d) 15-25 and 32-36

371. A lever, which operates the gang mechanism of the disk harrow, is called the ____
i. Spanners lever. c) spacer lever
ii. Gang control lever. d) Bearing lever

372. ___ prevents disc from clogging.
i. Scraper. c) slide disc
ii. Spikal tooth. d) spring tooth

373. ___ harrow having curved knives.
i. Spring tooth harrow. c) Acme harrow
ii. Spikal tooth d) Spike tooth harrow

374. Blade harrow is also named as ___

i. Guntaka. c) Ridger
ii. Bakhar. d) Bund

375. Which of the following is not the type of Tillage?
a) Minimum Tillage c) Machine Tillage
b) Mulch Tillage d) Strip Tillage

376. Select the types of Disc Plough?
a) Standard disc Plough. c) Both a And b
b) Vertical disc Plough. d) None of above

377. _____is a Tillage system in which only isolated bands of soil are tilled?
a) Strip Tillage. c) Mulch Tillage
b) Rotary Tillage. d) Combined Tillage

378. ____is a combination of rigid or resistant Bodies having definite motion and capable of performing useful work
a) Tool. c) Implement
b) Machine. d) None of the above

379. Select the function of Moldboard plough.
a) Lifting the soil. c) Pulverizing the soil
b) Cutting the furrow slice d) All of the above

380. _____is not component of M.B. Plough
a) Share. c) Land side
b) Shoe. d) Tail piece

381. Moldboard consists of following types :
a) General purpose. c) Sod or breaker
b) Stubble. d) All of the above

382. Standard disc Plough consists of steel disc of _____ diameter
a) 20 to 40 cm. c) 60 to 90 cm
b) 30 to 60 cm. d) 70 to 100 cm

383. Following is not type of blades ?
a) 'L' type blade. c) Twisted blade
b) 'M' type blade. d) Straight blade

384. ____ it is a device to remove soil that tends to stick to the working surface of a disc
a) Disc c) Scraper
b) Concavity. d) Til

385. Selection of tractor depends upon……
a) Land holding c) Cropping pattern
b) Repairing facilities d) All of the above

386. A power tiller consist of the following main components
a) Engine c) Transmission gear
b) Clutch d) All of the above

387. Tractor is not a self-propelled power unit.
a) True
b) False

388. Power tiller is also called.....
a) Hand tractor c) Walking tractor
b) Both a and b d) None of the above

389. The concept of power tiller came in the world in the year……
a) 1920 c) 1954
b) 1985 d) 1990

390..... is the first country to use power tiller on large scale
a) Korea c) India
b) America d) Japan

391. Power tiller was first introduced in India in the year……
a) 1940 c) 1988
b) 1963 d) 1990

392. Row crop tractor used for.....

a) Crop c) Major farm operations
b) Definite jobs d) None of the above

393. Following is the type of tractor
a) General purpose tractor c) Row crop tractor
b) Simple operation tractor d) both a and b

394. Crawler tractor is also called as.....
a) Hand tractor c) Walking type tractor
b) Track type tractor d) Row crop tractor

395. India is unique in its characteristics,where over ..... different crops are cultivated in region
a) 400. c) 350
b)250 d) 300

396. In 2000-2001 the quantum of power has rose to .....
a)45.29 million kW c) 170 million kW
b) 85 million kW. d) 145 million kW

397. The power intensity of Indian farms increase from ..... to ..... kW/hectare on basis of net-cropped area.
a)0.2 to 1.30. c) 1.0 to 2.5
b) 0.5 to 1.60. d) 1.3 to 2.8

398. In 2000-2001 the use of mechanical & electrical increased from
a)20% to 45%. c) 45% to 75%
b) 45 to below 83% d)43% to over 83 %

399. India receives .....amount of solar energy each year
a. 5×1010 kWh/year. c) 5×1015 kWh/year
b. 4×1015 kWh/year. d) 5×1010 kWh/year

400. From the above options which can used to convert by bio chemical processes to alcohol and esters
a. Cellulose waste and non- edible oil c)fossil fuels
b. Animal waste d) none of the above

401. Find odd man out
a)Fanta c) mathani
b) chakiya. d) tillers

402. The extent of area under the command of draught animals is about .....
a. 45%. c) 57%
b. 75%. d) 64%

403. Punjab has farm power ok intensity of .....
a. 200 W/ hector. c) 150 kW/hector
b. 3.5 kW/hector d) 3.5 W/hector

404. In 1951,the number of tractors in India was...
a. 8635. c) 8563
b. 86350. d) 85630

405. Harrow is a ..... tillage implement that cuts the soil to shallow depth for smoothening and pulverizing the soil as well as to cut weeds and to mix the materials with the soil.
a. Primary. c. Tertiary
b. Secondary. d. None

