Model Question Paper March- 2015
General Science Paper-I
(Physical Science)

English Version

Class: **X** Max.Marks:**40** Time: **2.45** hrs.

Instructions

i. Question paper contains 4 sections

ii. Answer all the questions

iii. In Section – I internal Choice is there.

iv. Write the answers of Sections –IV in the answer book let only.

v. Time for examinations is 2.45 min. First 15 min. are meant for reading of the question paper.

Section-I

Instructions **4 x 4 = 16**

i. Answer all the questions

ii. Each question carries 4 marks

iii. In this section internal choice is there Each question two options are there, In each question answer for one option only

iv. Answer should be 8 to 12 sentences.

1) Given few electronic configuration of the elements

a) $1s^2 2s^2 2p^6 3s^2 3p^2$?

b) $1s^2 2s^2 2p^6 3s^2 3p^6 4s^1 3d^5$?

c) $1s^2 2s^2 2p^6 3s^2 3p^6$?

d) $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^9$?

i. Identify the wrong electronic configuration from the above? And mention its name.

ii. Rewrite the electronic configuration which was wrong from the above?

iii. Indentify the Chromium element electronic configuration. And which period does it belongs?

iv. Identify the electronic configuration of inert gas from the above?

OR

S.No.	1	2	3	4	5
Model solution	Orange juice	Lemon juice	Surf water	Juice of tomato	Eno water
Blue litmus					
Red litmus					

In the above given solutions

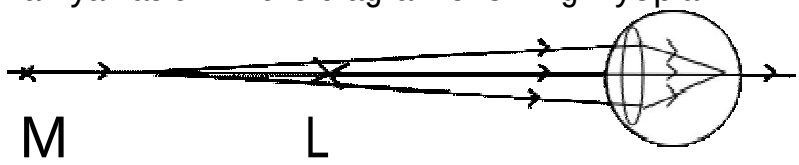
i. What happen when blue and red litmus paper dipped in the above given solution. Tabulate the changes occur.

ii. What do you generalize from the above tests?
Mention other indicators to identify the base and acids?

2) The focal length of a convex lens is 10 cm.Where does the image formed when the object is placed at 20 cm. distance from the pole of a convex lens? Write the characteristics of the Image?

OR

Ramya has drwn the diagram showing myopia



i. Identify the mistake in the figured and correct it?

ii. To correct the myopia what type of lens is used?
Why should we use such lens for myopia? Explain.

3) Classification of the element by different scientists is different way. Explain the classification of elements of any two scientists.

OR

Some chemical equations are given below.

$Na_2CO_3 + HCl \rightarrow NaCl + H_2O + CO_2$

$NaHCO_3 \rightarrow Na_2CO_3 + H_2O + CO_2$

$C + O_2 \rightarrow CO$

$C_3H_8 + O_2 \rightarrow CO_2 + H_2O$ Then

i. Balance the given chemical equation.

ii. Identify and Write the above chemical equations which are belong to chemical combinations and chemical decompositions.

4) Answer the following questions List out the material required for verifying the Ohms Law and explain the experiment to verify the Ohms law and draw its electric circuit.

OR

Ravi connected the three resistances as above.

i. How the resistors did is connected in the circuit?

ii. If 25 Ω, 25 Ω,and 25 Ω in the place of R_1, R_2, and R_3 in parallel connection. Find the resultant resistance and draw the circuit

Section-II

Instructions **6 x 2 = 12**

i. Answer all the questions ii. Each question carries 2 marks iii. Answer should be 4 to 5 sentences.

5) Pour some water in a beaker. Heat it gently. A thermometer inserted in beaker, raised temperature up to 100^0C . After attaining 100^0C, no further rise of temperature is seen though supply of heat continues. Explain the reason. In place of water, If you take ice cubes and heat them, when will the reading of the thermometer changes? Why?

6) A ray of light is passing from Denser medium to rarer medium. Explain the condition for the incident angles to become critical angle. What happens when incident angle is more than critical angle?

7) A Student says that sulphur-di-oxides is formed when sulphar burns in air. What questions will you ask the student about the reaction?

8) All ores are minerals but all minerals are not ores. Are you supporting the statement? If so why?

9) A Milk man mixed sodium Hydrogen carbonate to milk. Explain the reasons for the following:
   i) Why P^H of the milk has raised to 6?
   ii) Why this milk takes more time to become curd?

