Office of the DDPI, Bangalore (South) , Kalasipalya Bangalore -02

Class: 10thstd SUB: Science Model Paper TIME:3.15Hr Marks : 80

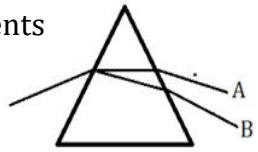
Sub: Physics (Part-A) Marks:27

I)Four alternatives are given for each statement. Choose the correct answer and write it along with its alphabet : **(1 × 3 = 3)**

1.The reciprocal of focal length is called _____

a. refractive index b. power of lens c. radius of curvature d. centre of curvature

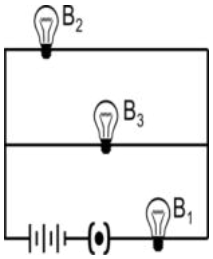
2. Observe the Dispersion of light in a figure what colour does a and b represents



a. Red and violet b. Violet and red

c. Red and Green d. Violet and green

3.Which bulb in the circuit should be removed so that all the circuit does not glow?



a.B1 b.B2 c.B3 d.B4

II) Answer the following question: (1 × 2 = 2)

4. Red colour reflectors are used in highway roads or behind vehicles. Why?

5. The fuse wire in a circuit is always connected in series. Why?

III) Answer the following question: (2 × 2 = 4)

6. Write any two differences between concave mirror and convex mirror.

7. Define refractive index. The refractive index of A B and C medium are 1.50, 1.36, 1.77 respectively. In which medium speed of light is maximum, justify your answer.

IV) Answer the following question: (3 × 3 = 9)

8. Draw a diagram when an object is placed at 2 F_1 in front of a convex lens and explain the nature of image.

9.a)What is meant by electric resistance? Mention factors on which resistance depends on.

b)State Ohm's law.

10. Explain the functions of the following parts of human eye a)Pupil b)Iris c)retina

[OR]

What is meant by myopia? Explain the causes for myopia.

V) Answer the following question (4 × 1 = 4)

11. In a residence, five bulbs of 40 watt each are switch on for 4 hours per day. An electric water heater 1.5 kilowatt is switched on for 2 hours per day. Calculate the cost of consumption of electricity in a month of September.**(1KWh =7 Rs)**

[OR]

A resistor of 4 ohms produces heat energy of 400 J per second. Calculate

a) current flowing b) potential difference c) electric power

V) Answer the following question **(5 × 1 = 5)**

12. a) Explain an experiment to show that current carrying conductor experience a mechanical force when placed in a magnetic field

b) Name the device which uses of this principle.

c) What is solenoid? Write its uses.

Sub: Chemistry(Part-B) **Marks:25**

VI)Four alternatives are given for each statement. Choose the correct answer and write it along with its alphabet : **(1 × 2 = 2)**

13. In the following chemical reaction which substance is reduced

$CuO + H_2 \longrightarrow Cu + H_2O$

a. CuO b. Cu c. H_2O d. H_2

14.The salt which is used as antacid is _____

a. Na_2CO_3 b. $CaCOCl_2$ c. $NaHCO_3$ d. $CaSO_4 .H_2O$

VII)Answer the following question: **(1 × 4 = 4)**

15. What are homologous series?

16. Chips packets are flush with Nitrogen gas. Why?

17. The metals high up in the reactivity series cannot be obtained from their compounds by heating with carbon . Why?

18. Light a Bunsen burner and adjust the air hole at the base to get different types of flames are presence of smoke. When do you get yellow sooty flame?

VIII) Answer the following question: **(2 × 3 = 6)**

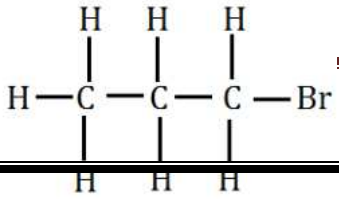
19. Draw a neat diagram showing HCl acid solution in water conducts electricity.

20. Draw a neat diagram showing electric refining of copper

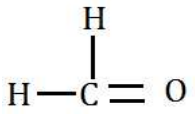
21. The molecule of ammonia has the formula NH_3 .Draw the electric dot structure for this formula showing all four atoms achieve noble gas configuration.

[OR]

How would you name the following compound.



a)

b) 

IX) Answer the following question: **(3 × 3 = 9)**

22.What are the three types of chemical decomposition reaction. Give one example for each.

23.Samples of zinc, iron, magnesium and copper are taken in a test tube A, B, C and D respectively, when we add same amount of a ferrous sulphate to each test tube in which test tubes will you observe the reaction and why give me the chemical reaction that takes place

24. The four solutions A, B, C and D shows pH 2, 8, 7 and 14 respectively,

a) Name the solution which has eye hydrogen ion concentration..

b) Name the neutral solution.

c) Name the strong base.

