

# MODEL QUESTION PAPER

## X STANDARD – SCIENCE

**Time: 2.30.Hrs**

**Marks:75**

### Section – A

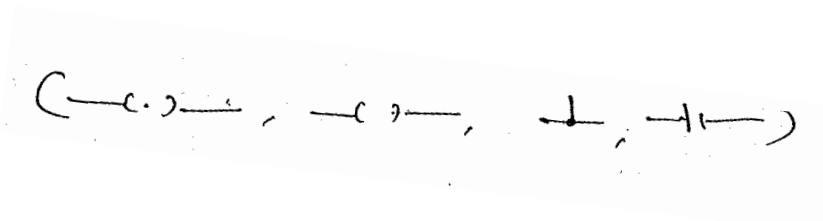
I i) Choose the right Answer

ii) Answer all questions

**15 x 1 =15**

1. A fruit develops from a single flower with multicarpellary, apocarpous, superior ovary is (Aggregate fruit, composite fruit, simple fruit, multiple fruit)
2. Which of the following constitute a food chain { (Grass, Wheat and Mango), (Grass, goat and Human),(Goat, cow and elephant),(Grass, fish and goat)}
3. Somatic genetheraphy does ( affect the sperm, affect the egg, affect the progency, affect body cell)
4. Pick out the bacterial disease( Meningities, Rabies, Tetanus, Small pox)
5. Mammal's main excretory product is (Ammonia, Uric acid, Urea, Sodium)
6. When sunlight passes through the window of your house, the dust particles scatter the light making the path of the light visible. This phenomenon is called as (Brownian motion , tyndall effect, Raman Effect , uniform motion)
7.  $2\text{KClO}_3 \xrightarrow[\text{MnO}_2]{\Delta} 2\text{KCl} + 3\text{O}_2$  In this chemical reaction  $\text{MnO}_2$  acts as (reactant, product , catalyst, promoter)
8. Number of groups in modern periodic table is ----- (7,17,18,8)
9. An amalgam is an alloy of metal with ( carbon, mercury, hydrogen, gold)
10. The saturated hydrocarbons form homologous series with the general formula  $\text{C}_n\text{H}_{2n+2}$ . The formula of the second member in this series is ( $\text{C}_2\text{H}_2$ ,  $\text{C}_2\text{H}_6$ ,  $\text{C}_2\text{H}_4$ ,  $\text{C}_2\text{H}_8$ )

11. An object is placed at 25 c.m. from a convex lens whose focal length is 10 c.m. The image distance is ..... (50 c.m, 16.66 c.m, 6.6 c.m., 10 c.m.)
12. Mass of an object is 10 Kg. What is its weight on the earth (where  $w=mg$ ,  $g=9.8m/s^2$ ) (49 N, 25 N, 98 N, 100 N)
13. Four cells each of emf "E" are joined in parallel to form a battery. The equivalent emf of the battery will be .....(4E, E, E/4, E=0)
14. The symbol for closed switch is .....



15. Electric power can be transmitted over long distance without much loss of energy is an important advantage of .....(AC, DC, Both AC & DC, None)

**Section B**

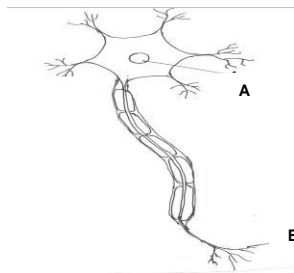
- II i) Short Answers  
 ii) Answer any twenty questions. 20 X 2 = 40

16. Match the following glands with suitable hormone

<b>Glands</b>	<b>Hormone</b>
a. Adrenal cortex	i) Insulin
b. Neurohypophysis	ii) Thyroxin
c. Thyroid	iii) Cortisone
d. Islets of Langerhan	iv) Oxytocin

17. Do you agree with the statement given below. If not, give the correct statements.
- a. Variation may be defined as the affinities in the characteristics among the individual the species
- b. Evolution is a sudden development from the complex species to simple form Do you agree with the above statements?

18. Copy the diagram of neuron and label the parts A and B



19. **Assertion (A):** The secretions of pituitary gland controls all other endocrine glands.

**Reason (R) :** It is known as the conductor of endocrine orchestra

- a) A is correct and R is not giving correct reasoning.
- b) A is correct and R is wrong
- c) A is wrong and R is correct
- d) A is relevant and R is giving correct reasoning.

20. You suspect that your friend is suffering from common cold. What are the questions you will ask your friend to confirm the disease.

21. The polar bears have thick skin coat and wooly fur, the ballen whales have ballen plates. Give reasons

22. The diagram shows that internal structure of the human heart. Label the following parts.

- a. The blood vessal that carries blood to the lungs
- b. The blood vessal that carries blood to the different parts of the body.



23. The tearing teeth of carnivorous animals ..... The tusks of an elephant are modified teeth of .....

24. Draw and label any two parts of the anther.



25. What will happen if all the grass is removed from the grass land eco system?

26. **Assertion A:** All public places need not have adequate sanitation and hygiene facilities.

**Reason (R):** There is a greater risk of the spread of diseases such as Hepatitis A, Typhoid, diareha, etc.,

- a) A is right R is wrong
- b) A is wrong R is right
- c) R explains A
- d) B does not explain A

27. **Assertion A :**Alcohol is made by fermenting the sugar components of plant materials. It can be used as a fuel for vehicles.

**Reason (R) :** Bio - ethanol is widely used.

- a) A is false statement R is correct
- b) A is correct R is wrong
- c) A is correct R is relevant
- d) A and R statements not relevant.

28. Read the following the statements and correct them.

- i) Green diesel is a fossil fuel.
- ii) Bio - ethanol is widely used in England and Spain

29. Any water that has been used in the home, with the exception of water in the toilet can be referred to as waste water. It is also referred as gray water. Suggest any two ways to reuse this water and state benefit out of it.

30. Pollen grains have ceaseless, zigzag, continuous random motion when taken in a beaker containing water. Name the phenomenon and give the reason.



37. Match the following:

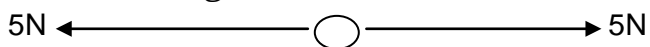
**Compounds**

- a. Ethylalcohol
- b. Acetaldehyde
- c. Methanoicacid
- d. Acetone

**Functional Group**

- i) - CO -
- ii) - OH
- iii) - CHO
- iv) -COOH

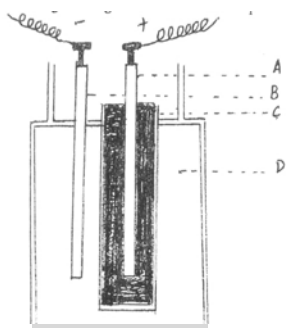
38. Observe the diagram and Write the answer



- a. The resultant of these forces is \_\_\_\_\_
- b. Does the ball move?

39. “When a gun is fired, it exerts forward forces on the bullet”. Why does the gun recoil backwards?

40. Leclanche cell diagram is given below. Lable the parts A, B, C, D.

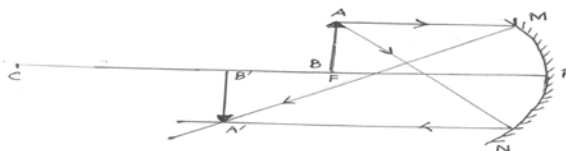


41. Match the following

Components		Symbols
a) Switch (closed)	i)	
b) Battery	ii)	
c) Electric bulb	iii)	
d) Resistance	iv)	

42. Harmful radiations originate from a nuclear reactor. Precautions are taken to see that they do not become a threat to living beings. What are these precautions?

