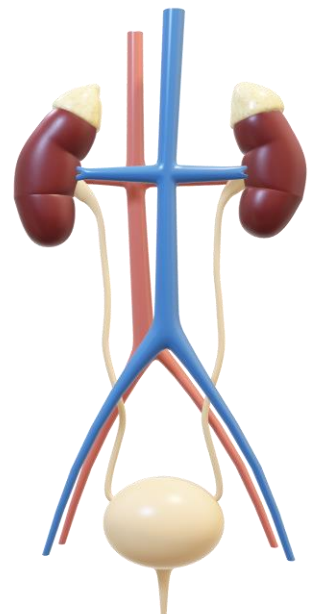
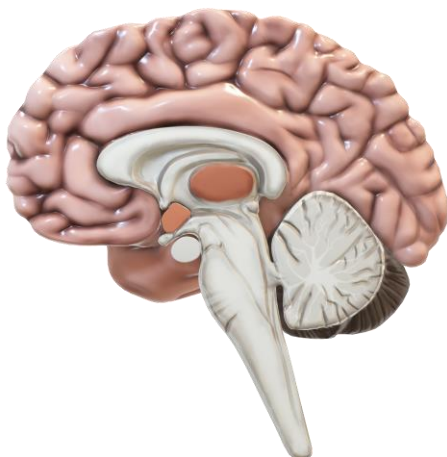
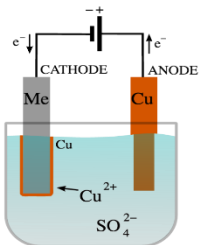


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MODEL PAPERS

10th STANDARD.
SCIENCE (83E)

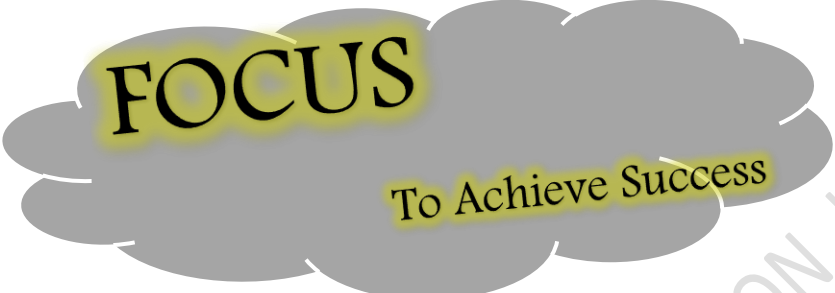
2023 ~ 24



**DEPUTY DIRECTOR ,DEPARTMENT OF SCHOOL EDUCATION,
KOLAR DISTRICT, KOLAR**

10 Standard Model question papers Science(83E)

2023-24

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8	Kolar dist. Mid term exam paper

OFFICE OF THE DEPUTY DIRECTOR ,DEPARTMENT OF SCHOOL EDUCATION

KOLAR DISTRICT,
MODEL QUESTION PAPER – 1 : 2023-24

MAX MARKS : 80

STD : 10

SUB : SCIENCE (83E)

TIME : 3.15 HOUR

PART A : PHYSICS

I. Four alternatives are given for each of the following questions. Choose the correct alternative and write the complete answer along with its letter of alphabet. 4x1=4

1. Reason for filling less reactive gas into bulb is:
 - a) to produce more light
 - b) for giving long life to filament
 - c) to avoid melting of filament at high temperature
 - d) to give more light in low temperature
2. Speed of light is maximum in ?
 - a) glass
 - b) air
 - c) vacuum
 - d) water
3. Maximum refraction of light that enters human eye occur
 - a) in lens
 - b) iris
 - c) pupil
 - d) outer surface of cornea
4. Material used in manufacture of bulb is
 - a) iron
 - b) tungsten
 - c) nichrome
 - d) copper

II. Answer the following questions:

2x1=2

4. Write the principle of an electric motor.
5. Define angle of deviation .

III. Answer the following questions:

2x2=4

6. Draw a ray diagram showing image formed when an object is placed at principle focus in front of a concave mirror.
7. Write the difference between motor and generator ?

OR

Write the difference between AC current and DC current.

IV. Answer the following questions:

3x3=9

8. Give scientific reason for the following :
 - a) Red light is used in danger signal lights .
 - b) Sky appears black for astronaut.
 - c) Light get dispersed in prism
9. Draw the diagram of electric motor and label the given parts. a) Split rings b) Carbon brushes
10. Write three measures taken to get maximum heat in designing solar cooker

OR

Explain the working of a biogas plant?

V. Answer the following questions :

4x1=4

11. a) A 2cm tall object is placed perpendicular to the principle axis of a convex lens of focal length 10cm. The distance of the object from the lens is 15cm. Find the nature position and size of image. Also find its magnification. Name the factors that influence the refractive index

VI. Answer the following questions :

5x1=5

13. a) An electric lamp having resistance of 2 ohm and a conductor having resistance of 1 ohm. These two are connected to a 6v battery, Calculate the
 - i) total resistance of circuit
 - ii) current through the circuit
 - iii) potential difference across the electric lamp conductor
 - iv) power of bulb
- b) Electric fan and Electric stove can be connected in series circuit ? Give suitable reason for your answer.

Part B Chemistry

VII. Four alternatives are given for each of the following questions. Choose the correct alternative and write the complete answer along with its letter of alphabet. **2x1=2**

14. If an element X has 2 shells and 3 valence electrons, then it belongs to

- a. 2nd period, 3rd group b. 2nd group, 3rd period
c. 14th group, 3rd period d. 2nd period, 14th group

15. The electrolytic decomposition of water gives H₂ and O₂ in the ratio of

- (a) 1 : 2 by volume (b) 2 : 1 by volume (c) 8 : 1 by mass (d) 1 : 2 by mass

VIII. Answer the following questions .

4x1=4

16. Write two uses of NaOH.

17. Aluminium oxide is called amphoteric oxide. Give reason.

18. Write the structure of Iso Butane.

19. Define catenation.

IX. Answer the following questions.

3x2=6

20. Observe the table.

Elements	A	B	C	D
Atomic number	3	5	9	12

Identify the element with smallest atomic radius. Why?

21. Differentiate roasting and calcination.

OR

Give reasons. i) Gold is used to make jewellery. ii) Graphite rods are used as electrodes.

22. Write two differences between saturated and unsaturated hydrocarbon.

X. Answer the following questions.

3x3=9

23. Write a balanced chemical equation for the following.

- i. Reaction of sodium sulphate and Barium chloride solution.
- ii. Decomposition of Silver chloride using sunlight.
- iii. Burning of natural gas.

