CHEMISTRY ONLINE ASSESSMENT CLASS IX

DELHI PUBLIC SCHOOL NEWTOWN
SESSION 2020-2021
TEST ON GAS LAWS

CLASS: IX **FULL MARKS: 20**
SUBJECT: CHEMISTRY **TIME: 35 mins**

Question: 1
Fill in the blanks:
[6]
i) The volume – temperature relationship of gases is given by _____law.
ii) The absolute temperature that corresponds to 24°C is _____.
iii) The force exerted on unit area of the walls of a vessel by the gas molecules is the _____ of the gas.
iv) The partial pressure of water vapour is called _____ _____.
v) 1 atm is equal to _____mm of Hg.

Question : 2
[4] i) Define : Absolute zero
ii) Find the volume of gas X at STP, if it occupies 50cm^3 at 17°C and 736mm of Hg.

Question : 3
[5]
i) Express 875K in Celsius scale.
ii) The volume of a given mass of a gas in a container is 800ml at 650mm Hg pressure. Calculate the pressure at which the gas would occupy a volume of 1300 ml, temperature remaining constant.
iii) Represent the Boyle's law graphically(V vs 1/P). What are such graphs called?

Question : 4
[5]
i) A gas 'Y' at 15 degree Celsius is heated until its pressure doubles and volume triples from the original pressure and volume. If the original volume is 1000 cc, calculate the temperature at which it should be heated.
ii) Hot air is filled into balloons used for meteorological purposes- Which law is followed here?
iii) State Boyle's Law.

DELHI PUBLIC SCHOOL NEWTOWN
SESSION 2020- 2021
CLASS: IX
CHEMISTRY
ASSESSMENT
ON
STUDY OF GAS LAWS (MCQ in Google form)

(Q1-14 each of 1 mark, Q15-17 each of 2 marks, Total 20 marks)

1. One of the following is not the postulate of the kinetic theory of gases:

- **the actual volume of the gas molecules is negligible compared to the volume of the gas**
- **the molecules remain in ceaseless motion**
- **there are sufficient attractive forces between the molecules**
- **the average kinetic energy of the gas molecules is directly proportional to the absolute temperature.**

2. The volume of any gas at this temperature becomes zero_____

3. At what temperature would the volume of a given mass of a gas at constant pressure be twice its volume at 0°C?

4. A gas can be best liquefied by

- **increasing the temperature**
- **lowering the temperature**
- **increasing the pressure**
- **increasing the pressure and lowering the temperature**

5. The absolute temperature value corresponding to 30°C is____

6. At constant temperature, if the pressure is doubled for a fixed mass of a gas then its volume will become:____

7. Keeping the pressure constant, if the temperature of a gas is lowered, its volume :____

8. STP conditions:___

9. Pressure remaining constant, the density of a gas ____ on increasing the temperature

10. The average kinetic energy of the molecule of a gas is proportional to the _____

11. The magnitude of each degree on kelvin scale is ____ as on centigrade scale

12. A bubble of methane rises from the bottom of the Indian ocean. What will happen to the size of the bubble as it rises to the surface?

13. A gas is sealed in a sealed container. How do you think the pressure will change if the container is cooled?

14. If 10mL of a gas is at pressure of 1 atm and we double the pressure, the new volume of the gas will be:___

15. If you heat a 5L balloon from a temperature of 25°C to 50°C, its new volume will be:____

16. 25mL of a gas at a pressure of 2.1atm and a temperature of 300K is compresses to a volume of 10mL at 400K, what will be the new pressure?

17. A gas X at 15°C is heated until its pressure doubles and volume triples from the original pressure and volume. If the original volume is 1000 cc, calculate the temperature to which it should be heated.

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DELHI PUBLIC SCHOOL NEWTOWN

SESSION 2020-21

CLS –IX C **F.M -20**

SUB – CHEMISTRY **DATE -13/7/20**

SECTION -1

1. A certain volume of the gas was found to be at a pressure of 1200 mm of mercury. When the pressure was decreased by 500 mm of mercury, the gas occupied a volume of 2400 cc. Calculate the initial volume occupied by the gas if the change was done at constant temperature.
[3]

2. A gas cylinder having a capacity of 20 litres contains a gas at 100 atmospheric pressure. How many flasks of 200 cc capacity can be filled from it at 1 atmospheric pressure, if the temperature remains constant? [3]

3. A gas 'Y' at 15 degree Celsius is heated until its pressure doubles and volume triples from the original pressure and volume. If the original volume is 1000 cc, calculate the temperature at which it should be heated. [3]

4. It is required to reduce the volume of a gas by 20% by compressing it at a constant pressure. To do so, the gas has to be cooled. If the gas attains a final temperature of 157 degree Celsius, find the initial temperature of the gas. [3]

SECTION- 2

A) Choose the correct option-

1. **1 dm^3 is equal to –**
   a) **100 ml**
   b) **1L**
   c) **100 L**
   d) **None of these** **[1]**
2. **The absolute temperature value corresponds to 35^0C is –**
   a) **298K**
   b) **308K**
   c) **None of these** **[1]**
3. **At -273^0C the volume of a gas becomes-**
   a) **274 cc**
   b) **272cc**
   c) **15cc**
   d) **None of these** **[1]**

B) Write the formulae of the following compounds-

a) **Sodium hypochlorite**
b) **Aluminum nitride** **[1+1]**

C) Match the following columns –

a) **Iron**	i) **Tetravalent**
b) **Permanganate**	ii) **Variable valencies**
c) **Carbide**	iii) **Monovalent radical** **[3]**