X) Answer the following question: **(4 × 1 = 4)**

25. a)Explain the mechanism of the cleaning action of soap.

b)How can ethanol and Ethanoic acid be differentiated on the basis of their physical properties?

Sub: Biology (Part-C) **Marks:28**

XI)Four alternatives are given for each statement. Choose the correct answer and write it along with its alphabet : **(1 × 3 = 3)**

26. The functional unit of Kidneys are _____

a. nephron b. uretor c. urethra d. urinary bladder

27. Law of hereditary proposed by _____

a. Mendel b. Aristotle c. Darwin d. none of the above

28. Under the below tropics which one can formal food chain

a. grass wheat and mango b. grass tree and man

c. goat cow and elephant d. grass fish and goat

X II) Answer the following question: **(1 × 2 = 2)**

29. What is reflection?

30. Define budding

X III) Answer the following question: **(2 × 3 = 6)**

31. Write the different types of traffic moments in plants [OR]

Write the different excretory process in plants

32. What is biomagnifications write any one of its effect on environment

33. Write the need labelled diagram of germination of pollen on stigma

XIV) Answer the following question: **(3 × 3 = 9)**

34. Write the role of chemical enzymes in the human digestive system.

[OR}

Explain the structure and functions of nephron.

35. What is a sexual reproduction write different types of asexual reproduction

36. Higher order animals need more Oxygen and energy how human heart structurally helps in supplying more Oxygen and energy.

[OR]

Why do oxygenated and deoxygenated blood to be separated especially in mammals

XV) Answer the following question: **(4 × 2 = 8)**

37. a. Differentiate between self pollination and cross pollination

b. How is the sex of the child determined in human beings?

38. Draw a neat diagram of cross section of human brain and label the following parts

a)Ponds b)Cerebellum.

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Class: 10th std SUB: Science Model Paper TIME:3.15Hr Marks : 80

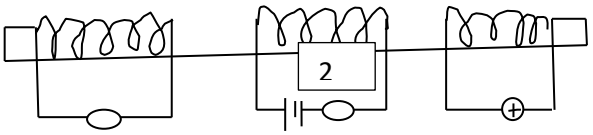
PART- A PHYSICS

I. Multiple Choice Questions:

1) SI Unit of electric Power **1**
   a) Volt b) Watt
   C) Ohm d) Coulomb
2) The position of the object to be placed infront of convex lens, to get image equal to the size of an object **1**
   a) $2F_2$ b) F_2 c) $2F_1$ d) F_1

II. Very short answer.

3) Define magnetic field.
4) Draw the symbol for following $\frac{1}{2}+\frac{1}{2}$
   a) Rheostat
   b) Wire joint
5) Define Ohm's law. **2**
6) Draw a diagram to show the magnetic lines of forces around a straight current carrying conductor **2**
7) Define accommodation of eye? **2**
   OR
   Describe the formation of a rainbow.
8) **3**



   Observe the circuit which coil would have high induced electricity, when the plug key is connected in the coil 2? Give your reason.
9) the radius of curvature of a rear view mirror used in a vehicle is 3.00 m, what is the position of the image, if the bus is at 5.00 m from the mirror, what is the distance, nature and size of image? **3**
   OR
   The focal length 15 cm of a concave lens , an image is formed at 10cm. find the distance of the object from the lens? Calculate the magnification of the object
10) What is Myopia? How do you correct the myopia. justify **4**
11) a) Define joules Law of heating **4**
    b) Explain the working of fuse in an electric circuit

OR

a) Mention the factors of that resistance of a conductor depends
b) How is parallel connection advantageous over Series connection?

12) What is refraction of light ? state the laws of refraction **4**

PART -B CHEMISTRY

FOUR ALTERNATIVES ARE GIVEN FOR THE FOLLOWING QUESTION.CHOOSE THE CORRECT ONE AND ANSWER **1x3=3**

13) The metal which displaces copper from copper sulphate solution

A) Mercury B) Iron C) Gold D) Silver

14) $2FeSO_4$ -------→ $Fe_2O_3 + SO_2 + SO_3$

The above chemical reaction is example for

A) Chemical combination

B) Chemical displacement

C) chemical double displacement

D) chemical decomposition

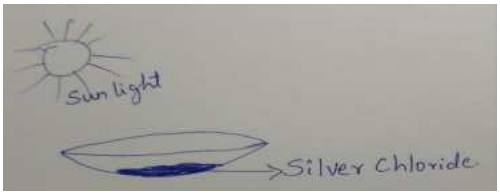
15) reason for using baking soda in the preparation of bread and cake

A) It releases CO_2 to and makes bread and cake Puffy

B) It releases H_2 and makes bread and cake Puffy

C) It releases H_2O and makes bread and cake Puffy

D) It releases HNO_3 and makes bread and cake Puffy



Answer the following questions in one sentence each **1x3=3**

16) Identify unsaturated carbon compounds among the following.