24. Draw a diagram showing action of steam on metals. Label (i) Burner (ii) Hydrogen gas

25. i. Write the electron dot structure of Ethane molecule.

ii. Write the chemical equation for reaction of Sodium with Ethanol.

iii. Write the structural formula of a hydrocarbon having 3 Carbon atoms and 8 Hydrogen atoms.

OR

Write the molecular formula and name of the first 3 members having COOH functional groups. .

XI. Answer the following questions.

1x4=4

26. i. What happens when metallic oxide combines with acids?

ii. What is the nature of non metallic oxides?

iii. Write the names of the product formed when zinc reacts with NaOH and write the balanced chemical equation.

PART C : BIOLOGY

XII. Four alternatives are given for each of the following questions. Choose the correct alternative and write the complete answer along with its letter of alphabet. $2 \times 1 = 2$

27. The reason for long small intestine in herbivore is

- a) to digest the cellulose
b) plant-based food are highly nutritious
c) to provide support to body
d) for easy passage of food

28. One of the following characters can be obtained but not inherited.

- a) skin color b) Body size c) eye color d) texture of hair

XIII. Answer the following questions:

$2 \times 1 = 2$

29. Why does an athlete experience muscle cramps while running?

30. What are fossils?

XIV. Answer the following questions :

$3 \times 2 = 6$

31. What are biodegradable and non-biodegradable substances? Give two examples for each.

32. Explain with an example that sometimes variations are necessary for survival of organisms.

33. Observe the plant in the pot. Answer the given question.

- a. Name the tropism shown by the stem in the picture.
b. Which plant hormone is responsible for this movement?



XV. Answer the following questions:

$3 \times 3 = 9$

34. Compare the nervous and hormonal mechanisms for control and coordination in animals

35. Mention the function of the following parts of male reproductive system. .

- a) Testes b) Scrotum c) Prostrate gland

-OR-

Explain briefly 3 methods of contraception.

36. Environmentalists protested to increase the height of ‘Sardar Sarovar’ dam across Narmada river.

What could be the reasons for this?

XVI. Answer the following questions.

$2 \times 4 = 8$

37. Draw a neat diagram showing sectional view of the human heart and label following parts

- A) pulmonary arteries B) Pulmonary veins C) Venacava from upper body D) septum

38. In a Mendel’s experiment ,round seeded tall plant (TTRR) and wrinkled seeded dwarf plant (ttrr) are pollinated. The offsprings of F₁ generation were self pollinated. Find the phenotypic ratio in F₂ generation using checker board.

OR

- a. What is speciation? What are the factors responsible for it?
b. Birds are closely related to reptiles. Justify the statement.

OFFICE OF THE DD, DEPARTMENT OF SCHOOL EDUCATION KOLAR DISTRICT,

MODEL QUESTION PAPER – 2 : 2023-24

MAX MARKS : 80

STD : 10

SUB : SCIENCE (83E)

TIME : 3.15 HOUR

PART A : PHYSICS

IV. Four alternatives are given for each of the following questions. Choose the correct alternative and write the complete answer along with its letter of alphabet. 4x1=4

1. Work done when 2 Coulombs of electric charge moves across potential difference of 15V is :

- a) 17 J b) 13J c) 7.5 J d) 30 J

2. Formula used to find power of lens is :

- a) $1/v + 1/u$ b) $1/f$ c) $1/v + 1/u$ d) $1/v - 1/u$

3. When a White colour light passes through prism, Which colour bends minimum and maximum

- a) Violet -red b) violet -blue c) red – violet d) blue -green

4. Medium that shows the Tyndal effect is

- a) sugar solution b) smaller particles in air c) larger particles in air d) salt solution

V. Answer the following questions: 2x1=2

5. Why aluminium and copper is used as electrical wires ?

6. When is the force experienced by a current carrying conductor placed in a largest magnetic field?

VI. Answer the following questions: 2x2=6

7. Draw a ray diagram showing image formed when an object is at infinity focus in front of a convex lens.

8. State Fleming's Right-hand rule.

-OR-

When does an electric short circuit occur?

IV. Answer the following questions: 3x3=9

9. Focal length of a convex lens is 20 cm, at 15 cm image is formed. Find out the distance of the object? Find the Magnification.

OR

a) Radius of curvature of a mirror is 20 cm, find the focal length of mirror.

b) Find the power of lens having focal length 10cm. write the type of lens

10. Draw the diagram of electric generator and label the given parts.

- a) Slip rings b) Carbon brushes

11.a) What is meant by the power of accommodation of eye

b) What is the role of ciliary muscles in power of accommodation of eye?

-OR-

a) Define least distance of distinct vision and far point of the eye.

b) write the near point and farthest point of eye

V. Answer the following questions : 4x1=4

12. a) A ray of light travelling in the air enters obliquely into water. Towards which side the light bends? Give suitable reason for your answer.

b) Light enters from air into benzene having refractive index 1.5. What is the speed of light in benzene. The speed of light in vacuum is 3×10^8 m/s

VI. Answer the following questions :

5x1=5

13. Five bulbs of 40W each are connected in series in an electrical circuit
- Will the bulbs glow in the same brightness. Justify your answer.
 - When one bulb gets fused, what happens to the circuit? Will other bulbs glow?
 - To overcome this problem how should the bulbs be connected.
 - How electrical gadgets are connected in domestic circuits.

Part B (Chemistry)**VII. Four alternatives are given for each of the following questions. Choose the correct alternative and write the complete answer along with its letter of alphabet.**

2x1=2

14. In a group of triads P,Q,R if the atomic mass of P and R is 7 and 39 respectively, then the atomic mass of Q is

- a. 46 b. 32 c. 53 d. 23

15. In a Methane molecule, the ratio of Carbon and Hydrogen respectively is

- a. 1:2 b. 4:1 c. 1:4 d. 2:1

VIII. Answer the following questions

4x1=4

- Toothpaste is used for cleaning the teeth. Why?
- Thermite reaction is used to join railway tracks. Why?
- Write the chemical formula and structure of Methanal.
- Name the gas collected at anode during electrolysis of water.

IX. Answer the following questions.

3x2=6

- How does electronegativity vary across the period and down the group in the periodic table?
- Draw a diagram to show electrolytic refining of copper. Label anode mud and battery.
- Write any four methods to prevent corrosion.

OR

What are alloys? Write the composition of brass.