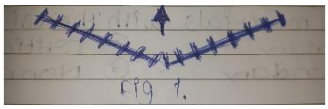
406. Tandem disc Harrow is a disc Harrow comprising of four gangs in which each gang can be angle in……direction.
a. Angular c. Parallel
b. Opposite. d. Perpendicular

407. Normal ploughing is a ploughing up to depth of.....cm.
a. 10. c.15
b. 20. d.25

408. …….. is a method of ploughing in which the soil broken and turn along the contours.
a. Normal ploughing c. Contour ploughing
b. Sub soil plough. d. Disc plough

409. …….. is a harrow which perform harrow operation by means of set or a number of sets of rotating slat each set being mounted on common shaft.
a. Spike tooth harrow c. Triangular harrow
b. Acme harrow. d. Disc harrow

410. Identify the following figure-



a. Offset disc harrow. c. Single action disc harrow
b. Double action disc harrow d. Tandem disc harrow

411. Each set of disk that are mounted on the common shaft is called the……
a. Gang control lever c. Spool
b. Gang bolt. d. Gang

412. The flanked tube mounted on the gang bold between every two disc to prevent the lateral movement of the disc on the shaft is called.....
a. Bearing. c. Gang bolt
b. Gang. d. Spool

413. ..... is essential to counter act the and thrust of gang due to soil thrust.
a. Gang c. Spacer
b. Bearing. d. Gang bolt

414. ..... is a circular concave revolving steel plate using for cutting and inverting the soil.
a. Gang bolt. c. Disc
b. Bearing d. None

415._____ is the process of random scattering of seed on the surface of sead beds.
a) Broadcasting. b) Dibbling
c) Drilling. d) Transplanting

416._____ is the process of placing seeds in holes made in seedbed and covering them.
a) Broadcasting. b) Dibbling
c) Drilling. d) Transplanting

417._____ consists of dropping the seeds in furrow lines in a continuous flow and covering them.
a) Broadcasting. B) Dibbling
c) Drilling. D) Transplanting

418._____ is very common method used in villages.
a) Seed dropping behind the plough
b) Transplanting
c) Hill dropping
d) Check row planting

419._____ consists of preparing seedlings in nursery and then planting these seedlings in the prepared field.
a) Seed dropping behind the plough
b) Transplanting
c) Hill dropping
d) Check row planting

420. In _____ method, seeds are dropped at fixed spacing and not in a continuous stream.
a) Seed dropping behind the plough
b) Transplanting
c) Hill dropping
d) Check row planting

421. In _____ method, row to row and plant to plant distance is uniform.
a) Seed dropping behind the plough
b) Transplanting
c) Hill dropping
d) Check row planting

422._____ is a machine for placing the seeds in a continuous flow.

a) Seed drill
b) Transplanting
c) Hill dropping
d) Check row planting

423._____ is a device to refill a furrow after seed has been placed in it.

a) Seed box
b) Covering device
c) Transport wheel
d) Seed drill

424. The mechanism of a seed drill or fertilizer distributor which delivers seeds or fertilizers from the hopper at selected rates is called _____.

a) Seed drill
b) Seed box
c) Seed metering mechanism
d) Covering device

425. A metering mechanism that does not required cut-off device is:
A. Inclined plate B. Vertical plate
C. Horizontal plate D. All are correct

426. The metering mechanism used in potato planter is:
A. Fluted roller B. Brush feed type
C. Picker wheel type D. Cell feed type

427. In cup food metering device, the seed rate is controlled by:
A. Shaft rotation B. Speed of machine
C. Size of cups D. All are correct

428. The furrow opener used in black cotton soil is:
A. Disc type B. Shoe type
C. Reversible shovel type D. Hoe type

429. The shovel of seed drill is made up of:
A. Cast iron B. Mild steel
C. White metal D. Carbon steel

430. Blower is part of:
A. Planter. B. Zero till drill
C. Pneumatic seed drill D. Till plant machine

431. Pneumatic seed drills are suitable for sowing:
A. Small seeds B. Bolder seeds
C. Both (a) & (b) D. None of these

432. The fluted roller of seed drill is made of:
A. Aluminum B. Cast iron
C. Plastic D. All are correct

433. For sowing of wheat seed, a suitable metering mechanism is:
A. Cup feed B. Cell feed
C. Fluted roller D. Brush feed

434. A zero till seed-cum-fertilizer drill is designed for sowing:
A. Paddy B. Wheat
C. Potato. D. Vegetable

435. Bucket type sprayer consist of:
A. Single and double acting pump B. Centrifugal pump
C. Plunger type pump D. All are correct

