



# CHEMISTRY

**BOOKS - VGS PUBLICATION-BRILLIANT**

**COMBUSTION , FUELS AND FLAME**

## Exercise

1. Give four examples of combustible materials



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2. Why should not we store spirit or petrol near our living place?



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3. The oil fires should not be sprayed with water. Why?



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4. Water is not used to control fires involving electrical equipment. Why?



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5. What precautions are to be taken while pouring water on fire?



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6. Give an example of a good fuel. How do you choose that fuel? Explain.



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7. It is difficult to burn a heap of green leaves but not a heap of dry leaves. Explain Why?



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**8.** Where do you find spontaneous combustion and rapid combustion in your daily life?



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**9.** Why do we keep phosphorus in water?



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**10.** How do you feel about "Fuels have become a part of human life"?



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**11.** Is there any other procedure to prove that oxygen is needed for burning?



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**12.** The gas needed for combustion among the following is

A. Argon

B. Oxygen

C. Carbon dioxide

D. Hydrogen

**Answer:**



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**13.** The lowest temperature at which a substance catches fire is called its

A. Ignition temperature

B. Maximum temperature

C. Room temperature

D. Normal temperature

**Answer:**



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**14.** The unit of calorific value

A. Newtons / grams

B. Newtons / Kg

C. Kilo Joules / kg



D. Kilo Joules / gram

**Answer:**



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**15.** Spirit and petroleum turns into gas at

- A. Room temperature
- B. Ignition temperature
- C. Maximum temperature
- D. Normal temperature

**Answer:**



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**16.** The type of combustion in which material suddenly burns into flames without the application of any external agent is called

- A. 1. Rapid combustion
- B. 2. Slow combustion
- C. 3. Spontaneous combustion
- D. 4. Explosion

**Answer:**



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**17.** Why does candle give flame when it is burnt but why does coal burn without emitting a flame?



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**18.** Do all fuels produce same amount of heat when they are burnt?



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**19.** What do we need to burn a material?



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**20.** Have you observed material used to make school bell or bells in temple?



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**21.** Name the three meninges. In which group of animals do you find all of them ?



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**22.** What do we need to burn a material?



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**23.** Can we burn a material in the absence of air?



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24. Why does a scented stick with burning stub does not catch fire when it is kept aside in air after putting its flame off?



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25. Why does a scented stick with burning stub does not catch fire when it is kept aside in air after putting its flame off?





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**26.** A slow fire bursts into a flame when air is blown on it, but a candle burning with flame goes off when air is blown on it. Why?



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**27.** If a large quantity of dry grass is set on fire in forests then it is very difficult to put off the fire. Why?



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**28.** When an object catches fire, the fire is put off by covering with sand or a blanket? Why?



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**29.** What makes match sticks to catch fire?



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**30.** What is calorific value? Write its units





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**31.** How can we put off the fire if it breaks out?



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**32.** Why the fire brigade start the work by putting off the electric mains?



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**33.** How does water help in eliminating the factors, which support the combustion?



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**34.** Why do some materials burn and some do not?



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**35.** Why do some materials which do not burn at normal temperature burn at higher temperatures?



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**36.** If you lift the glass tumbler (which is placed over a burning candle) to 1 cm height, what happens? Why?



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37. How do you say that the gas released in the experiment is oxygen?



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38. Can we replace potassium permanganate ( $KMnO_4$ ) with any other substance to release oxygen? option 1. hydrochloric acid 2. pottasium permanganate 3. salt 4. vinegar



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**39.** Is there any other procedure to prove that oxygen is needed for burning?



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**40.** Why do we keep phosphorus in water?



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**41.** Why do kerosene stoves and bunsen burners have small holes in them?



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**42.** It is hard to ignite match stick in rainy days. Why?



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**43.** A wax candle burns with a yellow flame. The domestic gas burns when lighted with a blue flame. Why?



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**44.** Name the products formed when a candle burns in the air.