43. The ray diagram shown below is introduced to show how a concave mirror forms an image A' B' of an object A B placed at F.



- a. Identify the mistakes and draw the correct ray diagram.
  - b. Write the justification for your corrections
44. The speed of light in vacuum is  $3 \times 10^8$  m/s Calculate the speed of light in medium of refractive index  $4/3$ . [Hint:  $\mu = c/v$ ]
45. Odd one out.
- a. Myopia, hypermetropia, scurvy, presbyopia
  - b. Convex mirror, concave mirror, plane mirror, convex lens.

### Section – C

**4 x 5 = 20**

- Note:** i) Answer any four questions by choosing one question from each group  
 ii) Each question carries five marks  
 iii) Draw diagram wherever necessary

#### Group-A

46. a. State any two applications of Bio-sensor in medicines. Somatic genetherapy does not effect the sperm or egg. Give reason.  
 b. What are the types of gene therapy?
47. a. The transfer of disease causing germ from an infected person to a normal healthy person through air by sneezing, coughing and talking is possible. Is there any other agent that transmits the infectious germs. List the agents or carriers, and the various diseases caused by them.  
 b. Administering vaccine is to prevent the spread of diseases. Brief the role of MMR and DT vaccine.

#### Group-B

48. Calyx, Corolla are the parts of a flower.  
 a. Give the reproductive parts of a flower

- b. State the process involved in sexual reproduction.
- c. Fruit is a ripened ovary classify the following fruits.
  - 1. Cotton / Lady's finger
  - 2. Paddy
  - 3. Castor

49. a) Smoke, Smoke everywhere smoke. List the effects of coal smoking.  
b) To meet out the water scarcity we need several ways to increase the water supply. Suggest any two ways to manage the crisis.

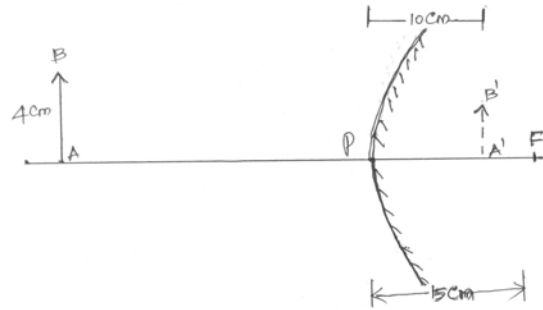
### Group-C

50. a. Mole concept is introduced to express the quantity of a substance. If 90 g of water is taken in a beaker. Find the number of moles in it.  
b. Atoms and molecules are the building blocks of matter. List out any two differences between them.
51. a. Ethanoic acid reacts with ethanol in the presence of concentrated sulphuric acid.
  - i) Name the organic product formed.
  - ii) Give the name of the reaction.
  - iii) What is the role of sulphuric acid in the above reactionb. The structural formula of an organic compound is  $\text{CH}_3 - \text{CH}_2 - \text{OH}$ 
  - i) Write the IUPAC name of this compound
  - ii) Give one use of this compound.

### Group - D

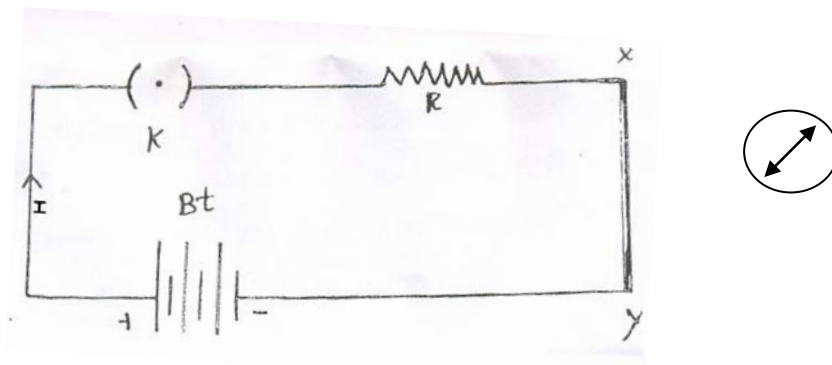
52. a. Place the following objects in the correct order from the lowest to the highest momentum.  
Assume that all the objects are moving at their maximum velocity.  
Aeroplane, Train, Bus, Car, Cycle.  
{Where: Momentum = mass x velocity;  $p = mv$  }
- b. Which object has more momentum ; a car travelling at 10 km/hr or a baseball pitched at 150 km/hr? Explain your answer.
- c. Newton's third law of motion. For every action there is an equal and opposite reaction. Explain this law, using one illustration.
53. a. Observe the figure and write down the following quantities using Cartesian sign convention.





- i) The length of the object AB
- ii) The distance to the image.
- iii) The focal length of the convex mirror

b. Observe the figure and answer the following questions



- i) Why is the magnetic needle deflected?
- ii) If the direction of current is reversed, what will be the direction of deflection of magnetic needle?

# X STANDARD

## SCIENCE

### Model Question Paper - 1

Time : 2.30 Hrs.

Marks : 75

#### SECTION - A

#### I. Answer all questions :

15 x 1 = 15

1. Biotechnologically synthesized vitamin \_\_\_\_\_ is used, to cure pernicious anaemia.  
( Vitamin A, Vitamin B, Vitamin B12, Vitamin C )
2. In the following Plasmodium which one cause malignant and fatal.  
( Plasmodium vivax, Plasmodium malariae, Plasmodium falciparum, Plasmodium ovale )
3. These are all schizocarpic fruit  
( Legume, Follicle, Capsule, Berry, Hesperidium, Pome Lomentum, Cremocarp, Regma, Simple, Aggregate, Composite )
4. The pollentubes grow towards ovule. This is  
( Phototropism, Chemotropism, Hydrotropism, Geotropism )
5. Odd one out  
( Plants, Grasshopper, Frog, Tiger - snake )
6. The solubility of Sodium Nitrate in water is  
( 92 g, 184 g, 95 g, 36 g )
7. On heating the green colour copper carbonate changes into \_\_\_\_\_ colour resulting in the formation of copper oxide?  
( white, black, green, red )
8. The percentage of purity of Gold is calculated for making ornaments.  
(  $\frac{24}{22} \times 100,$   $\frac{22}{24} \times 100,$   
 $\frac{20}{24} \times 100,$   $\frac{18}{24} \times 100$  )

9. Atomic number of Iron is 26. Its electronic configuration is \_\_\_\_\_  
 ( 2,8,8,2, 2,8,8,4, 2,8,14,2, 2,8,14,4)
10. Ethanol on oxidation in the presence of alkaline potassium permanganate or acidified potassium dichromate gives the following acid.  
 ( Propanoic acid, Butanoic acid, Methanoic acid, Ethanoic acid )
11. The freezing of biotechnology products like vaccines require the freezing systems.  
 ( Helium, Nitrogen, Ammonia, Chlorine)
12. 1 kwh is equal to  
 (  $3.6 \times 10^{-6}J$ ,  $3.6 \times 10^6J$ ,  $6.3 \times 10^{-6}J$ ,  $6.3 \times 10^6J$ )
13. From the following statements write down that which does not represent ohm's Law.  
 (  $\frac{\text{Current}}{\text{Potential difference}} = \text{Constant}$ ,  $\frac{\text{Potential difference}}{\text{Current}} = \text{Constant}$ ,  
 Current = resistance x Potential difference,  
 Resistance =  $\frac{\text{Potential difference}}{\text{Current}}$  )
14. The magnification produced by a mirror is 1/3, then the type of mirror is  
 ( Concave, Convex, Plane, double concave )
15. Magnetic field is a quantity that has  
 ( Direction only, Magnitude only, both magnetic and direction, Spin only )