X. Answer the following questions.

3x3=9

23. Draw a neat diagram of reaction of Zinc granules on dilute sulphuric acid and testing hydrogen gas by burning.

24. a. $\text{MnO}_2 + \text{HCl} \rightarrow \text{MnCl}_2 + \text{H}_2\text{O} + \text{Cl}_2$

- Balance the chemical equation.
- Name the compounds that are oxidized and reduced.

b. Chips manufacturers flush chips bags with Nitrogen. Give reason.

25. What is the chemical name and chemical formula of bleaching powder? Mention 2 uses of it.

OR

To a solution of sodium hydroxide in a test tube, two drops of phenolphthalein are added.

- State the colour change observed.
- If dilute HCl is added dropwise to the solution, what will be the colour change?

XI. Answer the following questions.

1x4=4

- The molecular formula of two carbon compounds are C_4H_8 and C_3H_8 . Which one of the two is most likely to show addition reaction? Why?
- How does saturated hydrocarbon react with chlorine? What is the reaction called?

PART C : BIOLOGY

XII. Four alternatives are given for each of the following questions. Choose the correct alternative and write the complete answer along with its letter of alphabet. 2x1=2

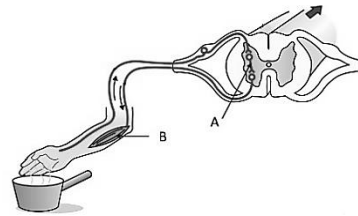
27. The requirements of autotrophic nutrition are
 a. Carbon dioxide and water b. Chlorophyll c. Sunlight d. All the above.
28. One of the following can be identified by using carbon dating technique.
 a) structure of fossils b) age of fossils c) percentage of carbon in fossils d) birth of fossils

XIII. Answer the following questions : 2x1=2

29. The rate of respiration is faster in aquatic animals than land animals. Give reasons.
30. The characters acquired by an organism during its life are not inherited. Why?

XIV. Answer the following questions : 3x2=6

31. What is biomagnification? Fishes, algae, crane, insect larva – In which organism the chemicals are maximum accumulated?
32. What is placenta? Write its function.
33. In the given picture
 a. Identify the process.
 b. Give the functions of A and B.



XV. Answer the following questions : 3x3=9

34. Name the method of asexual reproduction in the following organisms.
 a. Plasmodium b. Spirogyra c. Planaria d. Bryophyllum e. Yeast f. Rhizopus
35. Name the hormone secreted and their functions of these glands.
 a. Adrenal b. Thyroid c. Pituitary

-OR-

Write the function of the following parts of brain.

- a) cerebrum b) cerebellum c) pons
36. a. Farmers favour setting up of farm ponds in their fields. Give reasons.
 b. Reuse is better than recycle. How?

XVI. Answer the following questions : 2x4=8

37. Draw a diagram showing Excretory system in man and label following parts.
 a) Urethra b) Urinary bladder c) Ureter d) kidney
38. In Mendel's monohybrid cross experiment, tall pea plant and dwarf plants are crossed. The offsprings of F1 generation were self-pollinated. What is the phenotype of F2 generation? Explain using checker board.

OR

- a. Explain homologous and analogous organs with example.
 b. Mention the methods of finding the age of fossils. Explain them briefly.

**OFFICE OF THE DEPUTY DIRECTOR, DEPARTMENT OF SCHOOL EDUCATION
KOLAR DISTRICT,**

MODEL QUESTION PAPER – 3 : 2023-24

MAX MARKS : 80

STD : 10

SUB : SCIENCE (83E)

TIME : 3.15 HOUR

PART A : PHYSICS

I. Four alternatives are given for each of the following questions. Choose the correct alternative and write the complete answer along with its letter of alphabet. **4x1=4**

1. Corrective lens used in case of hyper metropia is
a) concave lens b) convex lens c) concavo- -convex lens d) bifocal lens
2. Rule used to find the direction of induced current in Faraday experiment is
a) Fleming's right hand rule b) Fleming's left hand rule
c) right hand thumb rule d) law of magnetic pole
3. When white colour light passed through prism, the colour bends with minimum angle is
a) blue b) red c) purple d) green
4. When length of a conductor is reduced to half of its length then resistance
a) reduce by two times b) increase by two times
c) reduce by half d) increase by half

II. Answer the following questions:

2x1=2

5. device A and B having a resistance of $2\ \Omega$ and $16\ \Omega$ respectively. Which type of circuit you would prefer to operate correctly? Give reason for your answer.

6. What is the function of mirror used in vehicle head lights

III. Answer the following questions:

2x2=4

7. Draw a diagram of electric generator and label rings.

8. Why nuclear energy has to be produced cautiously

OR

What are the advantages and disadvantages of solar energy?

IV. Answer the following questions:

3x3=9

9. What is short circuit and mention the measures to avoid short circuit

OR

Write three factors responsible for enhancing the power of motor.

10. Draw a ray diagram for the image formation in convex lens when object is placed in between principle focus (F1) and optic centre (O). Mention the position and nature of image.

11. Explain the following:

- a) Tyndall effect b) spectrum c) cataract

OR

What is Myopia? How it is caused?

V. Answer the following questions:

4x1=4

12. a) Mention the properties images formed in plane mirror?

b) Define the following terms related to spherical mirror

- a) radius of curvature b) principle axis

VI. Answer the following questions:

5x1=5

13. a) State Ohm's law? Write the factors influencing the resistance of a conductor.

b) What is electric current? Name the device used to measure electric current. How device should be connected in electric circuit?

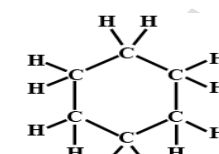
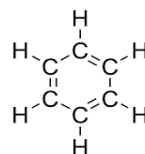
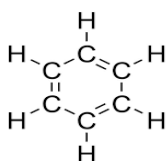
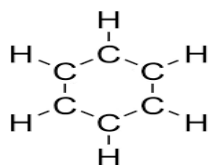
PART B : CHEMISTRY

VII. Four alternatives are given for each of the following questions. Choose the correct alternative and write the complete answer along with its letter of alphabet 2x1=2

14. $\text{NaOH} + \text{H}_2\text{SO}_4 \rightarrow \text{Na}_2\text{SO}_4 + \text{H}_2\text{O}$. The given equation represents

- Combination and displacement reaction
- Neutralisation and double displacement reaction.
- Redox and neutralisation reaction.
- Decomposition and redox reaction

15. The structural formula of benzene is



VIII. Answer the following questions :

4x1=4

16. Silver bromide is used in black and white photography. Why?

17. Ionic compounds are solids. Give reasons.

18. Define homologous series.

19. $\text{CaCO}_3 \rightarrow \dots$ Complete and identify the type of chemical equation.