Butane, Ethene, Methane, Propyne.

17) Why the boiling point and melting point of common salt is high?

18) In the above diagram why silver chloride changes its colour?

Answer the following questions in 2 to 3 sentences each **2x3=6**

19) Draw a neat diagram of electrolysis of copper and label *anode mud*

20) Translate the following statements into chemical equation and balance them.

a) Copper reacts with oxygen and forms copper oxide.
b) Sodium sulphate reacts with Barium Chloride and forms Barium sulphate and sodium chloride.

21) Draw a neat labelled diagram of reaction of Zinc granule with dilute sulphuric acid and testing of hydrogen gas and label *zinc granule*

Answer the following questions **3x3=9**

22) Give scientific reason for the following.

a) While diluting the acid, acid should be added to water.
b) We have to store plaster of paris in air tight container.
c) Antacid is used to treat indigestion.

23) You have given potassium, calcium and copper metal.How do they react with water? Explain.

OR

i Explain the extraction of Mercury from cinnabar

ii Write any one difference between calcination and roasting

24) Define the following

Esterification, Additional reaction, Substitution reaction

OR

What are structural isomers? Write the molecular formula and structure of the first member of alkane which shows structural isomerism.

Answer the following questions **1x4=4**

25) Write the electron dot structure of the following carbon compounds.

Methane, Ethene, Propyne, Carbon di oxide

PART – C BIOLOGY

XII. Four options are given for the following questions or incomplete statements. Choose the most appropriate answer among them & write. **3x1 = 3**

26. The place from which the pyruvate decomposes and the water is released

(a) Mitochondria (b) Cytoplasm

(c) Chloroplasts (d) Nucleus

27. A material that is biodegradable and does not harm the environment

(a) Polythene bag (b) Plastic cup

(c) Plastic bag (d) Paper bag

28. The phenotypic ratio of Mendel's dihybrid cross

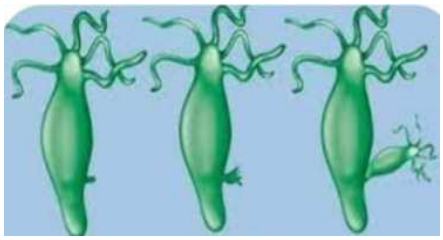
(a) 9:3 (b) 9:3:3: 1

(c) 3:1 (d) 9:1

XIII Answer the following questions in one word or sentence. **3x1 = 3**

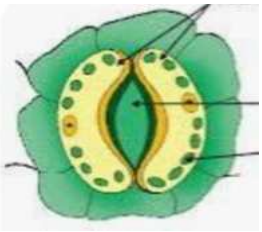
29. Who is called the father of modern genetics?

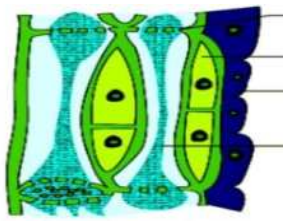
30. What is the type of asexual reproduction seen in the following image?



31. Observe the following pictures and mention which one is helpful

for exchange of gases in leaves?





XIV. **Answer the following questions in two or three sentences. 2x2 =4**

32. How are arteries different from veins?

OR

Why does the heart have different chambers?

33. How do you reuse the leftover waste materials in your home scientifically? Name any two methods.

XV. Answer the following questions. 3x3 = 9

34. a) Why it is necessary to separate oxygenated and deoxygenated blood in mammals and birds?

b) What is the function of salivary amylase in the digestive tract?

OR

Describe the functions of the following parts of the nephron

(a) Glomerulus

(a) Bowman's capsule

(a) The collecting duct

35. Briefly explain monohybrid experiment or describe how Mendel's experiments show characters of dominant and recessive traits.

36. Draw a neat diagram of the human brain and label the following parts. (a) Cerebellum (b) Mid brain

XVI. Answer the following questions. 1x4 = 4

37. Justify the reason why the following are called so.

a) Thyroxine - Personality hormone

b) Pancreas-Mixed gland

c) Adrenaline - Emergency hormone

d) Pituitary-Master gland

XVII. Answer the following questions. **1x5 = 5**

38. (a) What is sexual maturity? How does menstruation occur?

