



CHEMISTRY

BOOKS - LAKHMIR SINGH & MANJIT KAUR

COMBUSTION AND FLAME

Exercises

1. Define ignition temperature of a fuel.



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2. Which of the two has a lower ignition temperature : petrol or kerosene ?



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3. Name the most common fire extinguisher.



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4. Which is the best fire extinguisher for fires involving electrical and inflammable materials like petrol ?



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5. Name one substance which undergoes spontaneous combustion (or burns in air at room temperature).



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6. Name the unit in which the calorific value of a fuel is expressed.



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7. Which of the following fuels has the lowest calorific value ?

Diesel, Methane, CNG, Coal, Petrol

A. Diesel

B. CNG

C. Methane

D. Coal

Answer: D



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8. Which of the following fuels has the highest calorific value ?

Kerosene, Wood, Hydrogen, Cow-dung cakes,

LPG



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9. Name the term which is used to express the efficiency of a fuel.



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10. Name one solid, one liquid and one gas which burn by producing a flame.



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11. Which of the following does not produce a flame on burning ?

Camphor, Charcoal, Kerosene

A. Camphor

B. Charcoal

C. Kerosene

D. Both A and C

Answer: B



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12. Name one fuel which burns without producing a flame.



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13. How many zones are there in a flame ?



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14. Which zone of a candle flame is the hottest ?



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15. In a candle flame, what is the colour of :
innermost zone ?



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16. In a candle flame, what is the colour of :
middle zone ?



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17. In a candle flame, what is the colour of :
outer zone ?



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18. Name any harmful product released by the
burning of fuels.



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19. Name the very poisonous gas produced by the incomplete combustion of fuels.



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20. Name the fuel which is gradually replacing petrol and diesel in automobiles.



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21. Name two substances having low ignition temperatures and two having high ignition temperatures.



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22. Fill in the following blanks with suitable words :

A fuel must be heated to its before it starts burning.



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23. Fill in the following blanks with suitable words :

The most common supporter of combustion around us is



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24. Fill in the following blanks with suitable words :

Fire produced by burning oil cannot be controlled by



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25. Fill in the following blanks with suitable words :

A liquis fuel used in homes is



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26. Fill in the following blank with a suitable word :

The amount of heat produced by burning a

unit mass of a fuel completely is known as its value.



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27. Fill in the following blanks with suitable words :

The substances which vaporise during burning, give



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28. Fill in the following blanks with suitable words :

Burning of wood and coal causes of air



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29. What are fuels ?



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30. Name any two common fuels.



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31. State any four characteristics of an ideal fuel (or good fuel).



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32. Define the calorific value of a fuel.



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33. "The calorific value of LPG is 55000 kJ/kg".

What does it mean ?



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34. Can you burn a piece of wood by bringing a lighted matchstick near it ? Explain.



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35. Why do you have to use paper or kerosene oil to start fire in wood or coal ?



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36. What is meant by rapid combustion ?



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37. Give one example of rapid combustion.



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38. What is meant by explosive combustion (or explosion) ?



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39. Give one example of explosive combustion (or explosion)



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40. How will you show that air is necessary for combustion ?



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41. Can the process of rusting be called combustion ? Give reason for your answer.



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42. Why are fires produced by burning oil not extinguished by pouring water ?



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43. Explain why, fire caused by electricity should not be extinguished by pouring water.



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44. How is the fire produced by burning oil (or petrol) extinguished ?



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45. How is the fire caused by electricity extinguished ?



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46. A durm full of kerosene catches fire. What is the simplest way to put off this fire ?



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47. What is the first things you should do if a fire breaks out in your home or neighbourhood ?



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48. What does a Fire Brigade do when it arrives at a place where a building is on fire ?



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49. Describe one method of putting out a fire caused by burning wood or paper.



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50. Explain why , we are advised not to sleep in a room having closed door and windows, with a coal fire burning inside.



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51. What is a flame ?



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52. What type of substances, on burning, give a flame ?



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53. What is the difference between the burning of a candle and the burning of a fuel like coal ?



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54. How does pouring water extinguish a fire ?



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55. Explain how, carbon dioxide is able to control fires.



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56. If you see a person whose clothes are on fire, how will you extinguish the fire ? Give

reason for your answer.



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57. Give two examples of solid fuels.



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58. Give two examples of liquid fuels.



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59. Give two examples of gaseous fuels.



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60. Name the various zones of a candle flame.

Which zone (or part) of a candle flame is the least hot (or coldest)?



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61. Why does a goldsmith blow air into the kerosene lamp flame with a blow-pipe ?



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62. In which zone of a candle flame : partial combustion of fuel takes place,



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63. In which zone of a candle flame : complete combustion of fuel takes place ?



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64. Explain how , the use of CNG in automobiles has reduced pollution in cities.



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65. What are the disadvantages of burning wood as fuel ?



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66. Give reasons for the following : LPG is a better domestic fuel than wood.



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67. Explain why , when a burning candle is covered with an inverted gas jar , the candle gets extinguished after some time.



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68. It is difficult to burn a heap of green leaves but dry leaves catch fire easily . Explain.



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69. What are the combustible substances ?



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70. Name three combustible substances .



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71. What are non-combustion substances ?



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72. Name three non-combustion substances.



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73. What is meant by 'combustion' ? Explain with an example.



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74. What are the conditions necessary for combustion to take place ?