IX. Answer the following questions.

3x2=6

20. Draw a diagram showing electrolysis of water. Label (i) Oxygen (ii) Cathode

21. Write an equation for chlor alkali process. Give two uses of Hydrogen.

OR

a) What is the composition of baking powder?

b) NaCl is an example for neutral salt. Why?

22. i. Iron is galvanized with Zinc. Why? ii. Name the ions present in Na_2O .

X. Answer the following questions.

3x3=9

23. Observe the table.

Groups	1	2	13	17
Elements	A	B	K	L

i) Write the formula of the compound formed by elements B and L.

ii) What is the valency of 18th group elements? Why?

iii) Can elements A and B form compounds? Give reason for answer.

24. Draw a diagram showing electrolytic refining of Copper.

Label (i) Acidified Copper sulphate solution (ii) Cathode

25. i. Hydrogen gas is not evolved when most of the metals react with nitric acid. Give reasons.

ii. The pH of milk of magnesia is 10. Name the ions responsible for high pH.

OR

Give reasons.

- During indigestion, there is pain and irritation in stomach.
- Doctors use Plaster of Paris for supporting fractured bones.
- Bleaching powder is used to treat drinking water.

XI. Answer the following questions.

1x4=4

26. i. What are functional groups? Write the formula of ketone group.

ii. Mention any 2 differences between soaps and detergents.

PART C BIOLOGY

XII. Four alternatives are given for each of the following questions. Choose the correct alternative and write the complete answer along with its letter of alphabet : **2 X 1 = 2**

27. If 100 kilo Jones of energy is available for organisms in the third trophic level then the energy available at the producer level is

- a) 10 KJ b) 100 KJ c) 1000 KJ d) 10000 KJ

28. It is an example for homologous organ

- a) human hand and forelimbs of horse b) Fins of fish and flippers of penguin
c) Wings of butterfly and birds d) Legs of insects and horse

XIII. Answer the following questions :

2 X 1 = 2

29. The flow of energy is Uni directional in an environment. Why?

30. How father determines the sex of the child .

XIV. Answer the following questions?

3 X 2 = 6

31. Mention the events that occur during photosynthesis

32. Name the hormone responsible for a) increase in the size of fruits and seeds
b) A stem bending towards light

33. In the given figure identify the process label a b c d

XV. Answer the following questions?

3 X 3 = 9

34. What are the advantages of vegetative propagation

OR

Explain sexual reproduction in angiosperms

35. How Local people and industrialists are stakeholders of forest resources .

36. Name the hormones secreted by these glands and write its functions

- a) Pancreas b) Testis c) Ovary

XVI. Answer the following questions?

2 X 4 = 8

37. Draw diagram of alimentary canal of man label

- a) stomach b) liver c) pancreas d) small intestine

38. How does Mendel's experiment show that characters can be dominant or recessive

OR

a) What are the tools to investigate evolutionary relationships

b) Fore limbs of frog, birds wing, wings of a bat, forelimbs of lizards. - Pair the following into their homologous organs and analogous organs. Give reasons for the arrangement

XIII. Four alternatives are given for each of the following questions. Choose the correct alternative and write the complete answer along with its letter of alphabet : **2 X 1 = 2**

27. Contraceptive method used to prevent sexually transmitted diseases is

- a) Surgical method b) condoms c) oral pills d) copper T

28. When a tall pea (TT) plant is crossed with a dwarf plant, (tt) the offspring obtained from the seeds are all tall. The reason could be

- a) tall character is dominant b) dwarf character is dominant
c) tall character is recessive d) none of the above

XIV. Answer the following questions :

2 X 1 = 2

29. What are the reasons for leaf movement shown by touch me not plant when it is touched

30. Name two sexually transmitted diseases caused by viruses .

**OFFICE OF THE DEPUTY DIRECTOR, DEPARTMENT OF SCHOOL EDUCATION
KOLAR DISTRICT,**

MODEL QUESTION PAPER – 4 : 2023-24

MAX MARKS : 80

STD : 10

SUB : SCIENCE (83E)

TIME : 3.15 HOUR

PART A : PHYSICS

I. Four alternatives are given for each of the following questions. Choose the correct alternative and write the complete answer along with its letter of alphabet. **4x1=4**

1. Corrective lens used in case of presbyopia is
 a) concave lens b) convex lens c) concavo-convex lens d) bifocal lens
2. Rule used to find the direction of movement of conductor in simple motor is
 a) Fleming's right hand rule b) Fleming's left hand rule
 c) right hand thumb rule d) law of magnetic pole
3. part of eye that controls the amount of light entering into eye is
 a) cornea b) lens c) pupil d) iris
4. Four resistors of different values are connected in series then electric current in circuit is
 a) constantly changes b) divides c) reduces d) same / constant

II. Answer the following questions:

2x1=2

5. Is it possible to use the fuse made of tungsten metal in a domestic circuit? Give reason for your answer.
6. What is the function of mirror used by Dentist ?

III. Answer the following questions:

2x2=4

7. Draw a diagram showing concentric circles indicating the field of magnet around a straight conductor and label magnetic field .
8. Mention the characters of an ideal fuel ?

OR

What are the uses of solar cell ?

IV. Answer the following questions:

3x3=9

9. Mention three safety measures taken in domestic electric circuit .

OR

Write the factors responsible for increasing the rate of induced current . When will be induced current highest .

10. Draw a ray diagram for the image formation in convex mirror when object is placed at infinity.

Mention the position and nature of image .

11. Explain the experiment of recombination of the spectrum of white light .

OR

Why planets do not twinkle like a star ?

V. Answer the following questions :

4x1=4

12. a) Define refractive index . When a light ray enters obliquely from one medium to another medium it will not bends towards or away from the normal .Is this possible ? Give reason for your answer.
 b) Define the following terms related to spherical lens
 a) optic centre b) principle focus

VI. Answer the following questions :

5x1=5

13. a) Write the SI unit of commercial unit of electric energy and express that unit in joules ?
 b) What is electric circuit ? Name the two types of electric circuit

PART B : CHEMISTRY

VII. Four alternatives are given for each of the following questions. Choose the correct alternative and write the complete answer along with its letter of alphabet. **2x1=2**

14. $\text{CuO} + \text{H}_2 \rightarrow \text{Cu} + \text{H}_2\text{O}$ Oxidised and reduced reactants in this equation are
 (a) CuO and H_2 (b) Cu and H_2O (c) H_2 and CuO (d) CuO and H_2O
15. Sodium carbonate is a basic salt because it is a salt of a
 (a) strong acid and strong base (b) weak acid and weak base
 (c) strong acid and weak base (d) weak acid and strong base

VIII. Answer the following questions .:

4x1=4

16. Mention two uses of baking soda.
17. Write one differences between alkenes and alkynes.
18. Why Ionic compounds have high melting point and boiling point.?
19. Respiration is an exothermic reaction. Justify.