(b) List the physical changes that occur during puberty in boys and girls? Give reasons for those changes.

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Class: 10th std SUB: Science Model Paper TIME:3.15Hr Marks : 80

PART A: PHYSICS (Marks: 27)

I ***Four alternatives are given for each statement. Choose the correct answer and write it along with its alphabet:*** **(1X2=2)**

1. The lens used to correct when a person cannot see distant objects clearly is _____

   (A) Concave lens (B) Convex lens (C) Bifocal lens (D) None of the above

2. A device used to change the resistance in the electric circuit is _____

   (A) Voltmeter (B) Ammeter (C) Galvanometer (D) Rheostat

II ***Answer the following questions :-*** ***(1X2=2)***

3. State Snell's law of refraction

4. A person needs a lens of power -2.5D for correction of her vision. What is the focal length of the corrective lens

III ***Answer the following questions :-*** ***(2X3=6)***

5. a) State Fleming's left hand rule.

   (b) Mention any 2 properties of Magnetic field lines.

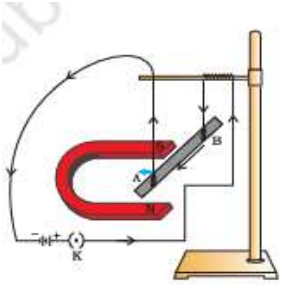
6. (a) What are the functions of the earth wire?

   (b) Why should we connect electrical appliances to earth wire in a domestic circuit?

   OR

   What is fuse? Explain the uses of fuse in a circuit

7. AB is a current carrying rod and using the above set up the force on a current carrying Conductor in a magnetic field is demonstrated. Observe the figure and answer the questions that follow: -



   (a) Name the metal rod.

   (b) When is the displacement of the rod at its largest?

(c) Which rule can be illustrated using the above activity?

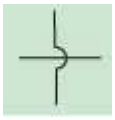
IV Answer the following questions: - ***(3x3=9)***

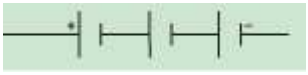
8. Draw the ray diagram of image formation when the object is kept between F, and 2F, of the convex lens with the help of the ray diagram mention the position and the nature of the image formed (F = principal focus of the lens)

9. (a) Explain the formation of rainbow in nature.

(b) Mention the colour that bends the least and the colour that bends the most when light undergoes dispersion through a prism.

10. (a) Recognize the following symbols used in electric circuits

1. 

2. 

(b) According to Joules law of heating, mention the factors on which heat produced in a resistor depends & write the formula used to calculate the heat produced.

V. Answer the following questions :- ***(4x2=8)***

11. (a) "Kerosene is optically denser than water" Justify the statement.

(b) Why do we prefer a Convex mirror as a rear view mirror in vehicles?

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

12. (a) Define potential difference

(b) How is Voltmeter connected in an electric circuit?

(c) Explain the application of heating of electric current in an electric bulb?

Or

(a) Explain the factors on which the resistance of a Conductor depends.

(b) Why is it advantageous to connect electrical devices in parallel instead of connecting them in series?

PART B - CHEMISTRY

VI. Choose the correct alternative and write the complete answer along with its letter of alphabet. **(2x1=2)**

13. Which of the following gas can be used for storage of chips for a long time?

    a. Oxygen b. Carbon dioxide c. Nitrogen d. Hydrogen

14. Dehydrating agent used in the conversion of Ethanol to Ethane is

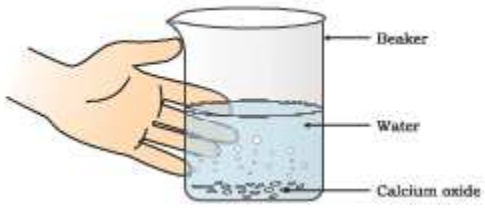
    a. Conc. H_2SO_4
    b. Alkaline $KMnO_4$
    c. Conc. HNO_3
    d. Acidified $K_2Cr_2O_7$

VII. Answer the following questions **(1x1=1)**

15. Write the electron dot structure of Methane

VIII. Answer the following questions **(2 x2 =4)**

16. Observe the above given figure and answer the following questions



    a. What type of chemical change do you observe when touching the Beaker
    b. Name the product formed when calcium oxide reacts with water and write its chemical formula

17. White colour powder is adding to the water tank before it is used for drinking. Write the name of the powder with its chemical formula and why it is added to water before used for drinking?