10) In which of the following elements, has a chance to form ionic bond. Explain with reasons?
   Elements: Na,Mg,O, Cl,N,Ca

Section-III

Instructions **7 x 1 = 7**

i. Answer all the questions
ii. Each question carries 1 marks
iii. Answer should be 2 to 3 sentences.

11) Explain why a fuse is inserted in a circuit. What are the characteristic property of the fuse wire.

12) How can you say that the reaction between $Pb(NO_3)_2$ and KI is a double displacement reaction.

13) Write IUPAC name for the following:

i) $CH_3-CH-\underset{\underset{Br}{|}}{CH}-\underset{\underset{Br}{|}}{CH_2}-CH_2-CH_3$ ii) CH_3-CH_3

14) Convert the 273 Kelvin temperature in to centigrade

15) According to Neil's Bohr electrons revolved around the Nucleus in fixed orbits. What are these fixed orbits called?

16) Acid rains cause damage to historic monuments like Charminar and Tajmahal. Explain the reason for the damage.

17) Shiva's Grandfather is unable to read Newspaper. Doctor rectified this defect by inserting a lens in his spectacles.

i) What kind of lens is inserted?

ii) Explain this defect with the Diagram?

Section-IV

18) The Radii of Curvature of two lenses are equal and its value is 0.04mm and refractive index is 1.5. Then the focal length is _____

a)0.04mm b) 0.4mm c) 4mm d) 40mm

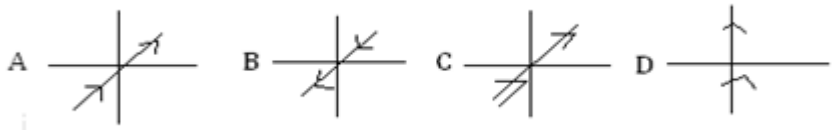
19) Li, Na,K or dobereinar' triads. Atomic weight of lithium is 7 and potassium is 39. Then At.Wt of Na is _____

a) 11 b)22 c)23 d)46

20) The Electronic configuration of 4 elements namely K,L,M and N are respectively K:$1S^2\ 2S^2\ 2P^3$, L: $1S^2\ 2S^2\ 2P^6$, M: $1S^2\ 2S^2\ 2P^4$. Among these elements which di -atomic molecule forms double bond?

a) K b) L c) M d) N

21) Among the following which represents a ray travels from denser medium to rarer medium



22) Observe the following:

Set-A	Set-**B**
a)Moseley's periodic law:	1)The Physical and chemical properties of the elements are periodic functions of their E. C.
b)Mendeleev's Periodic law:	2) The Physical and chemical properties of the elements Periodic functions of their atomic Numbers.
c) Modern Periodic law:	3) The Physical and chemical properties of the elements Atomic masses

A) 1,2,3, B)3,2,1 C)2,3,1 D)1,3,2

23) Which converts mechanical energy into electrical energy:_____

A)Motor B)Generator C)Solenoid D)Galvanometer

24) Galena is an ore of :_____

a)Al b)Hg c)Pb d)Zn

25) Soap is dissolved in water:_____

a)Colloidal solution b)True solution c)Colloidal Suspension d)Acidified solution

26) $H\text{-}CH_3 - CH \xrightarrow[\text{con } HSO_4]{\text{at } 150} \times + H_2O$ then 'X'

A)C_2H_6 B)C_2H_2 C)C_2H_4 D)CH_3-CH

27) Among the following which conducts electricity through it is :___

a)Diamond b)Sulphur in liquid phase c)Aqueous KCl d)Wood

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Section-I

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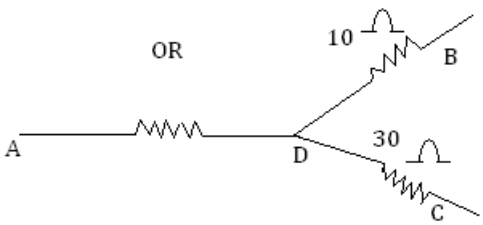
1) Naveen is unable see the objects with in 3m. He consulted a doctor. Doctor advised him to use lens. Now answer the following.
   i) Identify the defect of vision is Naveen. ?
   ii) Suggest the lens to be used to rectify the defect. ?
   iii) Calculate the total length of the lens used by Naveen. ?

OR



The P.D between theme is respectively at the ends A,B,C are 70V, OV, and 10V then

i) Find the potential at D?

ii) Find the ratio of current in AD, DB,DC.

2) Carbon shows the property of Allotropy.

   i) What is Allotropy
   ii) Crystalline and amorphous forms of carbon
   iii) Write a brief notes on Nan tubes and mention its uses.