IX. Answer the following questions:

3x2=6

20. Draw a diagram of testing conductivity of a salt solution and Label graphite rod.
21. Carbon atom neither forms C^{4+} nor C^{4-} ion but forms covalent compounds. Justify.

OR

Mention four chemical properties of carbon compounds.

22. What are the observations made when an iron nail is dropped in copper sulphate solution? Identify the type of reaction.

X. Answer the following questions.

3x3=9

23. Draw a diagram to show the reaction of zinc granules with dilute sulphuric acid and testing hydrogen gas by burning. Label zinc granules and delivery tube.
24. Define enrichment of ores ?
 b) Explain the extraction of mercury ore from cinnabar ore with balanced equation.
25. a) Define New land's law of octaves
 b) Mention the limitations of newland's classification of elements

OR

- a) State Mendeleev's periodic law.
 b) write the advantages of Mendeleev's periodic table

XI. Answer the following questions.

1x4=4

26. a) How detergents are effective in hard water?
 b) What is esterification reaction? Support your answer with a chemical equation.

PART C : BIOLOGY

XII. Four alternatives are given for each of the following questions. Choose the correct alternative and write the complete answer along with its letter of alphabet.

2 X 1 = 2

27. The part of the flower that form into fruit is

- a) stamen b) pistil c) ovule d) ovary

28. Birds have evolved from this group of organisms

- a) fishes b) amphibians c) reptiles d) mammals

XIII. Answer the following questions :

2 X 1 = 2

29. Name the hormone responsible for inhibiting plant growth and falling of leaves .

30. Testis are placed outside the abdominal cavity of the body .Why ?

XIV. Answer the following questions :

3 X 2 = 6

31. Depletion of ozone layer is a serious concern. What measures can be taken to control it

32. How do genes control the expression of traits or characters

33. a) In the given figure label a and c. b) Name the process that occurs in B

XV. Answer the following questions : 3 X 3 = 9

34. What is fertilization? what changes are seen in flower after fertilization

OR

a) What happens if egg is not fertilized

b) Name the sexually transmitted diseases caused by bacteria.

35. What is evolution? what are the evidences for evolution.?

36. What are the advantages of storing water in underground ?

Why there is a need to use fossil fuels cautiously?

XVI. Answer the following questions :

4 X 2 = 8

37. Draw a longitudinal section of human brain label

- a) pons b) hypothalamus c) cerebrum d) cerebellum

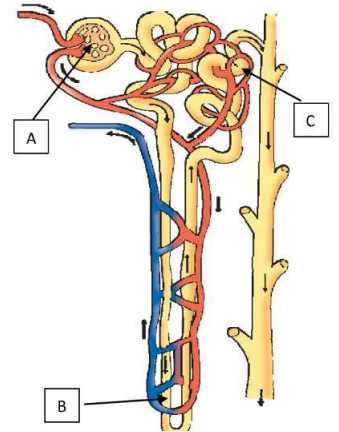
38. a) What is double circulation write its significance

b) Differentiate between arteries and capillaries.

OR

a) Explain transportation of water and minerals in plants

b) Explain transportation of products of photosynthesis in plant



**OFFICE OF THE DEPUTY DIRECTOR, DEPARTMENT OF SCHOOL EDUCATION
KOLAR DISTRICT,**

MODEL QUESTION PAPER – 5 : 2023-24

MAX MARKS : 80

STD : 10

SUB : SCIENCE (83E)

TIME : 3.15 HOUR

PART A : PHYSICS

I. Four alternatives are given for each of the following questions. Choose the correct alternative and write the complete answer along with its letter of alphabet. **4x1=4**

1. The color of light visible from far away is
a) red b) green c) blue d) orange
2. Phenomenon responsible for formation of rainbow is
a) dispersion b) refraction c) internal reflection d) all of these
3. Device used to protect electric circuit from high electric current is
a) main switch b) fuse c) voltmeter d) voltameter
4. Resistance will be high when four resistors are arranged in the form of
a) all resistors in parallel b) two in parallel -two in series
c) all resistors in series d) three in parallel -one in series

II. Answer the following questions:

2x1=2

5. A substance X and Y is having resistivity of 100×10^{-6} Ohm meter and 1.62×10^{-8} ohm meter respectively .which one you would use in making electric heater ? Give reason for your answer .
6. Name the two types of mirrors and their use in vehicles ?

III. Answer the following questions:

2x2=4

7. Draw a diagram of Faraday's experiment of electromagnetic induction and label bar magnet.
8. What are the disadvantages of nuclear energy ?

OR

How non conventional source of energy is better over conventional source of energy ?

IV. Answer the following questions:

3x3=9

9. Explain the working of simple motor .

OR

Explain the working of generator .

10. Draw a ray diagram for the image formation in concave lens when object is placed in between optical centre and infinity .Mention the position and nature of image .
11. Define hypermetropia and mention its causes .

OR

Define presbyopia and mention its causes ?

V. Answer the following questions :

4x1=4

12. a) Define 1 dioptre of power of lens .
b) How focal length and power of lens are related
c) Height of image by a lens is 5cm and height of object is -15cm. find the magnification and write the nature of image.

VI. Answer the following questions :

5x1=5

- 13.a) What is heating effect of electric current ? write two devices that work on heating effect of electric current

b) Write the SI unit of the following a) Electric charge b) electric current c) electric power .

Part B CHEMISTRY

VII. Four alternatives are given for each of the following questions. Choose the correct alternative and write the complete answer along with its letter of alphabet Choose the correct answer. $2 \times 1 = 2$

14. As we move down from top to bottom of periodic table this one do not increase
 (a) atomic radius (b) metallic character (c) valence electrons (d) No. of shells
15. The name of this $C_5H_{11}OH$ compound is
 a) Pentanone b. Pentanal c. Pentanol d. Pentanoic acid

VIII. Answer the following questions :

$4 \times 1 = 4$

16. Name the acid present in ant sting and sour milk.
 17. Why ionic compounds conduct electricity in molten state or aqueous state?
 18. Write the products of combustion of Methane.
 19. Write 2 methods to prevent rancidity.