IX. Answer the following questions **(3X3=9)**

18. Balance the following chemical equations:

    a. $Na + H_2O$ —----- $NaOH$
    b. $AgCl$ —---- $Ag + Cl_2$

c. $Zn + AgNO_3$ —---- $Zn(NO_3)_2 + Ag$

Or

Ferrous sulphate decomposes with the evolution of a gas having a characteristic order of burning sulphur. Write the chemical reaction involved and identify the type of reaction. What is the reason of changing the colour of ferrous sulphate crystals?

19. Write one example of the carbon compound with three carbon atom containing following functional groups

a. Aldehyde

b. Ketone

c. Carboxylic acid

Or

Write any three differences between addition and substitution reaction

20. Draw a diagram of the arrangement of operators to show the action of steam on a metal and label the following parts

a. Delivery tube b. Metal Sample

X. Answer the following questions (1X4=4)

21. a. Write the differences between calcination and roasting

b. Why hydrogen gas is not evolved when a metal reacts with nitric acid?

c. Name two metals which react with dilute nitric acid and release hydrogen gas

XI. Answer the following questions (1X5=5)

22. a. Explain the preparation of plaster of Paris with its balanced chemical equation and write any two uses of it.

b. Write the balanced chemical equation showing the reaction between plaster of Paris and water

c. Why does dry hydrochloric gas not change the color of dry litmus paper?

PART C: BIOLOGY

XII Choose the correct answer from the given four alternatives and write the correct answer along with its alphabet **(4×1=4)**

23 Which one of the following is not the unit of phloem?

(a) companion cells (b) sieve Tubes (c) tracheid's (d) phloem fibres.

24 Identify the animal group which shows fission type reproduction.

(a) Amoeba, Hydra, Spirogyra

(b) Amoeba plasmodium leshmania

(c) Amoeba plasmodium Planaria

(d) Amoeba leshmania yeast

25 No two individuals are alike because of

(a) variations caused due to the recombination of chromosomes

(b) acquired characters

(c) transmutations

(d) all the above

26 Which one of the following is not a natural ecosystem?

(a) forests (b) parks (c)ponds (d)lakes.

XIII **Answer the following questions:** **(5×1=5)**

27 Name the bacterial diseases which spread through sexual contact in human beings?

28 What are bisexual flowers? Give an example

29 Define the term variation

30 Which plant hormone is responsible for ripening of fruits and shedding of leaves.

32 Why the culoidal cups made from clay banned?

XIV **Answer the following questions** **(3×2=6)**

32. Draw the diagram showing germination of pollen on stigma and label the part ovary

33. Write any four damages caused by the depletion of ozone layer.

34. "Father determines the sex of the child"- justify the statement.

OR

Why is the acquired character of an organism not inherited in their offspring's?

XV Answer the following questions: **(3×3=9)**

35. How is glucose broken down in the following situation in the organisms?

(a) In the presence of atmospheric oxygen

(b) In the absence of atmospheric oxygen

(c) Lack of oxygen in muscle cells.

36. How is the small intestine designed to absorb digested food?

OR.

What is respiration? What advantages do the terrestrial organisms have in respiring atmospheric oxygen

37. List out the components of reflex arc and explain with example.

OR.

How auxins influence the development of tendrils around the support?

XVI Answer the following questions: **(1×4=4)**

38. Draw the diagram showing the vertical section of human brain and label the following parts

(1) cerebellum (2) Pons

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Department of school Education, Office of the DDPI, Bangalore (South)

2024 25 DISTRICT MODEL QUESTION PAPER_1 2024-25

Subject: SCIENCE

Duration 3.15 Hrs **[MAX MARKS-80]**

PART-A PHYSICS

I. Four alternatives are given for each of the following questions/ incomplete statements. Only one of them is correct or most appropriate. Choose the correct alternative and write the complete answer along with its letter of alphabet **3 x1 =3**

1) The relationship between current (I), Voltage (V) and resistance (R) is given by

A) V= I×R B) I=V×R C) R= V×I D) V= I/R.

2) The human eye forms the image of an object at its.

A) Cornea B) Iris C) Pupil D) Retina.

3) Strength of an electromagnetic can increased by;

A) Using a thicker wire.

B) Using a stronger power supply.

C) Increasing the number of turns in the coil.

D) Both b and c.

II. Answer the following Questions **2×1=2**

4) Define Principal Focus of Concave Mirror.

5) What is the Range of Vision for a normal Human eye?

III. Answer the following Questions. **2×2=4**

6) How can three Resistors of Resistances 2 ohms, 3 ohms, 6 ohms be connected to give a total Resistance of 1 Ohm.

OR

Show how you would connect three Resistors, each of Resistance 6 Ohms, So that the Combination has total Resistance of 9 Ohms.

7) What is the Function of Earth wire? Why is it Necessary to Earth Metallic Appliances?