436. The pump is mostly made of:
A. Aluminium B. Copper
C. Brass D. Plastic

437. A tank capacity of knapsack sprayer is about:
A. 5-10 litres B. 8-10 litres
C. 9-22.5 litres D. 10-25.5 litres

438. Area that one man can spray in a day is:
A. 0.1 ha B. 0.2 ha
C. 0.3 ha. D. 9.4 ha
439. Amount of liquid that a man can spray in a day is:
A. 60 litres liquid B. 70 litres liquid
C. 80 litres liquid D. 90 litres liquid
440. Tank capacity of compression sprayer is:
A. 10 litresB. 12 litres
C. 14 litresD. 20 litres
441. Hand atomizer is used for spraying in:
A. Nursery B. Orchard
C. Field crop D. None of these
442. The pump is used in power-operated sprayer is:
A. Plunger type B. Diaphragm type
C. Gear type D. Piston type
443. The pump used in airplane sprayers:
A. Dentrifugal and gear pump B. Gear and Diaphragm pump
C. Diaphragm and centrifugal pump D. Plunger and centrifugal pump
444. In power-operated sprayer, the pump works at a pressure of:
A. 2-5 Kg/cm2 B. 3-8.5 Kg/cm2
C. 4-12 Kg/cm2. D. 5-15 Kg/cm2

445. Bucket type sprayer consist of:
i) Single and double acting pump c) Plunger type pump
j) Centrifugal pump d) All are correct

446. The pump is mostly made of:
e) Aluminium c) Brass
f) Copper d) Plastic

447. A tank capacity of knapsack sprayer is about:
a. 5-10 litres c) 9-22.5 litres
b. 8-10 litres d) 10-25.5 litres

448. Area that one man can spray in a day is:
e) 0.1 ha c) 0.3 ha
f) 0.2 ha d) 9.4 ha

449. Amount of liquid that a man can spray in a day is
e) 60 litres liquid c) 80 litres liquid
f) 70 litres liquid d) 90 litres liquid

450. Tank capacity of compression sprayer is:
e) 10 litres c) 12 litres
f) 14 litres d) 20 litres

451. Hand atomizer is used for spraying in:
e) Nursery c) Field crop
f) Orchard d) None of these

452. The pump is used in power-operated sprayer is:
e) Plunger type c) Gear type
f) Diaphragm type d) Piston type

453. The pump used in airplane sprayers:
e) Dentrifugal and gear pump c) Diaphragm and centrifugal pump
f) Gear and Diaphragm pump d) Plunger and centrifugal pump

454. In power-operated sprayer, the pump works at a pressure of:
a) 2-5 Kg/cm2 c) 4-12 Kg/cm2
b) 3-8.5 Kg/cm2 d) 5-15 Kg/cm2

455. ….. is an important machine used for farm machinisation.
a) Tractor c) truck.
b) Pump. d) Motor

456…. Increase the output of work per unit time

c) Automatic tool. c) manual tool
d) Implement tool. d) matching tool

457. More than …. Farmers depend upon animal drawn implements.
a. 80%. c) 40%
b. 90%. d) 10%.

458. The productions of indigenous tractors started in india ….
a. 1961. c) 1956
b. 1987. d) 1990

459. The penetration of powered machines in various farm activities is assede in the range of .. to ..
a. 40,30. c) 20,40
b. 50,10. d) 40,45

460. Increase in human power in agriculture is quite …
a. Slow. c) medium
b. Fast. d) very slow

461. The extent area under the command of draught animals is about ….
a. 57%. c) 67%
b. 78%. d) 89%

462. Unit power is available for crop production is about ….hp/ha
a. .54. c) .78
b. .89. d) .9

463. Agriculture contribute only .. to the country GVA.
a. 17.4%. c) 18.9%
b. 13.9%. d) 89.4%

464. World Bank estimate half of indian population would be in …..
a. 2020. c) 2015
b. 2060. d)2050

465. Full form of NCCD is
A. National center for cold chain development C. National chain college department
B. National center of coal department D. None of the above

466. To recommend standards and protocols for cold chain infrastructure is the main objective of elements of cold chain?
A. True B. false

467. Which is correct order of cold chain
A. Farming, production, packing sales, warehousing, shopping mall, consumer.
B. Farming, packing sales, consumer, shopping mall, production, warehouses.
C. Farming, warehousing, shopping mall, consumer, production, packing sales.
D. All of the above.