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**45.** What do you mean by combustion?



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**46.** What are combustible materials?



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**47.** What are non-combustible materials?



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**48.** What is ignition temperature?



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**49.** What are inflammable substance? Give examples.







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**50.** How many types of combustion is there ?

What are they?



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**51.** What is spontaneous combustion?



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**52.** What is rapid combustion?



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**53.** What is explosion?



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**54.** What are the different zones present in a candle and what are the colours of those zones?



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**55.** Which zone of a flame does a goldsmith use for melting gold and silver metal why?



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**56.** In an experiment 4.5kg of a fuel was completely burnt. The heat produced was measured to be 1,80,000 KJ. Calculate the calorific value of the fuel.





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57. Explain how  $CO_2$  is able to control fires.



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58. Give reasons.

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



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**59.** Can the process of rusting be called combustion ? Discuss.



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**60.** How do you appreciate use of fossil fuels in daily life?



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**61.** Name the products formed when a candle burns in the air.



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**62.** Give four examples of non-combustible materials.



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**63.** Why is water not suitable as fire extinguisher for fires involving oil and petrol?



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**64.** Which zone of a flame does a goldsmith use for melting gold and silver metal why?



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**65.** Which type of substances give flame?



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**66.** What would happen if oxygen stops to support combustion? Make a guess. And if it is the situation for what other works fuels are useful.



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**67.** Let us assume that you are on the moon. If you try to focus sunlight on a paper using



magnifying glass, does the paper catch fire? Or not Why?



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**68.** "Is combustion possible without the supply of oxygen? Discuss with your teacher/



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**69.** Water is not used to control fires involving electrical equipment. Why?



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**70.** Give reasons.

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



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**71.** Explain how  $\text{CO}_2$  is able to control fires.



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**72.** What are the three essential requirements for producing fire?



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**73.** Why "CNG" being used as a fuel for vehicles?



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**74.** Whether rusting is combustion reaction or not ? Why



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**75.** List the ways adopted by fire fighters to combat fires.



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**76.** Draw the diagram of candle flame and label all the zones.



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**77.** Explain giving reasons: In which of the following situations water will get heated in shorter time?

Srikar kept water beaker near the wick in the yellow part of a candle flame.



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**78.** Explain giving reasons: In which of the following situations water will get heated in shorter time?

Sonu kept water beaker in the outermost part of the flame.



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**79.** In a few years the fuels on earth will be exhausted. Think, what would happen to human civilization?



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**80.** Spirit burns quickly like petrol but sodium metal and white phosphorous burns without any ignition. Complete the following table and rewrite it in the table,”



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**81.** Why a wick is not used in gas burners?



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**82.** Give supporting arguments for both the statements (1) fire is useful (2) fire is harmful.



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**83.** Use of more fuels in our daily life causes air pollution and it is harmful to human being and the other life on earth. Suggest some remedies to avoid this.



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**84.** Collect information about the history of spherical mirrors in human civilization. Write a report on it.



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**85.** How do you organize your daily works with fuels to conserve bio-diversity?



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**86.** How does candle work?



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**87.** Give reasons.

LPG is a better domestic fuel than wood.



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**88.** Explain how the use of CNG in automobiles has reduced pollution in our cities.



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**89.** The example for combustible material

A. Sand

B. Clay

C. Alcohol

D. Pebbles

**Answer:**



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90. The example for non-combustible material

A. Kerosene

B. Petrol

C. Diesel

D. Iron

**Answer:**



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91. The gas needed for combustion among the following is

A. Oxygen

B. Hydrogen

C. Chlorine

D. Nitrogen

**Answer:**



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92. Fire produced by oil cannot be controlled by \_\_.

A. water

B. sodium carbonate

C. carbondioxide

D. none of these

**Answer:**



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**93.** Fuel must be heated to its \_\_\_\_ temperature before it starts burning.