OR

What precautions should be taken to avoid the Overloading of Domestic circuits?

IV. Answer the following Questions **3×3= 9**

8) A person with a myopic eye cannot see objects beyond 1.2 m distinctly. What should be the type of the corrective lens used to restore proper vision?

OR

A student has difficulty reading the black board while sitting in the last row what could be the defect the child is suffering from? How can it be corrected?

9) What are the magnetic field lines? Write any two properties of magnetic field lines?

10) Draw the ray diagram to show the image formed by a concave mirror, when the object is placed between C and F. Also, write the Nature, position and Size of the Image formed.

V. Answer the following Questions. 1×4=4.

11) (i) State the Laws of Refraction of Light.

(ii) Why Convex Mirror is used Rear view Mirror in Vehicles.

VI. Answer the following Questions 1×5=5

12) i) An Electric Heater of Resistance 8 Ohms drawn 15 A from the service mains for 2 hours. Calculate the Rate at which Heat is developed in the Heater

ii) What is Electric Fuse, Why is it called a Safety device?

PART-B CHEMISTRY

VII. Four alternatives are given for each of the following questions/ incomplete statements. Only one of them is correct or most appropriate. Choose the correct alternative and write the complete answer along with its letter of alphabet: 2X1=2

13) What type of reaction occurs when magnesium reacts with oxygen to form magnesium oxide?

A) Decomposition reaction
B) Chemical combination reaction
C) Double displacement reaction
D) Displacement reaction

14) Which of the following is the saturated hydrocarbon?

A) Ethane B) Ethene C) Ethyne D) Benzene

VIII. Answer the following questions 4X1=4

15) Oil and fats containing food items are flushed with nitrogen. Why?

16) Name the salt used in soda-acid fire extinguisher?

17) Why hydrogen gas is not evolved when metal reacts with nitric acids?.

18) What is catenation?

IX. Answer the following questions 3X2=6

19) Write the properties of ionic compounds

20) Why is photosynthesis considered as endothermic

21) During the chlor-alkali process, chlorine is produced at one of the electrodes. At which electrodes is chlorine produced and why?.

X. .Answer the following questions 3X3=9

22) Balance the following chemical equations.

(a) $NaOH + H_2SO_4 \rightarrow Na_2SO_4 + H_2O$

(b) $NaCl + AgNO_3 \rightarrow AgCl + NaNO_3$

(c) $BaCl_2 + H_2SO_4 \rightarrow BaSO_4 + HCl$

OR

Translate the following statements into chemical equations and balance them.

(a) Potassium metal reacts with water to give potassium hydroxide and Hydrogen gas.

(b) Hydrogen sulphide gas burns in the air to give water and sulphur dioxide.

23) a) Why does tooth decay starts when the pH of the mouth is lower than 5.5?

b) You have two solutions A and B. The pH of solution A is 4 and pH of solution B is 10. Which solution has more hydrogen ion concentration? Which of this is acid and which one is basic?

24) Draw a neat labelled diagram of action of steam on a metal and label delivery tube. Name the gas evolved during this process.

XI. Answer the following questions 1x4=4

25) (a) Draw an electron dot structure of ethane.

(b) What is hydrogenation called addition reaction?

OR

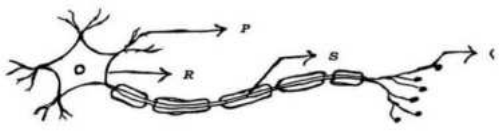
(a) Write the molecular formula and structural formula of first member of ketone group.

(b) A mixture of oxygen and ethyne is burnt for welding. Can you tell why a mixture of ethyne and air is not used?

PART-C BIOLOGY

XII. Four alternatives are given for each of the following questions/ incomplete statements. Only one of them is correct or most appropriate. Choose the correct alternative and write the complete answer along with its letter of alphabet. 3x1=3

26) The correct path of the movement of nerve impulses in the following diagram is



A) Q → S → R → P

B) B) P → Q → R → S

C) S → R → Q → P

D) P → R → S → Q

27) A pure dominant pea plant producing round — yellow seeds is crossed with pure recessive pea plant producing wrinkled — green seeds. The number of plants bearing round — green seeds in the F_1 generation of Mendel's experiment is

A) 0 B) 1 C) 3 D) 9

28) The materials that change slowly their form and structure in the environment are

A) Plant fibers B) Peels of vegetables

C) Waste papers D) Used tea leaves

XIII. Answer the following questions. 2x1=2

29) Observe the given below figures :

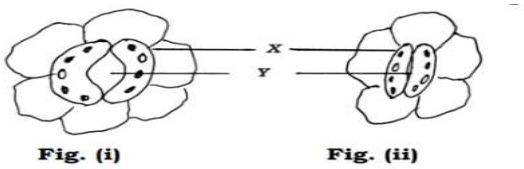


Fig. (i) Fig. (ii)

a) Which figure indicates the massive amount of exchange of gases? Why?