468. Full form of NCAP is
A. National cooling action performance C. National coal academy
B. National cooling action plan D. None of the above.

469. In India cold chain is applied successfully in _____
A. Dairy products C. Various meats products
B. Frozen goods D. All of the above

470. _____ percent of food grain use modern storage facilities in India
A. 55% C. 10%
B. 25% D. 90%

471. The atmosphere operational controlled stores in 2005 are located at
A. Mumbai, Delhi, Bangalore C. Mumbai Chennai
B. Mumbai, Pune D. Kolkata

472. VMI stands for
A. Vendor materials inventory C. Variable material inventory
B. Vendors manage inventory D. Valuable material inventory

473. Product layout is preferably used for

A. Repetitive processes
B. Intermittent processing
C. Both a and b
D. Neither a nor b

474. Inspection, scrap and repair are example of

A. Internal cost
B. External cost
C. Cost of the dissatisfaction
D. Societal cost

478. The production of irrigation pumps and diesel engines started during…….

e) 1950s
f) 1930s
g) 1940s
h) 2000s

479. The production of tractors and power tillers started in …….

a. 1950
b. 1940
c. 1960
d. 2001

480. The following is not a farm machinery

a. Combine harvester
b. Power tiller
c. Fresher
d. Dumper trucks

481. The leading manufacturer of farm equipment or agriculture equipment it in India are

a. Mahindra and Mahindra
b. Sonalika
c. Force
d. All of the abov

482. It is quite true that the farmers with low earnings per capita because of low per hectare they get from holdings are.....

a) Indian farmers
b) American farmers
c) Australian farmers
d) all of the above

483. The step towards development of an appropriate agricultural technique in india is working towards the motto of saving.....

a) labour
b) cost
c) surplus labour
d) all of the above

484. The machinery which enables the farmers to raise a second crop or multi crop attractive and way of life. By becoming a commercial subsistence is….

a) efficient machinery
b) agriculture machinery
c) affective machinery
d) all of the above

485. At present the farm power availability as per hectare is….

a) 1.84KW/ HA
b)2.04KW/ HA
c)1.85KW/HA
d)2.06KW/ HA

486. Advantages of mechanization is.....

a) substitute for labour.
b) attract or retain farm staff
c) amenity reasons
d) all of the above

487. A general-purpose or row-crop tractor is _____ machines

a) Single use
b) Universal
c) Both A & B
d) None of Above

488. For which reason post harvesting disciplinary Science and Technology for

a. Protection
b. Conservation
c. Processing
d. All of the above

489. Factors of post-harvest loss reduction technology encompasses with

a. Transportation and storage with Morden infra-structure

b. Processing and protection
c. Packaging and distribution
d. Distribution and marketing
490. Purpose for developing post harvesting technology is to improve inter-disciplinary and multi-dimensional approach
a. True
b. False
491. How many peoples are depends on agricultural of our villages population.
a. 80% c. 70%
b. 83% d. 65%
492. It is possible to evolve appropriate technologies which can be establish agricultural based ..... industry.
a. Small scale c. Urban
b. Rural d. Medium scale
493. Adoption of these techniques can make
a. High productivity b. Less wastage
c. Large quantity d. Large quantities
494. The process used for initial cultivation to loosen or turn the soil in preparation for sowing seed and planting is called as_____.
a) Kneading. b) Cropping.
c) Ploughing. d) None of the above.
495._____ is a secondary tillage that cuts the soil to a shallow depth for smoothening and pulverizing the soil as well as to cut the weeds and to mix the materials with the soil.
b) Normal ploughing. b) Harrow.
c) Contour ploughing d) None of the above.
496._____ harrow performs the harrowing operations by means of a set, or a number of sets of rotating flat disc, each set being mounted on a common shaft.
c) Disc harrow. b) Blade Harrow.
c) Acme harrow. d) Guntaka.
497. The two types of Disc Harrow are:
1) Single action disc harrow.
2) Double action disc harrow.
d) True. b) False.
498. The two types of Double action disc harrow are:
e) Tandem & Off-set. b) tandem & Master.
c) None of the above. d) both A & B.
499. _____ harrow is used to break the clod, stir the soil, uproot the weeds, level the ground, break the soil and cover the seeds.
a) Spring tooth harrow. b) Acme harrow.
c) Spike tooth harrow. d) None of the above.
500. _____ harrow is suitable to work in hard and stony soils consists of tough flexible teeth.
a) Patela. b) Spring tooth harrow.
c) Triangular harrow. d) None of the above.
501. _____ consists of one or more blades attached to the frame or beam which is used for shallow working of the soil with the minimum soil inversion.
a) Guntaka. b) Patella.
c) Ridger. d) Puddler.
502. The amplitude of vibration in a Reciprocating power harrow is 200mm.
a) True. b) False.
503. The frequency of operation in a reciprocating power harrow is_____.
a) 250 cycles per minute. b) 400 cycles per minute.
c) 175 cycles per minute. d) None of the above
504. The process of loosening and turning the soil is called
A. Broadcasting
B. Irrigation