IX. Answer the following questions.

$3 \times 2 = 6$

20. Write 2 demerits of Mendeleev's periodic law.
 21. Draw a diagram to show acid solution in water conducts electricity. Label bulb and beaker
 22. What is thermite reaction ? Write 1 application of it.

OR

Explain the method of obtaining copper from Cu_2S with a balanced equation?

X. Answer the following questions.

$3 \times 3 = 9$

23. Draw a diagram to show the action of steam on metals. Label glass wool and metal sample.
 24. How bleaching powder is prepared ? mention its two uses.

OR

Write name of salt and chemical formula for the following :

- a) removal of hardness of water b) soda acid device c) ornamental materials

25. write the balanced chemical equations for

- i. Zinc + Sulphuric acid \rightarrow Zinc sulphate + Hydrogen
 ii. Magnesium + Oxygen \rightarrow Magnesium oxide
 iii. Lead nitrate \rightarrow Lead oxide + Nitrogen dioxide + Oxygen

XI. Answer the following questions.

$1 \times 4 = 4$

26. a) write the structural formula of i) cyclo propane ii) propanoic acid
 b) Write the uses of Ethanol and ethanoic acid

PART C : BIOLOGY

XII. Four alternatives are given for each of the following questions. Choose the correct alternative and write the complete answer along with its letter of alphabet 2x1=2

27. The contraceptive method which prevents transmission of sexually transmitted diseases :
 (a) surgery (b) condoms (c) IUDs (d) oral pills
28. When a pure tall pea plant is crossed with a dwarf plant, the offspring obtained from the seeds are all tall. The reason could be :
 a) Tall character is dominant b) Dwarf character is recessive
 c) Tall character is recessive d) None of the above

XIII. Answer the following questions :

2x1=2

29. What are the reasons for leaf movement shown by touch me not plant when it is touched ?
 30. Name two sexually transmitted diseases caused by viruses.

3X2 = 6

XIV. Answer the following questions :

31. What are the methods by which plants throw out unwanted wastes.

32. Name the following. :- a) First member of human species

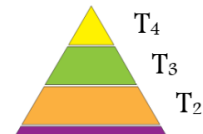
b) Continent in which earliest members of human found

c) Mechanism of evolution that provides diversity without any adaptation

d) A leafy vegetable evolved from wild cauliflower.

33. See the diagram and answer the following questions:

- a) Which trophic level has lowest available energy ?
 b) In which trophic level highest number of organisms found
 c) In which trophic level primary consumers are found?
 d) In which trophic level producers are found?



XV. Answer the following questions :

3 X 3 =9

34. a) How the stability of DNA is maintained in sexual reproduction

b) In a cell what is the source of protein synthesis

35. a) During sexual reproduction the chromosomal number is maintained constant in new generation how ?

b) What are the changes seen in a flower after fertilization

36. What measure will you take at home to be eco friendly

OR

What steps will you take to make your school environment and friendly environment friendly

XVI. Answer the following questions :

4 X 2 =8

37. Draw a diagram of structure of neuron label a) dendrite b) cell membrane c) axon d) nerve ending

38. a) Write the functions of nephron

b) Differentiate between aerobic and anaerobic respiration

OR

Explain digestion in small intestine

PART - A (PHYSICS)

I. **Four alternatives are given for each of the following questions / incomplete statements. Choose the correct alternative and write the complete answer along with its letter of alphabet.** $4 \times 1 = 4$

1. The type of the lens used to correct near-sightedness is

(A) Convex lens (B) Concave lens (C) Bifocal lens (D) Concavo-Convex lens

2. The rule that helps to determine the direction of magnetic field around a current carrying straight conductor is

(A) Right hand thumb rule (B) Fleming's right hand rule
(C) Law of magnetic poles (D) Fleming's left hand rule

3. The colour of the sky from the surface of the moon appeared as

(A) blue (B) violet (C) black (D) red

4. Resistors of resistance 100Ω each are connected in parallel in an electric circuit. Then the number of resistors have to be connected to obtain 25Ω as equivalent resistance is

(A) 10 (B) 5 (C) 40 (D) 4

II. **Answer the following questions :**

$2 \times 1 = 2$

5. Is it possible to connect a refrigerator rated 1320W to a domestic circuit of 220 V with an electric fuse rated 5 A ? Clarify the reason for your answer.

6. What is the function of the mirror used in solar cooker ?

III. **Answer the following questions :**

$2 \times 2 = 4$

7. Draw the diagram of a simple electric motor and label 'Split rings'.

8. Bio-gas is an excellent fuel. How ?

OR

Mention the advantages and the limitations of wind energy.

IV. **Answer the following questions :**

$3 \times 3 = 9$

9. 'Earthing of the electric instruments having metallic surface is must.' How is this measure be justified ?

OR

Which measures have to be taken to avoid the overload in domestic electric circuits ?

10. Draw the ray diagram for the image formation in a convex lens when the object is placed between F_1 and $2F_1$. Mention the position and the nature of the image formed with the help of ray diagram. (F_1 : Principal focus of the lens)

11. Explain the following natural phenomena :

i) Twinkling of stars ii) Rainbow formation.

OR

a) How does the eye lens accommodate to see the nearby objects and distant objects ? Explain.

b) The overhead sun at noon appears as white. What is the reason for this ?

V. Answer the following question :

1 × 4 = 4

12. a) What is reflection of light ? State the two laws of reflection.

b) Define the following terms related to the spherical mirrors :

i) Aperture ii) Pole of the mirror

VI. Answer the following question :

1 × 5 = 5

13. a) State Joule's law of heating. How does a bulb work based on this law? Explain.

b) What is electric potential difference ? Name the instrument used to measure the potential difference. How is this instrument be connected in an electric circuit?

PART - B CHEMISTRY)

VII. Four alternatives are given for each of the following questions / incomplete statements. Choose the correct alternative and write the complete answer along with its letter of alphabet.

2 × 1 = 2

14. A type of chemical reaction in which a single product is formed by two or more reactants is

(A) chemical decomposition

(B) chemical combination

(C) chemical displacement

(D) chemical double displacement

15. Atomic number of chlorine is 17. The period of this element in the modern periodic table is

(A) 1st period (B) 2nd period (C) 3rd period (D) 4th period

VIII. Answer the following questions :

4 × 1 = 4

16. What is dilution of acids ?

17. What could be the pH value of a salt that is commonly used to remove strong oil stains in any source ? Why ?

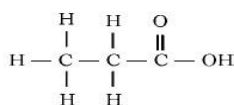
18. What is the reason for the formation of water when moderately reactive metals react with nitric acid ?

19. Though concentrated sulphuric acid is not a reactant during the conversion of ethanol to ethene, its presence is necessary. Why ?

