

Z.P.HIGH SCHOOL, _____

HALF YEARLY EXAM

10TH PHYSICAL SCIENCE

NAME _____

ROLL NO: _____

TIME: 2 hours

MAX MARKS: 35

Section-I

Part-A

Note: 1. Answer any five questions choosing at least two from each group. 2. Each question carries two marks

Group-A

1. Explain why dogs pant during hot summer days using the concept of evaporation?
2. Write the differences between evaporation and boiling?
3. Refractive index of glass relative to water is $\frac{9}{8}$. What is the refractive index of water relative to glass?
4. What do you mean by power of lens?

Group-B

5. An electron in an atom has the following set of four quantum numbers to which orbital it belongs to?
6. Why was the basis of classification of elements changed from the atomic mass to the atomic number?
7. By observing the pH scale, answer the following (i) Which of the body fluids have basic nature? (ii) Is lemon juice a strong acid or weak acid? (iii) Which of the above liquids have strong basic character? (iv) What is the pH of distilled water?
8. Which electronic shell is at a higher energy level, K or L? Why?

Section-II

Note: 1. Answer any four questions of the following. 2. Each question carries one mark. $4 \times 1 = 4$

9. Why is respiration considered as an exothermic reaction? Explain
10. Imagine that spherical mirrors are not known to human beings, guess the consequences.
11. Why is the sky blue?
12. Why does pure acetic acid not turn blue litmus to red?
13. What is the value of the least distance of distinct vision?
14. Balance the following chemical equation. $\text{NaOH} + \text{H}_2\text{SO}_4 \rightarrow \text{Na}_2\text{SO}_4 + \text{H}_2\text{O}$

Section-III

Note: 1. Answer any four questions choosing at least two from each group. 2. Each question carries four marks

Group-A

15. Suggest an experiment to prove that the rate of evaporation of liquid depends on its surface area and vapour already present in surrounding air?
16. Prisms are used in binoculars. Collect information why prisms are used in binoculars
17. Suresh can see the objects clearly which are beyond 3m. So he consulted the doctor and the doctor suggested him some lens. a) What type of eye defect does he have? b) What kind of lens did the doctor suggest to overcome the eye defect? c) What is the focal length of the lens?
18. The graph given above shows that an ice cube of 1kg at -5°C is heated till it vaporizes completely. a) What is the state of ice at C? b) What does the part DE in the graph represent? Explain? c) What is the value of *burning match* Q (heat energy) at E shown in graph?

Group-B

19. What are the rules to be followed while filling the electrons in atoms which contain more than one electron? How do you fill the electrons in degenerate orbitals, explain?
20. What is an orbital? How is it different from Bohr's orbit?
21. Explain how the elements are classified into s, p, d and f-block elements in the periodic table and give the advantage of this kind of classification?
22. Newlands proposed the law of octaves. Mendeleeff suggested eight groups for elements in his table, how do you explain these observations in terms of modern concepts?

Section-IV

Note: 1. Answer any one question of the following questions. 2. Each question carries five marks. $1 \times 5 = 5$

23. Draw suitable rays by which we can guess the position of the image formed by a concave mirror.
24. Draw the diagram of heating of calcium carbonate and testing the gas evolved with a burning matchstick

Z.P.HIGH SCHOOL,JONNADA
HALF YEARLY EXAM
10THPHYSICAL SCIENCE

NAME _____

ROLL NO: _____

PART -B

TIME:1/2 hour

MAXMARKS:15

Section-I

1. When ice melts, its temperature []
a) remains constant b) increases c) decreases d) cannot say []
2. Magnification
a) $m=v/u$ b) $m=u/v$ c) h_o/h_i d) h_i/h_o []
- 3.Total internal reflection takes place when the light ray travels from
a) rarer to denser medium b) rarer to rarer medium c) denser to rarer medium d) denser to denser medium []
4. Which one of the following materials cannot be used to make a lens
a) water b) glass c) plastic d) clay []
5. The process of re-emission of absorbed light in all directions with different intensities by the atom or molecule is called a) scattering of light b) dispersion of light c) reflection of light d) refraction of light []
- 6.The chemical equation $BaCl_2+Na_2SO_4 \rightarrow BaSO_4+2NaCl$
a) displacement b) decomposition c) combination d) double-decomposition []
- 7.A solution turns red litmus blue,its pH is likely to be
a) 1 b) 4 c) 5 d) 10 []
8. The maximum number of electrons that can be accommodated in the L shell of an atom is
a) 2 b) 4 c) 8 d) 16 []
- 9) Which of the following is most active element
a)lithium b) sodium c) potassium d) rubidium []
- 10) The quantum number which explains about size and energy of the orbit or shell is
a) n b) l c) m_l d) m_s []
- 11) Boiling point of water at normal atmospheric pressure is
a) 0°C b) 100°C c) 110°C d) -5°C []
- 12) The substances that are present on left side of a chemical equation are called
a)reactants b)products c) substances d) all []
- 13) The equation of mirror formula is
a) $1/f=1/u+1/v$ b) $1/f=1/u-1/v$ c) $1/f=1/ux1/v$ d) $1/f=1/v-1/u$ []
- 14) Which one of the following types of medicines is used for treating indigestion
a)antibiotic b)analgesic c)antacid d) antiseptic []
- 15) The angle of deviation produced by the glass slab is
a) 0° b) 20° c) 90° d) depends on the angle formed by the light ray and normal to the slab []
- 16)Focal length of the plano convex lens is _____when its radius of curvature of the surface is R and n is the refractive index of the lens
a) $f=R$ b) $f=R/2$ c) $f=R/n-1$ d) $f=n-1/R$ []
- 17) During refraction _____ will not change
a)wave length b) frequency c) speed of light d) all the above []
- 18) Which of the following is a noble gas
a)sodium b) oxygen c) radon d) florine []
- 19) Law of traids proposed by
a) Dobereiner b) Newland c) Mendeleef d) H.J.Moseley []
- 20) Planck's constant
a) $6.926 \times 10^{-34} Js$ b) $6.626 \times 10^{-39} Js$ c) $6.626 \times 10^{-34} Js$ d) none []

Section-II

- 21.Ice floats on water because_____
- 22.The decomposition of vegetable into compost is an example of _____
- 23.The pH scale is from _____to_____
- 24)Acids reacts with metals to produce_____gas
- 25)We observe bright rainbow when the angle between incoming and out going rays is near the maximum angle of _____

Match the following:

- | | | |
|---------------------|-----|------------------------------------|
| a) Plaster of Paris | () | 1) CaO Cl_2 |
| b) Gypsum | () | 2) $NaHCO_3$ |
| c) Bleaching powder | () | 3) $Na_2 CO_3$ |
| d) Baking soda | () | 4) $CaSO_4 \cdot \frac{1}{2} H_2O$ |
| e) Washing soda | () | 5) $CaSO_4 \cdot 2 H_2O$ |

Section-III