OR

In Our Daily we observe many Red-ox reactions and combustion reaction. “Every Oxidation reaction is not combustion rectum. But Every combustion rectum is Oxidation”. Comment on this with examples.

3) In an experiment a student took 200ml of water at 80^0 and mixed it with 400ml of water at 20^0. Find the resultant temperate of the mixture.

OR

Describing the experiment finding the relation between Incident ray and Refracted ray by using a semicircular glass slab. Why should we use semi-circular glass slab. What are the precautions to be taken in this experiment?

4) The E.C of an element is written here.

Akhila said that the notation is wrong.

   i. She corrected the above electron configuration. What is that?
   ii. Which rule the given electron configuration is violated and name the element.

OR

The P^H values of X,Y.Z solutions respectively 13,6,2 then.

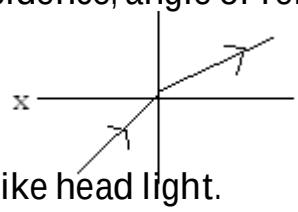
   i. Which is strong Acid?
   ii. Which solution contains solute par tides along with ions.
   iii. Which is strong base? Why?
   iv. When a Base is added to a solution then its P^H increases or Decreases and why?

Section-II

Instructions **6 x 2 = 12**

iv.Answer all the questions v.Each question carries 2 marks vi.Answer should be 4 to 5 sentences.

5) Identify normal, incident ray, reflected ray, angle of incidence, angle of refraction, separation plane, denser medium, Rarer medium.



6) Answer the following questions regarding the Car or Bike head light.

   i) What type of mirror is used?

   ii) The light from the bulb falls on the mirror and gets reflection. Draw a neat ray Diagram showing it.

7) In a lab a student perform the reaction by taking the following substances.

   Copper Sulphate, Barium chloride, ferrous Sulphate, Iron nails, Quicklime and water. Write the possible chemical reactions from them.

8) Explain why condensation takes place outside when we keep some ice cubes in the container.

9) Lens makers formula is $\frac{1}{f}=(n-1)\left(\frac{1}{R_1}-\frac{1}{R_2}\right)$ Explain the terms what they represent?

   When will he use this formula?

10) Why preparing Mirchi Baking soda is added

   i) Write the chemical name and formula of baking soda.

   ii) Write the equation for making baking soda from Sodium Chloride.

Section-III

Instructions **7 x 1 = 7**

i. Answer all the questions

ii. Each question carries 1 marks

iii. Answer should be 2 to 3 sentences.

11) The Refractive index of water is 4/3. What is the critical angle of water?

12) What happens when a parallel beam of light falls on a lens making some angle with the principal axis? Draw the Diagram.

13) Ophthalmologist advised to use 2D lens. What is its focal lens?

14) Atomics combine themselves to form molecules. Why they do so?

15) Write the apparatus required for on experiment showing the relation between the length of the conductor and the resistance.

16) What is the role of slip rings in electric motor?

17) What do you understand by concentration of ore.

Section-IV

18) The process is used to separate the impurities of sulphide ore

A)Froth flotation B)Hand picking C)Washing D)Magnetic Separation

19) Take three test tubes A,B,C 2ml. of ethonoic Acid is added to each test tube and add 2ml, 4ml, 8ml, water to it. In which test tube will have a clear solution

a)Only A b) Only A and B c) Only B and C d) All Test tubes

20) AC is more convenient for transmission then D.C Because:

A)AC can be rectified B)AC can be produced easily

C)Thin Conductors can be used D)It's safest

21) Strong covalent bond can be formed:

A) H_2 B) O_2 C) N_2 D)None

22) "F " Orbital can be found in the following orbit.

A) K B)L C)N D)N

23) The relation between power of the lens and focal length of the lens is _____

A) p=f B)2p=f C)2f=p D)p=1/f

24) The following is not shells law.

A) $1 \sin i = n_2 \sin r$ B) [illegible] C) [illegible] D) [illegible]

25) 2kg Water vapor 100^0C is condensed to water at 40^0C. The quantity of heat released is _____

A)600K.Cal B)1200K.Cal C)60K.Cal D)120K.Cal

26) $2PbO + C \rightarrow 2Pb + CO_2$ Which one of the following is correct:

A)Lead is reduced B)CO_2 is oxidized C)C is Oxidized D)PbO is reduced

27) Stinging of Honeybee causes pain due to releasing of :__

A)Methanoic Acid B)Tartaric Acid C)Hydrochloric Acid D)Citric Acid