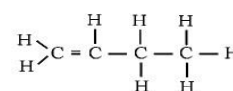
IX. Answer the following questions :

3 × 2 = 6

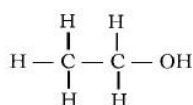
20. Name the carbon compounds having the following structures. i)



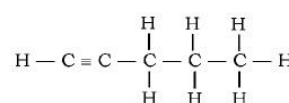
ii)



iii)



iv)



21. "Thermite process is useful to join railway tracks." Why ? Substantiate this statement with suitable explanation.

OR

Can zinc carbonate and cinnabar ores be converted into their oxides by roasting? Justify your answer with reason.

22. Observe the table given below. Answer the given questions :

Element	B	O	C	Li	K
Atomic Number	5	8	6	3	19

Choose the elements that have the smallest and the largest atoms.

i) Predict the formula of potassium oxide with reason.

X. Answer the following questions :

3 × 3 = 9

23. a) What are saturated carbon compounds ?

b) Define the following : i) Homologous series ii) Esters.

OR

a) What are micelles ?

b) What is covalent bond? Write any two properties of covalent compounds.

24. Draw the diagram of the arrangement of apparatus to show the action of steam on a metal. Label the following parts :

i) Metal sample ii) Hydrogen gas.

25. In which of the following chemical reactions water insoluble precipitate will be formed ?

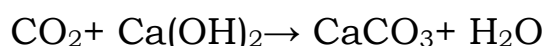
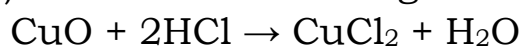
Explain. Which water soluble products are formed in both of the reactions ? i) Barium chloride reacted with sodium sulphate.

ii) Zinc reacted with hydrochloric acid.

XI. Answer the following question :

1 × 4 = 4

26. a) Observe the following chemical equations and answer the



Which property of metallic oxide and non-metallic oxide is expressed here? Explain.

b) How sodium carbonate is prepared? Explain with suitable chemical equations. Mention any two uses of this salt.

PART – C (BIOLOGY)

XII. Four alternatives are given for each of the following questions /incomplete statements. Choose the correct alternative and write the complete answer along with its letter of alphabet.

2 × 1 = 2

27. The process that occurs in the production of new individuals of planaria is

(A) binary fission (B) regeneration (C) budding (D) fragmentation

28. A phenomenon that does not direct the speciation is

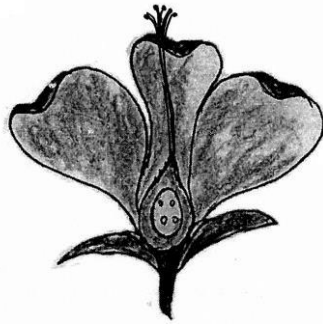
A) Geographical isolation (B) Genetic drift
(C) Natural selection (D) DNA replication

XIII. Answer the following questions :

2 × 1 = 2

29. Which tropisms are necessary to bring the growth in the shoots and roots of plants ?

30. What type of pollination occurs in the given below type of flower ? Why ?



XIV. Answer the following questions :

3 × 2 = 6

31. What are fossils ? What are the methods of estimating the age of fossils ?

32. Classify the following into natural and artificial ecosystems :

Rainforest, Crop field, Lake, Pond

33. Existing in enormous number and the tiny structures of both 'alveoli' and 'nephrons' are complementary to their work efficiency. How ?

XV. Answer the following questions :

3 × 3 = 9

34. a) What are the problems caused by the construction of large dams ?

b) Who are the stakeholders of forests ?

35. a) Sexual reproduction in higher organisms brings the genetic stability among the population of species. How is it possible ?

b) Surgical method of contraception is better than mechanical method of contraception. Why?

36. a) How homologous organs are differ from analogous organs ?

b) "An individual cannot pass its lifetime experiences to its progeny." Explain with an illustration.

OR

Round, yellow seed producing (*RRYY*) pea plant is crossed with wrinkled, green seed producing (*rryy*) pea plant. Show the results obtained in F_2 generation with the help of checker board and mention the ratio of the plant types produced.

XVI. Answer the following questions :

2 × 4 = 8

37. a) Which are the events that occur during photosynthesis ?

b) What is the importance of transpiration in the transportation of salts ? Mention the different strategies found in plants during the excretion of wastes.

OR

a) What is the function of buccal cavity and stomach in the digestion of food in our body ?

b) Mention the role of arteries and capillaries in the transportation of materials in our body.

38. Draw the diagram showing the structure of human brain. Label the following parts :

i) Cerebellum

ii) Hypothalamus.

PART A : PHYSICS

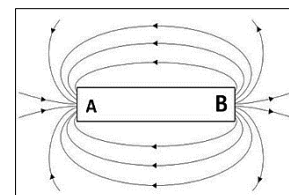
I. Four alternatives are given for each of the following questions. Choose the correct alternative and write the complete answer along with its letter of alphabet. 4x1=4

1. A device that reverses the direction of flow of current through a circuit :
 a) Ammeter b) Voltmeter c) Rheostat d) Commutator
2. To obtain an erect image in a concave mirror, the object has to be placed :
 a) at centre of curvature b) beyond centre of curvature
 c) in between pole and focus d) in between centre of curvature and focus
3. When electric current is passed, the magnetic lines of force are in the form of concentric circles in a :
 a) straight conductor b) circular coil c) solenoid d) rectangular coil
4. Geysers and Air coolers are connected to the circuit having the current :
 a) 5 A b) 2 A c) 1 A d) 15 A

II. Answer the following questions:

2x1=2

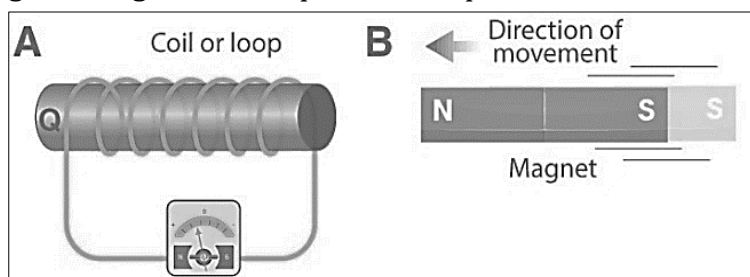
5. Draw the symbol of open switch used in an electric circuit.
6. Observe the given diagram. Identify the north pole of the magnet.
 Give reason for your answer.