## SECTION - B

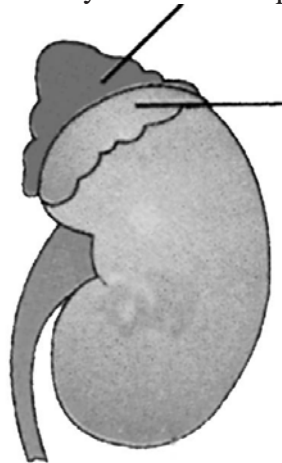
### II. i. Short Answers :

20 x 2 = 40

ii. Answer any twenty questions.

16. Monoclonal antibodies are the antibodies produced by \_\_\_\_\_ Monoclonal antibodies are now used for treatment of \_\_\_\_\_.
17. Correct the following sentence if it has any mistake.  
 Fungi are green saprophytic or parasitic plants living on live and decaying organic matter or living organisms.

18. Copy the diagram of Kidney and label the parts A and B



19. Match the following

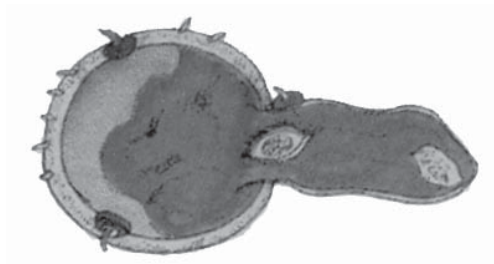
- |                   |   |                                      |
|-------------------|---|--------------------------------------|
| 1. Fore brain     | - | CNS, PNS and ANS                     |
| 2. Mid brain      | - | Pons, cerebellum & medulla oblongata |
| 3. Hind brain     | - | cerebrum, thalamus, hypothalamus     |
| 4. Nervous system | - | cerebral aqueduct                    |

20. Find the odd one out from the following.

(Goitre, Diabetes, Oestrogen, Dwarfism)

21. Redraw the diagram and label the following parts.

- a) Exine                      b) Tubenucleus



22. Classify the animals according to Tundra, Desert, Freshwater and Marine.

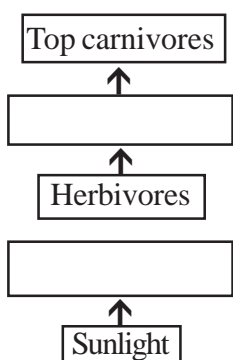
(Indian wild ass, Whales, Platypus, rein deer)

23. Man uses his fore limb to hold an object and to write.

(i) What is the use of fore limb of horse?

(ii) Write the use of fore limb of rat?

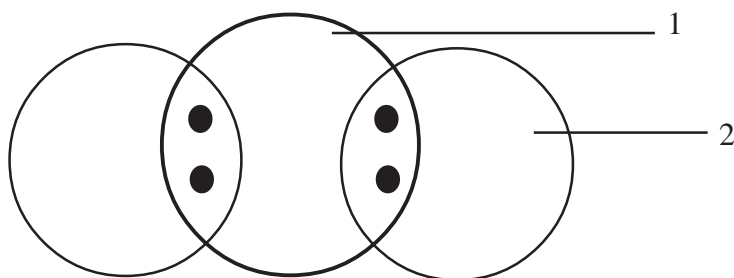
24. Imagine reproduction will not happen in human for fifty years. Interpret your answer in one or two sentences.
25. In coelenterates and sponges the excreta diffuse out through the \_\_\_\_\_  
In Annelids, special kidneys called \_\_\_\_\_ are evolved to collect excreta from the coelomic cavity.
26. Complete the flow of energy in an Ecosystem.



27. Natural gas is a major feed stock for the production of Ammonia and fertilizer production. Mention some other uses (any two only)
28. Energy management should help the environment by reducing the use of natural resource without polluting environment for the future purpose.  
a) Discuss any two importance of energy management  
b) write any two ways of saving energy at home
29. Do not iron wet clothes. Give reasons.
30. 2g of Potassium sulphate was dissolved in 12.5ml of water. On cooling, the first crystals appeared at 60°C. What is the solubility of Pottassium shlpate in water at 60°C.
31. Complete the following

Solute	Solvent	Example
Solid	_____	Alloys
Solid	liquid	_____
Solid	gas	_____
Liquid	solid	_____

32. (i) Draw the molecule of water and name the elements



(ii) Name two examples for homoatomic molecules.

33. Spot the error.

(i) A Chemical reaction in which oxidation and reduction take place simultaneously is called double decomposition.

(ii)  $\text{Fe} + \text{CuSO}_4 \longrightarrow \text{Cu} + \text{FeSO}_4$ , identify the type it belongs to.

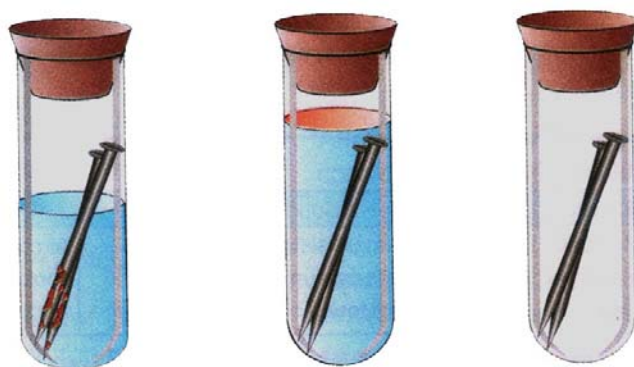
34. Match the following :

Source		Acid Present
Lemon	-	Lactic acid
Apple	-	Tartaric acid
Grapes	-	Citric acid
Curd	-	Malic acid

35. (i) MODern periodic table is made up of periods and groups. How many periods and groups are there in the periodic table?

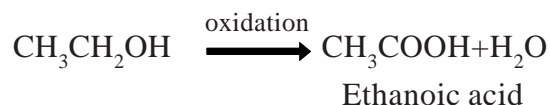
(ii) Name any two strategic metals.

36.



After few days the nails in A are rusted while the nails in B and C are un affected  
Give reasons.