A. Critical

B. Ignition

C. Melting

D. Freezing

**Answer:**



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94. The outermost zone of candle is \_\_\_ in colour.

A. blue

B. red.

C. black

D. yellow

**Answer:**



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95. \_\_\_\_ zone of candle is least hot.

A. Middle zone

B. Outermost zone

C. Dark zone

D. None of these

**Answer:**



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96. \_\_\_\_ zone of candle is least hot.

A. blue

B. black

C. red

D. yellow

**Answer:**



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97. The gas needed for combustion among the following is

A. Argon

B. Oxygen

C. Carbon dioxide

D. Hydrogen

**Answer:**



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98. The lowest temperature at which a substance catches fire is called its

- A. Ignition temperature
- B. Maximum temperature
- C. Room temperature
- D. Normal temperature

**Answer:**



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**99.** The unit of calorific value

A. Newtons/grams

B. Newtons/kg

C. Kilo joules/kg

D. Kilo joules/gram

**Answer:**



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100. Spirit and petroleum turns into gas at

- A. Room temperature
- B. Ignition temperature
- C. Maximum temperature
- D. Normal temperature

**Answer:**



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**101.** A chemical process in which a substance reacts with oxygen to give off heat is

- A. combustion
- B. partial combustion
- C. non combustion
- D. none of these

**Answer:**



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102. The material which undergoes combustion is called \_\_\_\_ material.

- A. non combustible
- B. partial combustible
- C. combustible
- D. none of these

**Answer:**



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**103.** The material which does not undergo combustion is called \_\_\_ material.

- A. combustible
- B. partial combustible
- C. non combustible
- D. none of these

**Answer:**



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104. \_\_\_\_ substances have very low ignition temperature.

- A. Inflammable
- B. Flammable
- C. Partial flammable
- D. None of these

**Answer:**



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105. Burning of gas is an example of \_\_\_ combustion.

A. spontaneous

B. rapid

C. regular

D. irregular

**Answer:**



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**106.** The hottest part of a candle flame

- A. Innermost
- B. Middle
- C. Outermost
- D. None of these

**Answer:**



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**107.** The colour of middle zone of the candle flame is

A. Blue

B. Red

C. Yellow

D. White

**Answer:**



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**108.** Spirit and petroleum turns into gas at

A. solid

B. liquid

C. gas

D. none of these

**Answer:**



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**109.** Among the following this prevents burning.

A. Oxygen

B. Carbon dioxide

C. Both

D. None of these

**Answer:**



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110. Expand LPG .....

- A. Liquid Pilot Gas
- B. Liquid Petroleum Gas
- C. Liquid Petrol Gas
- D. Liquid Potential Gas

**Answer:**



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111. Middle zone of candle is \_\_\_\_ hot.



A. highest

B. moderate

C. least

D. none of these

**Answer:**



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**112.** \_\_\_\_ zone of candle is least hot.

A. least

B. moderate

C. highest

D. none of these

**Answer:**



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**113.** Among the following which is not a combustible material ? \_\_

A. petrol

B. diesel

C. kerosene

D. sand

**Answer:**



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**114.** Among the following which is a combustible material ?

A. steel

B. iron

C. sand

D. petrol

**Answer:**



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**115.** Explosion takes place in

A. lamps

B. lanterns

C. crackers

D. none of these

**Answer:**



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**116.** The hottest part of a candle flame

A. Red

B. Blue

C. Yellow

D. White

**Answer:**



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**117.** \_\_\_\_\_ gas is released when potassium permanganate is heated.

A. Hydrogen

B. Chlorine

C. Oxygen

D. Nitrogen

**Answer:**



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**118.** \_\_\_\_\_ releases oxygen on heating.

A. Mercuric sulphate

B. Lead chloride

C. Potassium permanganate

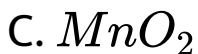
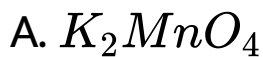
D. Sodium chloride

**Answer:**



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**119.** The formula of potassium permanganate is





**Answer:**



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**120.** \_\_\_\_\_ is written on petrol tankers.