DELHI PUBLIC SCHOOL NEWTOWN

SESSION 2020-21

CLS –IX C **F.M -20**

SUB – CHEMISTRY **DATE -29/6/20**

SECTION -1

Question 1

Choose the correct option-

1. **The metal which does not displace hydrogen from dilute acid is –**

a) **Calcium**
b) **Iron**
c) **Copper**
d) **Zinc**

2. **The acid which is not used to liberate hydrogen on reacting with metals is-**
   a) **Hydrochloric acid**
   b) **Sulphuric acid**
   c) **Acetic acid**
   d) **Nitric acid**
3. **A metal which reacts with both water and steam to liberate hydrogen –**
   a) **Calcium**
   b) **Magnesium**
   c) **Zinc**
   d) **Iron**
4. **The catalyst used in Bosch process is-**
   a) **Ferrous oxide**
   b) **Ferric oxide**
   c) **Zinc oxide**
   d) **Chromic oxide**
5. **Which of the following is not an amphoteric oxide–**
   a) **Zinc oxide**
   b) **Sodium oxide**
   c) **Aluminium oxide**
   d) **Lead oxide**
6. **A metal which reacts with very dilute nitric acid is –**
   a) **Magnesium**
   b) **Molybdenum**
   c) **Calcium**
   d) **Copper**
7. **Water gas is a combination of –**
   a) **$CO + H_2O$**
   b) **$O_2 + H_2O$**
   c) **$CO_2 + H_2$**
   d) **$CO + H_2$**
8. **Unsaturated oils are converted to saturated fats by hydrogen. This process is known as –**
   a) **Oxidation**
   b) **Hydrogenation**
   c) **Vulcanization**
   d) **Dehydration**
9. **When heated with oxides of less active metals, hydrogen acts as a _____ agent-**
   a) **Oxidising**
   b) **Reducing**
   c) **Redox**
   d) **Dehydrating**
10. **Which of the following is used to remove water vapour during the lab preparation of hydrogen-**
    a) **Silver nitrate solution**
    b) **Lead nitrate solution**

c) **Caustic potash solution**
d) **Fused calcium chloride**

11. **'X' is a transition element, its atomic number and mass number are 92 and 235 respectively. The ratio of neutrons to protons in this element is –**
    a) **1.52**
    b) **1.33**
    c) **1.55**
    d) **1.42**
12. **Which of the following have same valency? A (2,8,2), B(2,8,4), C(2,6), D(2,8)**
    a) **A & B**
    b) **B & C**
    c) **A & C**
    d) **C& D**
13. **What is the maximum electron capacity of N shell-**
    a) **8**
    b) **18**
    c) **24**
    d) **32**
14. **Which ion has maximum number of shells-**
    a) **Be^{2+}**
    b) **Al^{3+}**
    c) **S^{2-}**
    d) **N^{3-}**
15. **An element is 'X' converted into its positive ion 'X+3'. Mass no of the atom is 27 and the number of neutrons is 14. What is the number of electrons in the ion?**
    a) **14**
    b) **13**
    c) **11**
    d) **10**
16. **Metals loose electrons during ionization. This is called –**
    a) **Oxidation**
    b) **Reduction**
    c) **Redox**
    d) **Displacement**
17. **Which of the following is compounds has all the three types of bonds- ionic, covalent, co-ordinate?**
    a) **Sodium chloride**
    b) **Ammonia**
    c) **Ammonium chloride**
    d) **Carbon tetrachloride**
18. **Which of the following is not a characteristics of an ionic compound-**
    a) **High melting point**
    b) **Water soluble**
    c) **Do not conduct electricity in molten state**
    d) **Consist of oppositely charged ions**
19. **The molecule which has triple covalent bond –**
    a) **Ammonia**
    b) **Water**
    c) **Nitrogen**
    d) **Methane**

20. A compound 'X' exists in the form of molecule. 'X' will have-

a) **A crystalline hard structure**
b) **A low melting point**
c) **An ionic bond**
d) **A strong force of attraction between the molecules**

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SESSION 2020- 2021
CLASS: IX
CHEMISTRY
ASSESSMENT
ON
ATOMIC STRUCTURE

TOTAL MARKS: 33
Marks out of 20= marks obtained× 0.61

Q1.Name the following: An element **[5]**

i. A atomic number 7 mass numbers 14
ii. B electronic configuration 2,8,8
iii. C electrons 13, neutrons 14
iv. D Protons 18 neutrons 22
v. E Electronic configuration 2,8,8,1

Q2. The description of atomic particles of two elements X and Y is given below: **[5]**

i. What is the atomic number of Y?
ii. What is the mass number of X?
iii. What is the relation between X and Y?
iv. Which element/elements do they represent?
v. Write the electronic configuration of X?

	X	Y
Proton	8	8
Neutron	8	9
Electron	8	8

Q3. An element 'M' has three electrons more than the noble gas. **[5]**
Give the formula of its
i. Chloride
ii. Sulphate
iii. Hydroxide
iv. Phosphate
v. Oxide (NOTE: Do not identify the element)

Q4. Observe the following table: **[2+4+2+4=12]**
i. Give the electronic configuration of A and C.
ii. Identify A, B, C and D.
iii. How many valence electrons are present in B and D?
iv. What is the valency of A, B, C and D?

Element	Mass No	Atomic No.	p	n	e
A	1	1	1		
B	14		7		7
C		12	12	12	
D	35		17		17

Q5. i.What are isotopes?   [1+1+1+1=4]

ii.Write the isotopes of hydrogen and carbon
ii.Why do isotopes show similar chemical properties?

Q6. Elements A, B, C and D have atomic numbers 8, 9, 11 and 12, respectively.
[1+1=2]
Choose the most electropositive and most electronegative elements from the above elements.

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