37. Ethanol is oxidized to ethanoic acid with acidified  $K_2Cr_2O_7$ .



- (i) During this reaction identify the colour change involved.
- (ii) Mention the use of the above reaction.
38. A bullet of mass 15g is horizontally fired with velocity  $100ms^{-1}$  from a pistol of mass 2kg. what is the recoil velocity of the pistol?
39. Odd one out.
- (a) newtonmeter,  $Kgms^{-1}$ , gravitation
- (b) momentum, force, acceleration, newton
40. The potential difference between the terminals of an electric heater is 60V when it draws a current of 5A from the source. What current will the heater draw if the potential difference is increased to 120V?
41. In a voltaic cell the copper rod is the positive pole and Ammonium chloride is the electrolyte. The carbon rod is the negative pole. Spot the error.
42. Fill in the blanks
- $${}_{92}U^{235} + {}_0n^1 \longrightarrow \text{-----} + {}_{36}Kr^{92} + \text{-----} + 200 \text{ Mev}$$
43. Draw ray diagram to show the formation of image by a concave mirror when an object is between P and F.
44. Place the magnetic needle near the north pole of the bar magnet. How does the south pole and the north pole of the needle points?
45. Match the following
- |                       |   |                                                   |
|-----------------------|---|---------------------------------------------------|
| 1) Electric motor     | - | $\frac{\sin i}{\sin r}$                           |
| 2) Electric Generator | - | diopetre                                          |
| 3) Refractive index   | - | converts electrical energy into mechanical energy |
| 4) power of a lens    | - | coverts mechanical energy into electrical energy. |

## **SECTION - C**

- Note :
- (i) Answer any 4 questions by choosing one question from each group.
  - (ii) Each question carries five marks.
  - (iii) Draw diagram wherever necessary.

4 x 5 = 20

### **GROUP - A**

46. Genetic engineering resulted to a new Branch of Science
- (a) Define genetic engineering.
  - (b) What are the benefits of Genetic engineering
  - (c) What are the uses of restriction endonucleases and DNA ligase?
47. T.B. affex lungs and other parts of our body?
- (a) What is the caustive agent of Tuber culos is?
  - (b) Symptoms of Tuberculosis.
  - (c) How to prevent Tuberculosis

### **GROUP - B**

48. (a) Define fertilization
- (b) What are the post fertilization changes?
  - (c) What are Parthenocarpic fruits?
49. Green chemistry is a modern concept, develop in almost in all branches of chemistry.
- (a) What is Green chemistry?
  - (b) What is a global village?
  - (c) List out some products produced by the process of green chemistry.

### **GROUP- C**

50. (i) What are the differences between isotopes and isobars? (2)
- (ii) complete the following.
- 2x \_\_\_\_\_ = Relative molecular mass. (1)
- (iii) Give examples for triatomic and polyatomic molecules. (2)



51. (a) What is functional group?

(b) Complete the table

Sl.No.	Formula	Common Name	IUPAC Name
1.	$\text{CH}_3\text{CH}_2\text{CH}_3$	Propane	_____
2.	$\text{CH}_3\text{CH}_2\text{CH}=\text{CH}_2$	$\alpha$ Butylene	_____
3.	_____	Dimethyl acetylene	_____
4.	_____	Propionaldchye	_____

### **GROUP - D**

52. (a) What are the differences between mass and weight?

(b) Explain balanced and imbalanced forces with an illustration.

53. (a) In Fleming's left hand rule, what are denoted by three fingers?

(b) State any two uses of concave lenses.

(c) A concave lens has focal length of 15cm. At what distance should the object be placed so that it forms an image 10cm from the lens.

**X STANDARD**  
**SCIENCE**  
**Model Question Paper - 2**

Time : 2.30 Hrs.

Marks : 75

**SECTION - A**

**I. Answer all questions :**

15 x 1 = 15

1. Somatic gene therapy affects \_\_\_\_\_  
( Sperm, egg, progeny, body cell )
2. Pick out the protein deficiency disease  
( Typhoid, Malaria, Marasmus, AIDS)
3. The integuments of the Ovule develop into \_\_\_\_\_  
( covary, Seed Coat, Egg, Seed)
4. The autotrophic nutrition required \_\_\_\_\_  
(  $\text{CO}_2$  and water, Chlorophyll, Sunlight, all the above )
5. \_\_\_\_\_ chemical is used in seeding clouds.  
( Potassium iodide, Calcium carbonate,  
Sulphur di Oxide Ammonium phosphate )
6. Which of the following is a true solution \_\_\_\_\_  
( Milk, Salt in carbon di sulphide, Blood, Sugar solution )
7. The nature of the tooth paste commonly used is \_\_\_\_\_ in nature  
( acidic, basic, neutral, Salty )
8. Bauxite is used to extract aluminium it can be termed as \_\_\_\_\_  
( Ore, Mineral, flux, Slag )
9. Elements of Group 3 to 12 in the long form of periodic table are called.  
( representative elements, transition elements,  
Inner transition elements, Inert gases )

10. Buckminster fullerence is the allotropic form of \_\_\_\_\_  
( Nitrogen, Carbon, Sulphur, Phosphorous )
11. Metals frozen to low temperature showed more resistance to wear. This is known as \_\_\_\_\_ .  
( cryogenic yielding, cryogenic hardening , cryogenic cooling, cryogenic shapping)
12. Kilo watt - hour is the unit of \_\_\_\_\_  
( Potential difference, electric power, electric energym, charge )
13. Einsteins mass energy relation is \_\_\_\_\_  
(  $E = \frac{m}{c^2}$  ,  $E=mc^2$ ,  $E=h\lambda$ ,  $E = 1/2 mc^2$  )
14. In Felming's left hand rule, the fore finger represents the direction of \_\_\_\_\_  
( magnetic field, current, motion of a conductor, electric field )
15. Eye lens is a \_\_\_\_\_  
( double convex lens, double concave lens, plano convex lens, plano concave lens )

## **SECTION - B**

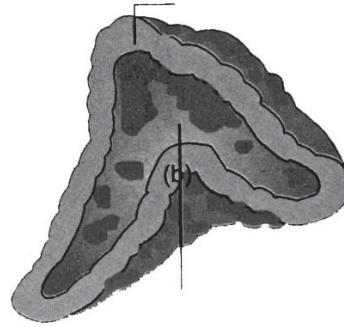
### **II. i. Short Answers :**

20 x 2 = 40

*ii. Answer any twenty questions.*

16. Match the disease and causative agents.
- |                  |   |                   |
|------------------|---|-------------------|
| 1. Influenza     | - | Human rhino virus |
| 2. Common cold   | - | $H_1N_1$ virus    |
| 3. Tuber culosis | - | Microsporium      |
| 4. Ring worm     | - | Mycobacterium     |
17. Correct the answer.
- (a) The eye colour among the human beings are varied as blue, black, brown and green etc., This is called Inter Specific Variation.
- (b) The dentition in rabbit and elephant are not the same. This is called as Intra Specific Variation.

18. Copy the diagram and label any two parts.



19. Rahul forgets his answers, lacks intelligence lacks imagination and reasoning after met an accident. Which area affected to him?