30) What is the role of abscisic acid in plants?

XIV. Answer the following questions. 3x2=6

31) Mention the function of the following glands

a) Thyroid gland

b) Pituitary gland

32) Draw the diagram showing the germination of pollen on stigma and label the part on which pollination takes place.

33) Mention any two effects of ozone depletion.

XV. Answer the following questions. 3x3=9

34) How the functions of arteries, veins and capillaries are interrelated in the circulation of blood?

OR

How does transportation of water take place over the heights in a plant?

35) Explain the significant function of each structure in human male reproductive system.

OR

Explain the structure and important role of placenta during gestation period in the woman.

- Mendel crossed plants bearing red flowers (RR) with the plants bearing white flowers (rr) and produced progeny from them. The plants with red flowers obtained in F_1 generation were different from the plants with red flowers of parental generation. Why? Explain with reasons.

XVI. Answer the following questions. 2x4=8

36) Draw the diagram showing the sectional view of the human heart. Label the following parts.
   a. Aorta
   b. Chamber of heart that receives deoxygenated blood.

37) Define the terms given below
   a) Geotropism
   b) Thigmotropism
   c) Chemotropism
   d) **Hydrotropism**

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Office of the DDPI, Bangalore (South) , Kalasipalya Bangalore -02

Class: 10thstd SUB: Science Model Paper TIME:3.15Hr Marks : 80

SUBJECT: **SCIENCE**

*** Multiple choice questions.** **2 x 1 = 2**

1. Commercial unit of electricity

(a) Watt (b) Kilowatt (c) Kilowatt/hour (d) Ampere

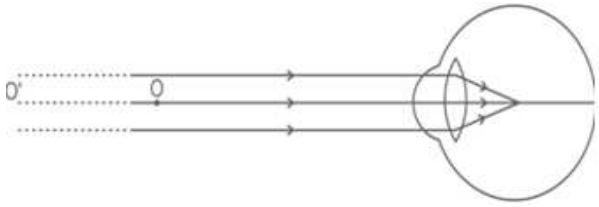
2. Focal length of a spherical mirror is _____times radius of curvature

(a) twice (b) half (c) equal (d) three times

*** Answer the following.** **2 x 1 = 2**

3. State Fleming's left hand rule

4. Identify the defect in the given diagram



*** Answer the following.** **3 x 2 = 6**

5. What is hyper metropia? Which lens is used to rectify this defect ?

6. What are the causes for overload ?

OR

What is the function of earthing wire? In domestic circuits electric appliances with metal body requires earthing wire. Why? Explain.

7. The potential difference across the resistor is V proportionally electric current I varies as following in the table

I	2.0	3.0	4.0
V	1.0	2.0	3.0

Construct V/I graph and calculate the resistance of the conductor

*** Answer the following.** **3 x 3 = 9**

8. Draw a ray diagram to show the image formation in a concave mirror when the object is placed between C and F. Explain the nature size and position of the image

9. Give reason :

(a) Red color lights are used to indicates stop in electric traffic signals

(b) Astronauts in space sees sky black in color but not in blue why?

OR

Sun shines but starts Twinkle why. Justify this statement.

10. (a) Explain the measures to be taken to prevent short circuit in domestic wire.

(b) When you visited your friend's house you have found that earthing is not done. Suggest your friend about earthing and its importance.

*** Answer the following.** **2 x 4 = 8**

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

(b) Write differences between concave and convex lens

12. (a) What are the advantages of parallel connection rather than series connection in electric circuit

(b) How ammeter and voltmeter are connected in an electric circuit and write their functions.

Chemistry

*** Multiple choice questions.** **3 x 1 = 3**

13. The chemical name of quick lime is

(a) Calcium Hydroxide (b) Calcium oxide (c) Calcium carbonate (d) Calcium chloride

14. A non-metal that conduct electricity

(a) Sulphur (b) Phosphorus (c) Iodine (d) Graphite

15. An aqueous solution turns red litmus solution blue excess addition of which of the following solution would reverse the change

(a) Hydrochoric acid (b) Milk of magnesium see

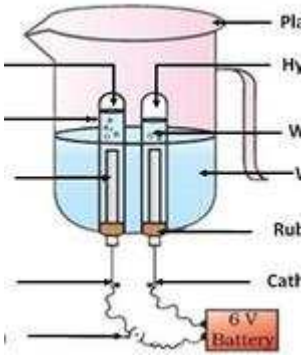
(c) Baking powder (d) Ammonium hydroxide solution