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75. Make a labelled diagram of a candle flame.



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76. What makes the middle zone of a candle flame luminous (or light-giving) ?



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77. What is global warming?



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78. Name the gas whose increasing percentage in air is leading to global warming.



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79. State a harmful effect which can be caused by global warming.



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80. Explain how, burning of fuels such as coal, petrol and diesel leads to acid rain. How is acid rain harmful ?



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81. Which of the following substances has the lowest ignition temperature ?

A. kerosene

B. spirit

C. diesel

D. mustard oil

Answer:



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82. One of the following is not a combustible substance. This one is :

A. alcohol

B. hydrogen

C. asbestos

D. chaff

Answer: A::B



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83. Which of the following is not used in making matchsticks these days ?

- A. potassium chlorate
- B. white phosphorus
- C. antimony trichloride
- D. red phosphorus

Answer:



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84. Which of the following undergoes spontaneous combustion ?

- A. yellow sulphur
- B. red phosphorus
- C. white phosphorus
- D. brown sulphur

Answer:



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85. Which of the following statement is not correct about carbon dioxide acting as a fire extinguisher for electrical fires ?

A. it is heavier than air

B. it is lighter than air

C. it is not combustible

D. it does not support combustion

Answer: A



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86. Fires in underground coal mines usually occur due to the :

- A. explosive combustion
- B. deliberate combustion
- C. spontaneous combustion
- D. rapid combustion

Answer: C



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87. The calorific value of a fuel is 40000 kJ/kg.

This fuel is most likely to be :

A. biogas

B. methane

C. hydrogen gas

D. liquefied petroleum gas

Answer: A::B



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88. Which of the following has the fuels has the highest calorific value ?

A. natural gas

B. liquefied petroleum gas

C. coal gas

D. hydrogen gas

Answer: B



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89. On a cold winter night, the persons sleeping in a room with closed door and windows with a coal fire burning inside may die due to the excessive accumulation of :

A. nitrogen monoxide

B. nitrogen dioxide

C. carbon dioxide

D. carbon mono oxide

Answer: A::B::C::D



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90. Which of the following burns without producing a flame ?

A. camphor

B. coke

C. cooking gas

D. kerosene

Answer: C



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91. Which of the following fuels has the lowest calorific value ?

A. kerosene

B. CNG

C. biogas

D. LPG

Answer: A::B



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92. Which of the following is the main cause of global warming ?

A. nitrogen dioxide

B. sulphur dioxide

C. carbon dioxide

D. ozone

Answer: A::B::C::D



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93. Which of the following gas does not contribute to the formation of acid rain ?

A. nitrogen monoxide

B. carbon monoxide

C. sulphur dioxide

D. nitrogen dioxide

Answer: B



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94. Which of the following is the most environment friendly fuel to be used in automobiles?

A. petrol

B. diesel

C. natural gas

D. petroleum gas

Answer: A



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95. Which of the following does not involve a combustion reaction ?

A. production of heat and light from kerosene in a lantern

B. production of heat and light from hydrogen in a rocket

C. production of heat and light from hydrogen in the sun

D. production of heat and light from wood
in a bonfire

Answer: C



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96. A heap of green leaves is lying in one corner of a park. The green leaves in the heap burn with difficulty because :

A. they contain a tough material called cellulose

B. they contain a lot of water

C. they contain a green pigment chlorophyll

D. they do not get sufficient oxygen for burning

Answer: A::C



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97. If the clothes of a person working in the kitchen catch fire, then to extinguish the fire :

A. sand should be thrown over the burning clothes

B. water should be thrown over the burning clothes

C. polyester blanket should be used to cover the burning clothes

D. woollen blanket should be used to cover the burning clothes

Answer: A::B::C::D



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98. The outermost zone of a candle flame is the :
the :

- A. least hot part
- B. coldest part
- C. hottest part
- D. moderately hot part

Answer: C



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99. The flame of a kerosene oil lamp (or lantern) has :

A. single zone

B. two zones

C. three zones

D. four zones

Answer:



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100. A lot of dry powder of one of the following chemicals can be released over a fire to extinguish it . This chemical is :

A. plaster of paris

B. baking soda

C. washing soda

D. bitumen

Answer: A::B::D



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101. An electric spark is struck between two electrodes placed near each other in a closed tank full of petrol. Will the petrol catch fire ? Explain your answer.



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102. Give reason for the following :

paper by itself catches fire easily whereas a piece of paper wrapped around an aluminium pipe does not.



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103. Abida and Ramesh want to heat water taken in separate beakers . Abida kept the beaker near the wick in the yellow part of the candle flame. Ramesh kept the beaker in the

outermost part of the flame . Whose water will get heated in a shorter time ? Why ?



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104. When a lot of dry powder of a substance X is released over a fire, the fire gets extinguished.

Name the substance X.



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105. When a lot of dry powder of a substance X is released over a fire, the fire gets extinguished.

How does this substance extinguish the fire ?



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106. When a lot of dry powder of a substance X is released over a fire, the fire gets extinguished.

Name another substance which behaves like X.





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107. What type of combustion is represented by :

burning of white phosphorus in air at room temperature ?



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108. What type of combustion is represented by :

burning of LPG in a gas stove ?



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109. What type of combustion is represented by :
ignition of a cracker ?



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110. What type of combustion is represented by :
burning of coal dust in a coal mine ?





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