20. Fill in the blanks :

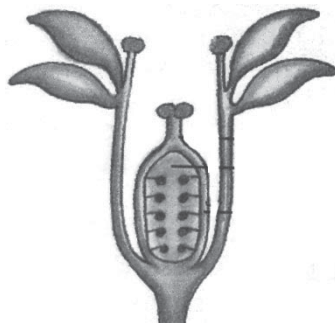
An endocrine gland found in neck is \_\_\_\_\_

(adrenal gland, thyroid gland)

21. This diagram shows the gynoecium of flower Label the following parts.

1. Stigma

2. Ovary



22. Plasma : Fibrinogen

RBC : Carrier of oxygen

WBC : \_\_\_\_\_

23. Mitral valve is found between \_\_\_\_\_

(left auricle and left ventricle, right auricle and right ventricle)

24. Master chemists of our body are kidneys justify.

25. Assertion (A) : Green plants do not possess chloroplasts.

Reason (R) Chloroplasts do not carry out photo synthesis

(a) A is correct R is correct

(b) A is correct R is wrong

(c) A is wrong R is correct

(d) A is wrong R is wrong

26. Which of the following are non-biodegradable?  
(Aluminium cans, Hay, Dry twigs, Animal dung, Plastic waste)
27. To interpret what happens in the given situation Hydrogen is found to be a good choice among the alternative fuel, Why?
28. Spot the error in the given statements  
(a) Primary treatment is used to remove dissolved and suspended biological matter.  
(b) Butane is the Chief component of natural gas.
29. Odd one out  
(a) Bio alcohol, green diesel, bioethers, petroleum  
(b) Cholera, typhoid, scabies, dysentery
30. Take 10g of Common Salt and dissolve it in 40g of the water. Find the concentration of solution in terms of weight percent.
31. From the table given below, furnish your points of inferences

Substance	Solubility at 25°C
NaCl	36g
NaBr	95g

32. From the given examples, form the pair of Isotopes and the pair of Isobars  
 ${}_{18}\text{Ar}^{40}$ ,  ${}_{17}\text{Cl}^{35}$ ,  ${}_{20}\text{Ca}^{40}$ ,  ${}_{17}\text{Cl}^{37}$
33. Why does the colour of Copper Sulphate change when an iron nail is kept in it? Justify your answer.
34. Match the following :
- |                                  |   |                                                                           |
|----------------------------------|---|---------------------------------------------------------------------------|
| 1. Displacement reaction         | - | $\text{CaCO}_3 \xrightarrow{\Delta} \text{CaO} + \text{CO}_2$             |
| 2. Double decomposition reaction | - | $\text{H}_2\text{S} + \text{Cl}_2 \longrightarrow 2\text{HCl} + \text{S}$ |
| 3. Decomposition reaction        | - | $2\text{H}_2 + \text{O}_2 \longrightarrow 2\text{H}_2\text{O}$            |
| 4. Combination reaction          | - | $\text{NaBr} + \text{AgNO}_3 \longrightarrow \text{AgBr} + \text{NaNO}_3$ |

35. Assertion : In thermite welding, aluminium powder and  $\text{Fe}_2\text{O}_3$  are used.  
 (i) Reason : Aluminium powder is a strong reducing agent.  
 Does the reason satisfy the assertion  
 (ii) Name the process employed for the concentration of oxide ore?
36. (i) Any metal mixed with mercury is called amalgam. Name the amalgam used for dental filling?  
 (ii) Name the metal used in the process of galvanisation?
37. Complete the following.

Formula	IUPAC name
1. _____	Methane
2. $\text{CH}_3\text{CH} = \text{CH}_2$	_____
3. $\text{HC} \equiv \text{CH}$	_____
4. _____	ethanol

38. Fill in the blanks  
 (a) Force = mass x acceleration, then Momentum = \_\_\_\_\_  
 (b) Liquid hydrogen is for rocket, then \_\_\_\_\_ for MRI
39. Spot the error in the given statements.  
 (a) Two equal and opposite forces whose lines of action coincide are said to constitute a moment in mechanics.  
 (b) One newton is the force that produces an acceleration of  $1\text{ms}^{-2}$  in an object of 1 gram mass.
40. Match the column A with Column B

A		B
1. Current	-	Volt
2. Electric potential	-	Ohm
3. Resistance	-	Watt
4. Electric power	-	Ampere

41. You are given three resistors of  $10\Omega$ ,  $20\Omega$ ,  $15\Omega$  connected in parallel with a battery of  $2.5V$ , a key, an ammeter and a voltmeter. Draw the circuit diagram showing the correct connections of all the given components.
42. A  $3V$  torch bulb draws a current  $0.6A$ . Calculate the resistance of the bulb when glowing.
43. Fill in the blanks.  
 a) For a motor : a permanent magnet, then for a commercial motor : \_\_\_\_\_  
 b) Focal length of a lens : meter, then power of a lens : \_\_\_\_\_
44. Assertion : A convex mirrors are commonly used as a rear - view mirrors in vehicle.  
 Reason : R convex mirror always gives an real image.  
 (Both A and R are correct, A is correct R iswrong, A is wrong R is correct, BothA and R are wrong)
45. Pick the odd and one out :  
 a) Myopia, Migrane, Hypermetropia, Presbyopia  
 b) Pupil, Iris, Utriculus, Retina

### **SECTION - C**

- Note : (i) Answer any 4 questions by choosing one question from each group.  
 (ii) Each question carries five marks.  
 (iii) Draw diagram wherever necessary.

$$4 \times 5 = 20$$

### **GROUP - A**

46. One of the most fascinating branches in applied embroyology is stem cell culture.  
 (a) What are stem cells.  
 (b) Name the two kinds of stem cells.  
 (c) Explain the two kinds of stem cells.
47. Kala has delivered a baby.  
 (a) Suggest the immunization schedule for the baby in the first six months.  
 (b) What are the diseases that can be cured as per the schedule.

### **GROUP - B**

48. Describe the structure of dicot seed.
49. Classify the following substances :
- (a) Wood, paper, plastic and grasses.
  - (b) Give detailed account on your classification.

### **GROUP - C**

50. (i) Distinguish between atoms and molecules (3)
- (ii) Find the gram molecular mass of carbon di oxide [ where gram atomic mass of (carbon=12 g, oxygen = 16 g) ] (2)
51. (i) Name the enzymes used in the manufacture of ethanol from molasses. (2)
- (ii) What happens when yeast is added to diluted molasses? (2)
- (iii) Write any two evil effects of consuming alcohol. (1)

### **GROUP - D**

52. (a) Explain inertia with an example
- (b) Explain Newton's second law of motion with an example.
53. (a) What is an electric motor?
- (b) What is the principle used in an electric motor?
- (c) List the factors that enhances power of a commercial motor.

- - - - -



**X STANDARD**  
**SCIENCE**  
**Model Question Paper - 3**

Time : 2.30 Hrs.

Marks : 75

**SECTION - A**

**I. Answer all questions :**

15 x 1 = 15

1. Diabetes is treated by the biotechnologically produced \_\_\_\_\_  
( Enzyme, Insulin, Vitamins, Vaccine )
2. Pick out the bacterial disease  
( Brain fever, Rabies, Tetanus, small pox)
3. Which is the female reproductive part of a flower?  
( Calyx, Corolla, Androecium, Gynoecium )
4. In monotropa the special type of root which absorbs nourishment is \_\_\_\_\_  
( Haustoria, Mycorrhizal root, clinging root, Adventitious root)
5. \_\_\_\_\_ green house gas which causes climate change and global warming.  
( Hydrogen, Oxygen, Nitrogen, Carbon-di-oxide )
6. The value of Avogadro Number is \_\_\_\_\_  
(  $6.023 \times 10^{22}$ ,  $6.023 \times 10^{23}$ ,  $6.023 \times 10^{-24}$ ,  $6.023 \times 10^{24}$  )
7.  $\text{pH} + \text{pOH} = 14$  If the value of pOH of a substance is 3, its pH is \_\_\_\_\_  
( 3, 11, 14, 1 )
8. Any metal mixed with mercury is called \_\_\_\_\_  
( Alloy, Solution, Amalgam, Salt )
9. To design the body of the aircraft \_\_\_\_\_ alloys are used.  
( Iron, Gold, Silver, Aluminium )
10. The functional group of carboxylic acid is \_\_\_\_\_  
( -OH, -CHO, -C = O -COOH )