*** Answer the following questions.** **3 x 1 = 3**

16. Write the molecular formula of first two members of homologous series having the functional group -Cl.

17. Write the properties of gold which makes it is suitable metal for making ornaments.

18. In the following figure why is the amount of gas collected at cathode double the gas collected at anode



*** Answer the following questions.** **3 x 2 = 6**

19. Draw any diagram to show the reaction of Zinc with dilute sulphuric acid

20. List the measures to prevent rancidity?

OR

Differentiate between oxidation and reduction

21. Draw a neat labelled diagram of electrolytic refining of copper

*** Answer the following questions.** **3 x 3 = 9**

22. (a) What are structural isomers?

(b) Name the organic compound and also mention to which class of compounds does it belong .

23. Explain the ionic bond formation and magnesium chloride along with its electronic dot structure

OR

Give reasons :

(a) Ionic compounds have high boiling point and melting points.

(b) Ionic compounds conduct electricity in molten state

(c) Silver articles become black when exposed to air.

24. A compound P forms the enamel of teeth. It is the hardest substance of the body. It does not dissolve in water but gets corroded when the pH is lowered below 5.5.

(a) Identify the compound P

(b) How does it undergo damage due to eating chocolates and sweets. What should we do to prevent to decay ?

25. Distinguish between esterification and saponification reaction with the help of chemical equations for each. State one use of each of a) esters b) saponification process

Biology

*** Multiple choice questions.** **3 x 1 = 3**

26. The part of human reproductive system which produce sperms is

(a) Testis (b) Prostate gland (c) Vasdeferens (d) Bladder

27. The energy available for the producer in the given food chain is 50000J. The amount of energy available for the third trophic level is

(a) 50000J (b) 5000 J (c) 500J (d) 5J

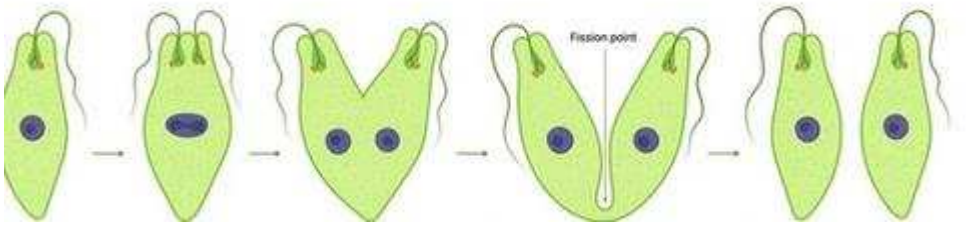
28. Sowmya given birth to a male child. The sex chromosome that the child got from his father

(a) X (b) Y (c) XY (d) YX

*** Answer the following.** **3 x 1 = 3**

29. Draw a neat labelled diagram of open stomata and label guard cell.

30. Identify the given diagram and name the type of reproduction in it.



31. Which part is selected by Mendel for his experiments ?

*** Answer the following.** **2 x 2 = 4**

32. What are the methods used by plans to get rid of their wastes?

33. Explain the formation of Ozone layer along with the equation

*** Answer the following questions.** **3 x 3 = 9**

34. (a) What is mensuration?

(b) Name the different contraceptive methods followed in human being?

OR

(a) What is pollination?

(b) Name the factors which causes pollination

(c) Name the part of a flower which develops into fruit

35. How do Mendel's experiments show that traits are inherited independently?

36. Draw a neat labelled diagram of LS of human brain and label pons and cerebellum

*** Answer the following.** **1 x 4 = 4**

37. (a) The length of a small intestine of X and Y animal are given in the below table. Observe the table and answer the given questions

animals	Approximate length of small intestine
X	20 to 40 feet
Y	5 to 8 feet

Identify the herbivorous and carnivorous and confirm your decision along with scientific reason.

(b) A child who is playing in a dim light afraids by seeing a rope and thinking it as a snake. How the child's by prepare him itself to face this situation. Justify with scientific reason

OR

(a) Anil is a student who grown very taller when compare to his classmates. What is his condition called? Which hormone is responsible for this ?

(b) When Arathi touches a leaf of Touch Me Not plant it started folding its leaves ? Explain with reason for this reaction

*** Answer the following.** **1 x 5 = 5**

38. (a) Explain the different methods production of energy by The breakdown of glucose.
(b) How is small intestine design to observe the digested food ?
(c) What is the role of hydrochloric acid produced in stomach in digestion ?