C. Ploughing
D. Levelling
505. The organic substance obtained from dead plants and animal wastes is
A. Manure
B. Fertilizer
C. Irrigation
D. Agriculture
506. The process of separating grain from chaff is called
A. Threshing
B. Weeding
C. Sowing
D. Winnowing
507. The conversion of nitrogen into nitrates is known as
A. Nitrogen fixation
B. Ammonification
C. Nitrate Assimilation
D. Nitrogen cycle
508. Raising of fish in inland waters and coastal waters are called
A. Fishery
B. Pisci culture
C. fish culture
D. harvesting
509. Most abundant water pollutant is
A. Detergents
B. Pesticide
C. Industrial wastes
D. Ammonia
510. Air pollution effects are usually found on
A. Flowers
B. Leaves
C. Stems
D. Roots
511. Green house effect is related to
A. Increased growth of green algae
B. Global warming
C. Cultivation of vegetables in housed
D. None of these
512. Examples of Corm include
A. Gloriosa
B. Canna
C. Lallang
D. Ginger
513. Animals like horse, donkey that carries load are called
A. Drought species
B. Load carrying Animals
C. Dairy Animals
D. Draught Animal
514._____ provided with the knife guard, on which the knife moves.
a) Wearing plate c) grass board
b) Ledger plate d) pitman
515. Knife clips are placed with wearing plates spaced _____ apart .
a) 10-15cm c) 10-20cm
b) 5-10cm d) 20-30 cm
516._____ portion of knife is connected to pitman.
a) Knife section c) Knife back

b) Knife head d) Shoe

517._____is part defines a Pitman

a) Crank c) Slider

b) Connecting rod d) Piston

518._____is an Important cause for breaking the knife.

a) Power Transmission

b) Over load

c) Non- Alignment

d) None of the above

519. The cutter bar is set at ____ angle to the direction of the motion.

a) 95 c) 88

b) 78 d) 27

520._____ is not a part of the mechanical Thresher

a) Feeding device

b) Threshing cylinder

c) Concave (punched sheets / welded square bars)

d) Water Pump

521. _____ is not an operational Factor.

a) Cylinder speed

b) Feed rate

c) Depth of cut

d) Machine adjustment

522. Post harvest technology is inter-disciplinary_____ and _____ applied to agricultural produce.

a) Science and technology c) Science and technique

b) Science and arts d) Science and machinery

523. Processing of primary processed raw material into product which is suitable for food uses or consumption after cooking, roasting, frying etc is called as:

a) Primary processing c) Combined processing

b) Secondary processing d) Tertiary processing

524. The full form of NCAP is:

c) National condensing action plan c) National cooling action plan

d) National capital action plan d) National compression action plan

525. NCCD stands for:

e) National centre for cold chain development

f) National centre for condensing chain development

g) National centre for compressing chain development

h) National centre for capital chain development

526. The full form of RTC is

a)Real estate tax commission. c) Road travel commission

b)Rising tax charge d) Ready to cook

527. India is the _____ largest producer of fruits and vegetables.

i) Second c) fourth

j) Third d) fifth

528. India is the largest producer and exporter of

k) Coffee c) black tea

l) Green tea d) Gur

529. India ranks ____ in the world cattle production.

m) Third c) fourth

n) First d) second

530. India ranks ____ in the world in both poultry and egg processing units.

o) First
p) Third
c) fourth
d) fifth

531. The total milk production in India is

q) 100 million tonnes
r) 50 million tonnes
c) 75 million tonnes
d) 25 million tonnes