11. The momentum of a truck at rest is \_\_\_\_\_  
( very large, very small, zero, infinity )
12. Fuse wire is made up of an alloy of  
( Lead and tin, lead and copper, tin and iron, zinc and copper )
13. Voltmeter is used to measure \_\_\_\_\_  
( Potential difference, current, magnetic effect, electrical energy )
14. An electric current through a metallic conductor produces \_\_\_\_\_  
( heat, light, magnetic field, mechanical force)
15. Twinkling of stars is due to \_\_\_\_\_  
( Reflection, dispersion, atmospheric refraction, None of the above )

### SECTION - B

#### II. i. Short Answers :

20 x 2 = 40

#### *ii. Answer any twenty questions.*

16. Match the following deficiency disease with suitable vitamins.

<b>Vitamins</b>	-	<b>Deficiency disease</b>
Vitamin A	-	Scurvy
Vitamin B	-	Rickets
Vitamin C	-	Nyctalopia
Vitamin D	-	Beri - Beri

17. Correct the answer.
- (a) Primitive man evolved in Australia.
- (b) Theory of natural selection was proposed by Lamarck.

18. Copy the diagram and label the given two parts A and B.



A. Seat of smell

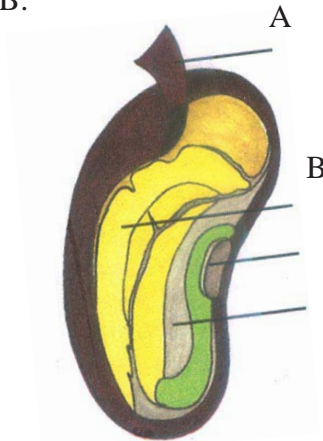
B. Seat of vision

19. Raja's father suffers with diabetic suggest a way to control this problem.

20. Fill in the blanks

The part of the brain which controls emotional reactions in our body is \_\_\_\_\_  
(Thalamus, Hypothalamus)

21. Label the parts A and B.



22. Based on the relationship, fill up. Whale: Baleen plates, Bat : \_\_\_\_\_

23. One of the following groups contains a non mammalian animal. pick up the group.

(a) dolphin, walrus, porcupine, rabbit

(b) Elephant, pig, horse, monkey

(c) deer, cow, buffalo, donkey

(d) dog, cat, crocodile, tiger

24. The blood vessels that carry pure blood from the heart to different parts of the body is \_\_\_\_\_ (Arteries, veins)

25. Assertion (A) : Chemotropism is the movement of plant parts towards the direction of chemicals.  
Reason (R) The roots grow towards soil.  
(1) A is correct R is not giving correct reasoning.  
(2) A is correct R is wrong  
(3) A is wrong R is wrong  
(4) A is relevant and R is correct.
26. (a) Which one of the following is an autotroph. (Plants, Cat, Lion, Fish)  
(b) What are autotrophs?
27. Hydrogen has the highest mass energy content explain.
28. Find the odd one out.  
a. Cold, Dengue fever, Brain fever, Cholera.  
b. Coal, Petroleum, natural gas, solar energy.
29. Which of the following is made from vegetable oil and animals fats.  
Bio alcohol, Bio diesel, Bio gas
30. Match the following
- | <b>Solute - solvent</b> | <b>Examples</b>       |
|-------------------------|-----------------------|
| solid - solid           | milk                  |
| liquid - liquid         | Helium oxygen mixture |
| Gas - Gas               | sugar solutions       |
| solid - liquid          | Alloys                |
31. Solubility of  $\text{KNO}_3$  increases with increase in temperature but the solubility of  $\text{Ca}_o$  decreases with increase in temperature. Give reasons.
32. Calculate the number of moles in  $24.092 \times 10^{22}$  molecules of water.
33. Powdered calcium carbonate reacts more readily with hydrochloric acid than marble chips. Give reason.

34. Analyse the table and fill up the blanks

Indicator	Colour in Acid	Colour in Base
Litmus	_____	Red
Phenolphthalein	Colourless	_____

35. Assertion (A) : Greenish layer appears on copper vessels if left uncleaned.

Reason (R) It is due to the formation of a layer of basic copper carbonate.

(i) A and R are correct and relevant to each other.

(ii) A is true but R is not relevant to A.

36. (i) Iron becomes inert when dipped in conc.  $\text{HNO}_3$ . Justify your answer.

(ii) What is the percentage of impurities present in blister copper?

37. An organic compound (A) is widely used as a preservative in pickles and has a molecular formula  $\text{C}_2\text{H}_4\text{O}_2$ . This compound reacts with ethanol to form a sweet smelling compound B)

(i) Identify the compound A and B

(ii) Name the process and write corresponding chemical equations.

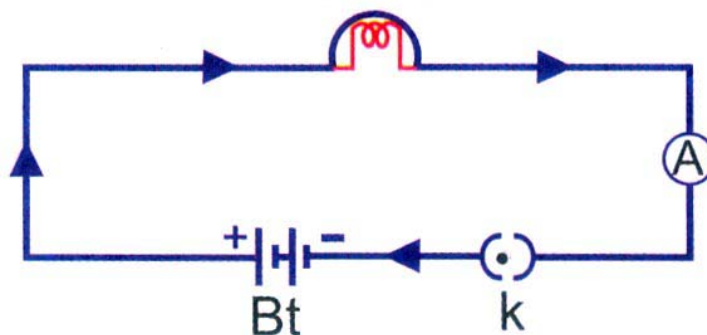
38. Correct the mistakes if any in the following statements.

(a) One newton is the force that produces an acceleration of  $1\text{ms}^{-2}$  in an object of 1 gram mass.

(b) The physical quantity which is equal to the rate of change of momentum is impulse.

39. The important use of cryogenics is cryogenic fuels. What do you mean by cryogenic fuels.

40. An electric circuit is given below copy and label the parts A, K, Bt



41. Three resistances having the values 5, 10, 30 ohms are connected parallel with each other. Calculate the total circuit resistance.

42. Match the column A with Column B

<b>A</b>	<b>B</b>
<b>Energy Sources</b>	<b>Examples</b>
fossil fuel	cow dung
Hydro electric power	Heat
Bio Mass	Coal
Thermal electric power	water

43. We see rainbow in the sky sometimes after the rain.

(a) What is a spectrum.

(b) Write the sequence of colours in a spectrum.

44. Fill in the blanks.

a) If for myopia concave lens, then, what is for hyper metropia \_\_\_\_\_ lens.

b) The focal length of lens is  $f(m)$ . Then the power of the lens is \_\_\_\_\_

45. Assertion (A) In traffic signals, red colour light is used to stop vehicles.

Reason (R) = Because red light is having shorter wave length.

( Both A and R are correct, Both A and R are wrong, A is correct R is wrong, A is wrong R is correct)

### **SECTION - C**

Note : (i) Answer any 4 questions by choosing one question from each group.

(ii) Each question carries five marks.

(iii) Draw diagram wherever necessary.