- A. Flammable
- B. Inflammable
- C. Highly inflammable
- D. None of these

**Answer:**



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**121.** Compound used in safety matches is

- A. Potassium chloride
- B. Sodium chloride
- C. Antimony sulphide
- D. Potassium sulphide

**Answer:**



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122. \_\_\_\_\_ is used in surface of matchstick.

A. White phosphorous

B. Red phosphorous

C. Yellow phosphorous

D. None of these

**Answer:**



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**123.** Liquid fuel used in homes

A. CNG

B. LPG

C. Coal gas

D. None of these

**Answer:**



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124. Burning of wood and coal causes severe \_\_\_ pollution.

A. water

B. land

C. air

D. none of these

**Answer:**



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**125.** The type of combustion in which material suddenly burns into flames without the application of any external agent is called

- A. Rapid combustion
- B. Slow combustion
- C. Spontaneous combustion
- D. Explosion

**Answer:**



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**126.** Burning of a matchstick is an example of \_\_\_\_\_ combustion.

A. spontaneous

B. rapid

C. explosion

D. none of these

**Answer:**



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**127.** In which situations we are misusing the fuel resources while cooking in our daily life?

A. Cooking with out lid

B. Using more water while cooking

C. Leakages in pipes, burners and regulators

D. All the above

**Answer:**



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**128.** The unit of calorific value

- A. Kilo joule
- B. Kilo joule - gram
- C. Kilo joule / kilogram
- D. Kilogram

**Answer:**



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**129.** Geetha : Fire is necessary to burn a substance. Harini : Sufficient temperature is necessary, for burning. Whom do you support?

A. Geetha

B. Harini

C. Both Geetha & Harini

D. Neither Geetha nor Harini

**Answer:**



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**130.** Which causes less pollution ? Among the fuels that we use in our daily life.

A. Kerosene

B. LPG

C. Dung cakes

D. Wood

**Answer:**



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**131.** Observe the following table. Which have same calorific value ?

A. Coal, Diesel

B. Coal, Petrol

C. Hydrogen, Diesel

D. Petrol, Diesel

**Answer:**



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**132.** The correct order of the following sentences is 1) Insert a glass tumbler over it, 2) Then flickers and finally, flame goes off, 3) Take a small burning candle and put it on a table, 4) The candle continues to burn for some time

A. 3, 2, 1, 4

B. 3, 1, 4, 2

C. 3, 1, 2, 4

D. 3, 4, 2, 1

**Answer:**



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**133.** On placing an inverted tumbler over a burning candle, the flame extinguishes after sometime. This is because of non-availability of

---

A. Water vapours

B. Oxygen

C. Carbon dioxide

D. Wax

**Answer:**



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**134.** Which one among the following is considered as the cleanest fuel ?

A. Petrol

B. Diesel

C. Cow dung cake

D. Hydrogen gas

**Answer:**



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**135.** Clothes catch fire, the best way to extinguish the fire is to

- A. Throw water on the clothes
- B. Use fire extinguisher
- C. Cover the person with a woollen blanket
- D. Cover the person with a polythene sheet



**Answer:**



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**136.** In villages, people use wood as fuel because \_\_.

- A. It is considered to be an ideal fuel
- B. Of its easy availability and low cost
- C. It is environment friendly.
- D. It catches fire very easily.

**Answer:**



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**137.** Which one of the following has the highest calorific value ?

A. Kerosene

B. Biogas

C. LPG

D. Petrol

**Answer:**



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**138.** One of the following substances is expected to have the highest ignition temperature \_\_\_.

A. Kerosene

B. Petrol

C. Coal .

D. Alcohol

**Answer:**



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**139.** The following is not a combustible substance

A. Camphor

B. Glass

C. Straw

D. Alcohol

**Answer:**



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