4 x 5 = 20

### **GROUP - A**

46. Human evolution has a record of changes for the past 15 million years.
- (a) Name the different species of mankind in chronological order from primitive to modern man.
  - (b) When were the primitive caves developed.
  - (c) Narrate the life led by early man like hominids.
47. There is a widespread outbreak of malaria in your area?
- (a) Suggest some controlling measures to the local authorities concerned.
  - (b) Pick out the right symptom for malaria  
(Chill and shiver and a rise in temperature / diarrhoea)

### **GROUP - B**

48. Compare aggregate fruit with multiple fruit with suitable examples.
49. Somke, smoke, everywhere smoke.
- (a) Do you agree this situation is good for health.
  - (b) List out the harmful effects of coal burning.

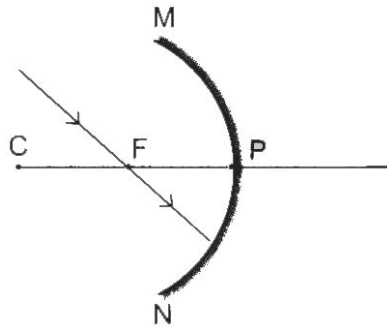
### **GROUP - C**

50. (i) Write down any three postulates of modern atomic theory. (3)
- (ii) Write any two applications of Avogadro's Law (2)
51. (i) Homologous series predict the properties of the members of hydrocarbon. Justify, this statement through any three characteristics. (3)
- (ii) Give the IUPAC name of the following (2)
- (a) formaldehyde (b) Acetone

### **GROUP - D**

52. (a) Explain Newton's first law of motion with a suitable example.
- (b) Mir and ISS space stations have various issues that limit their long - term habitability. Justify it.

53. The ray diagram shown below is introduced to show how a concave mirror forms an image of an object.



- a. Identify the mistake and draw the correct ray diagram.
  - b. Write the justification for your corrections.
- (ii) Names the parts of human eye considering the following.
- a. Dark muscular diaphragm that control the pupil.
  - b. The screen at where the image is formed by eye lens.



# X STANDARD SCIENCE

## Model Question Paper - 4

Time : 2.30 Hrs.

Marks : 75

### SECTION - A

**I. Answer all questions :**

15 x 1 = 15

1. Theory of natural selection was proposed by \_\_\_\_\_  
( Charles Darwin, Hugo-de-vries,  
Gregor Johann Mendel, Jean Baptise Lamarck )
2. The most serious form of malaria is caused by Plasmodium \_\_\_\_\_  
( P.Ovale, P.Malariae, P.falciparum, P.Vivax )
3. If a water soaked seed is pressed, a small drop of water comes out through \_\_\_\_\_  
( Stomata, Lenticel, micropyle, radicle )
4. The roots of coconut tree are seen away from the plant.  
Such kind of movement of root for want of water is \_\_\_\_\_  
( Phototropism, Geotropism, chemo tropism, Hydrotropism )
5. \_\_\_\_\_ is the chief component of Coal.  
( sulphur, Carbon, Hydrogen, Nitrogen )
6. If carbon disulphide is a solvent in a given solution, then the solution is \_\_\_\_\_  
( Aqueous solution, Non-aqueous solution,  
Standard solution, True solution )
7.  $\text{Zn} + 2\text{HCl} \longrightarrow \text{ZnCl}_2 + \text{H}_2 \uparrow$   
The above reaction is an example of  
( Combination reaction, Double displacement reaction,  
Displacement reaction, Decomposition reaction )
8. A process employed for the concentration of sulphide ore is \_\_\_\_\_  
( Gravity separation, Froth floatation,  
Magnetic separation, Chemical method )

9. Modern periodic law states that the physical and chemical properties of elements are the periodic function of their \_\_\_\_\_  
( atomic weight, mass number, atomic number, neutron number )
10. IUPAC name of first member of alkyne is \_\_\_\_\_  
( methane, methyne, ethene, ethyne )
11. The weight of 50 Kg person at the surface of earth is \_\_\_\_\_  
( 50 N, 35 N, 380 N, 490 N )
12. The potential difference required to pass a current 0.2 A in a wire of resistance 20 ohm is \_\_\_\_\_  
( 100 V, 40 V, 0.1 V, 4V )
13. Fuse is a piece of wire made of an alloy \_\_\_\_\_  
( 63% lead 37% tin, 37% lead 63% tin, 65% lead 35% tin, 35% lead 65% tin )
14. The focal length of a concave lens is 2.m then the power of the lens is \_\_\_\_\_  
( 0.2D, -0.2D, 0.5 D, -0.5D )
15. The magnification produced by a mirror is 1/3, then the type of mirror is \_\_\_\_\_  
( Concave, Convex, Plane, all the above )

### SECTION - B

#### II. i. Short Answers :

20 x 2 = 40

#### *ii. Answer any twenty questions.*

16. Match the followings.
 

a) Garden Pea plant	-	Dolly
b) Mono hybrid cross	-	Vaccine
c) Edward Jenner	-	3 : 1
d) Dr. Ian Wilmut	-	Pisum sativum
17. You suspect that your friend is suffering from Amoebic dysentery. What are the questions you will ask your friend to confirm the disease.



22. Spot the error in the given statement and correct it.

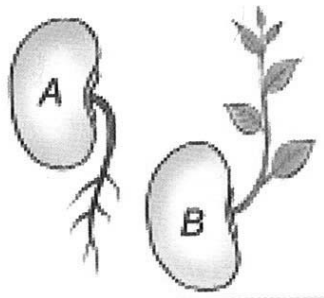
The closure of auriculo ventricular valve of the heart produce “dubb” sound, opening of such valve produce “lubb” sound.

23. Fill up the blanks

a) The heart beat of a normal human is \_\_\_\_\_ times in a minute. (62, 72)

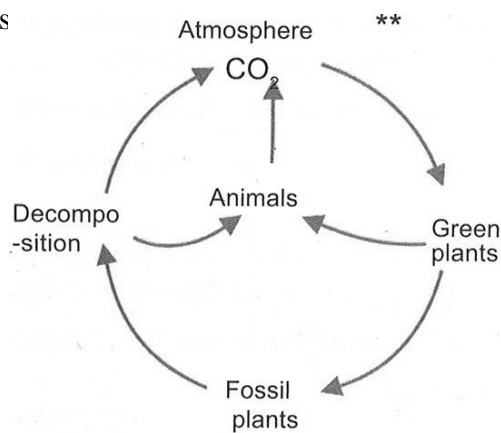
b) \_\_\_\_\_ are the only mammals capable of powered flight. (Bat, Kangaroo)

24. Observe the diagram given below.



- a) Mention the type of movements shown in figure A and B.  
b) How does the movement differ from the movement of mimosa.

25. Answer the followings



- a) Name the processes noted as No.1 and 3.  
b) Define the process 1.

26. A non renewable resource is a natural resource. If it is replaced by natural process at a rate comparable or faster than its rate of consumption by humans.

Read this statement and confirm whether it is correct, or incorrect. If it is incorrect give correct statement.

27. “Stagnation of waste water from residential house and industries causes variety of communicable diseases”.

Arise questions related to the above statement.

28. a) Which is a non-renewable resource?  
(Coal, petroleum, natural gas, all the above)
- b) \_\_\_\_\_ is the Chief component of natural gas.  
(ethane, methane, propane, butane)
29. In order to transport substances from one part of the body to the other, the circulatory system has evolved.
- a) who discovered the circulation of Blood in man?
- b) How many chambers are there in the human heart?
30. You have prepared a saturated solution of sugar at a given temperature. Is it possible to dissolve some more grams of sugar to this solution at the same temperature. Give reason.
31. Match the solution with examples.
- |                 |   |        |
|-----------------|---|--------|
| Solid in solid  | - | cloud  |
| Solid in gas    | - | Cheese |
| Liquid in gas   | - | Alloys |
| liquid in Solid | - | Smoke  |
32. One mole of any substance contains  $6.023 \times 10^{23}$  particles. If  $3.0115 \times 10^{23}$  particles are present in  $\text{CO}_2$  Find the number of moles.
33. The hydroxyl ion concentration of a solution is  $1.0 \times 10^{-4}\text{M}$ . Find the pH of the solution.
34. Identify the colour of the precipitate :
- a) When aqueous solution of silver nitrate and sodium chloride are mixed.
- b) Name the acid present in curd.
35. "Electrolytic refining method is used to purify copper". – Raise the questions related to the above statement.

36. Give below is the diagram of electrolytic refining of Aluminium. Redraw it and lable the parts given below.

(Graphite rods, Electrolyte, Refined aluminium)

37. Denaturation of ethyl alcohol makes it unfit for drinking purposes. – Reason out.

38. Fill in the blanks.

- a) Force = mass x acceleration then momentum = \_\_\_\_\_
- b) Liquid hydrogen is for rocket, then \_\_\_\_\_ for MRI.

39. Correct the mistakes, if any, in the following statements.

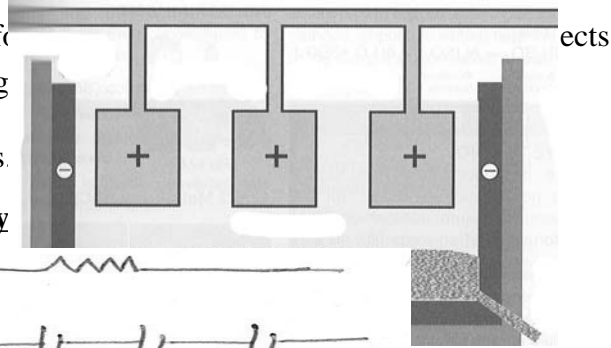
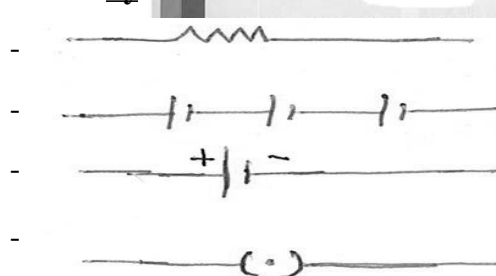
- a) Mass is measured using spring balance and weight is measured using physical balance.
- b) In the absence of external balanced force, mass remains unchanged or conserved during \_\_\_\_\_

40. Match the components and its symbols.

**Components**

- a) An electrical cell
- b) Closed plug key
- c) A resistor
- d) A battery

**Symbols**

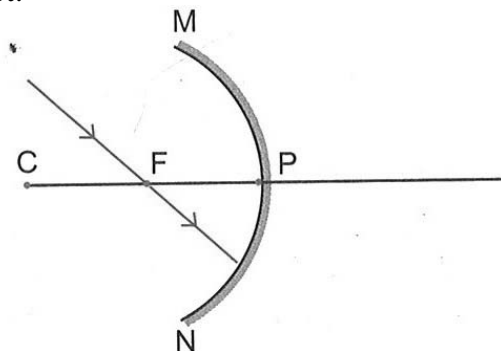


41. Three resistances having the values  $5\Omega$  ,  $10\Omega$  ,  $30\Omega$  are connected parallel with each other. Calculate the total circuit resistance.

42. In volta cell the anode is \_\_\_\_\_ (Iron / Copper) and in Lechlanche cell the cathode is \_\_\_\_\_. (Zinc / Copper)

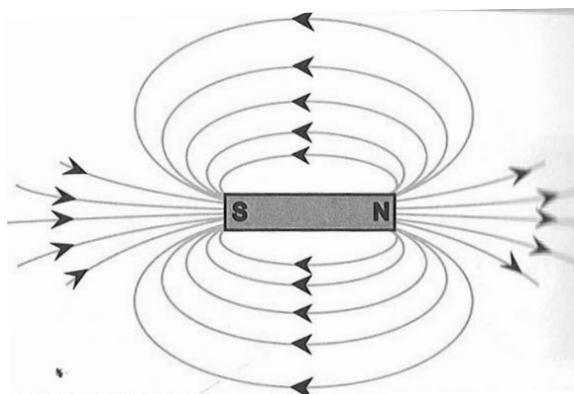
43. In traffic signals Red colour light is used to stop vehicles. Give reason.

44. The ray diagram shown below is introduced to show how a concave mirror forms an image of an object.



- a) identify the mistake and draw the correct ray diagram.  
b) write your justifications for your corrections.

45.



- a) The above diagram represents \_\_\_\_\_  
b) Mention any one property of the above.

### SECTION - C

- Note :
- (i) Answer any 4 questions by choosing one question from each group.
  - (ii) Each question carries five marks.
  - (iii) Draw diagram wherever necessary.

4 x 5 = 20

### GROUP - A

46. a) Write the uses of Bio-sensor and Bio-chips.  
b) Write about science today-Gene therapy.

47. Describe the life cycle of malarial parasite - plasmodium.

**GROUP - B**

48. (a) Fruit is the product of fertilization. Is there any fruit is formed without the act of fertilization.

b) Represent the classification of fruits in a diagrammatic sketch.

49. a) In your area there is scarcity of water due to this the people are affected. So what are the measures to be taken by you to meet out the scarcity of water.

b) What is food chain?

**GROUP - C**

50. a) Define relative Atomic Mass (Based on carbon scale) (2)

b) Define – Mole (2)

c) What is the atomicity of oxygen (1)

51. a) What is the Functional group of alcohol? (1)

b) Write the Esterification reaction. (2)

c) Write any two uses of Ethanol . (2)

**GROUP - D**

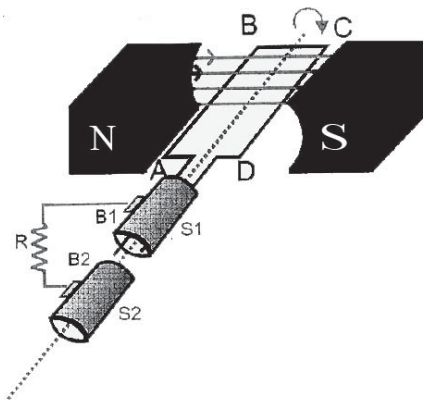
52. a)  $F = \frac{G m_1 m_2}{d^2}$  is the mathematical form of Newtons' law of gravitation.

Give the statement of Newton's law of gravitation.

b) Chandrayaan achieved 95% of its planned objectives. Justify it.



53.



- Redraw the above diagram.
- This diagram represents \_\_\_\_\_
- Label the parts of the diagram.
- Write the principles of the name of the device denoted by this diagram.
- Show the method of finding direction of current in this device.