III. Answer the following questions:

2x2=4

7. Observe the given diagram and explain this experiment.



8. An electric iron of resistance 20Ω takes a current of 5A. Calculate the heat produced in 30s.

- OR -

3 resistors of resistance 2Ω , 3Ω and 6Ω are connected in parallel. Find the total resistance of the circuit.

IV. Answer the following questions:

3x3=9

9. a) What is meant by centre of curvature of a spherical mirror?
 b) Mention any 4 uses of concave mirror.
 OR
 a) Write the formula to find magnification produced by a lens.
 b) Magnification of a lens P and Q is + 0.33 and -2 respectively. Write the nature of image formed in both cases.

10. Draw a ray diagram for image formation by convex lens when an object is placed at principal focus (F). Write the position and nature of image formed.

OR

Draw a ray diagram for image formation by convex mirror when object is placed at infinity. Write the position and nature of image formed.

11. a) Write two advantages and disadvantages of wind energy.
 b) Write the composition of Biogas.

V. Answer the following questions:

4x1=4

12. a) A refrigerator rated 200W operates 6 hours per day. An electric iron rated 100W is used for 3 hours per day. Calculate the cost of using these appliances for 30 days at the cost of Rs. 3 per KWh.
b) Is it correct to connect refrigerator and iron box in a series circuit? Give suitable reason for your answer.

VI. Answer the following questions:

2+3

13. a) Why does sun appear reddish early in the morning?
b) How myopia is different from hyper metropia ?

PART B: CHEMISTRY**VII. Four alternatives are given for each of the following questions. Choose the correct alternative and write the complete answer along with its letter of alphabet.**

2x1=2

14. When we mix the solutions of Sodium sulphate and Barium chloride, the white substance formed is :
a) Barium sulphate b) Barium chloride c) Sodium chloride d) Sodium sulphate
15. To protect tooth decay we are advised to brush our teeth regularly. The nature of the tooth paste commonly used is :
a) Acidic b) neutral c) basic d) corrosive

VIII. Answer the following questions:

4x1=4

16. A solution has a greater number of H^+ / H_3O^+ ions. What is the nature and taste of the solution?
17. State Mendeleev's periodic law.
18. Ionic compounds conduct electricity in molten state. Why ?
19. Write the chemical equation for thermal decomposition of Limestone.

IX. Answer the following questions:

3x2=6

20. Name an alloy of Iron. Write its composition.

OR

What is thermite reaction ? Write one application of this reaction.

21. Draw the diagram showing Electrolysis of water and label test tube and graphite rod.

22. Observe the given table.

- a) Which two elements show similar properties?
b) Which element have large atomic size? Why?

Elements	Atomic number
P	11
Q	17
R	19

X. Answer the following questions:

3x3=9

23. a) In a homologous series, the first member of a hydrocarbon has molecular formula C_2H_2 . Find the molecular formula, structural formula and name of third member of this series.
b) Write the structural formula of Propanone. Is Propanone a saturated or unsaturated compound?
24. Draw the diagram of arrangement of apparatus to show the action of steam on metals and label the following parts. a) Glass wool soaked in water b) Hydrogen gas
25. a) How is ethene prepared from ethanol? Give the reaction involved in it.
b) Name the reaction which is commonly used in the conversion of vegetable oils to fats.

OR

- a) Write the electron dot structure of Ethane molecule.
b) What are structural isomers ? Write the structural isomers of Butane.

XI. Answer the following questions:

1x4=4

26. a) Explain the preparation of Plaster of Paris. Write two uses of it.
b) What happens when strong acid reacts with weak base?
c) Baking soda is used in fire extinguishers. Why?

PART C : BIOLOGY**XII. Four alternatives are given for each of the following questions. Choose the correct alternative and write the complete answer along with its letter of alphabet.**

2x1=2

27. Lekha wanted to cross the road. She looked on either side of the road and walked across to the other side of the road. Which of the following is / are involved in the process described above ?
a) Skeletal muscles b) Cerebrum and Skeletal muscles
c) Cerebrum, Cerebellum & Medulla d) Cerebrum, Cerebellum & Skeletal muscles
28. A farmer wants to grow banana plants genetically similar enough to the plants already available in his field. Which one of the following methods would you suggest for this purpose?
a) Regeneration b) Budding c) Vegetative propagation d) Sexual reproduction

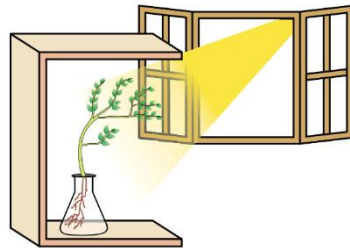
XIII. Answer the following questions: **2x1=2**

29. Write any 2 adaptations of leaf for photosynthesis.

30. Mention any 2 factors responsible for speciation.

XIV. Answer the following questions : **3x2=6**

31. Study the diagram given below and answer the questions that follow :



- a) Name the phenomenon shown by the shoot as depicted in the diagram.
b) Which plant hormone plays an important role in the above movement ?
- 32) Observe the food chain given. Grass → Grasshopper → Frog → Snake → Hawk
a) If the energy available for Grass hopper is 500 J, then how much energy will be available for Snake ? Is it possible to have 2 more trophic levels in this food chain ?
b) Flow of energy in any ecosystem is always unidirectional. Give reason.
- 33) Name the correct substrates for the following enzymes
 (a) Amylase (b) Pepsin (c) Lipase (d) Trypsin

XV. Answer the following questions: **3x3=9**

- 34) Write the significant function of these structures in human female reproductive system.
 a) Ovary b) Fallopian tube c) Uterus

OR

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

- 35) a) How does combustion of fossil fuels cause greenhouse effect ?
 b) "Local people are stakeholders of forest resources." Explain.
- 36) Draw a diagram showing sectional view of the human heart and label the following parts.
 a) Aorta b) Pulmonary veins

XVI. Answer the following questions. **2x4=8**

- 37) a) The plant bearing round yellow coloured (RrYy) seed are allowed to self-pollinate. Represent the result obtained in the next generation of dihybrid cross with the help of a checker board.
 b) Write the differences between homologous organs and analogous organs.
- 38) a) Doctor has advised Ravi to reduce sugar intake in his diet and do regular exercise after checking his blood test reports. Which disease do you think Ravi is suffering from?
 Name the hormone responsible for this disease and the organ producing the hormone.
 b) Which hormone is present in the areas of rapid cell division in a plant and which hormone inhibits the growth?

OR

- a) We are advised to take iodised salt in our diet by doctors. Justify its importance in our body.
b) What are reflex actions? Write its significance.

PART A : PHYSICS

I. Four alternatives are given for each of the following questions. Choose the correct alternative and write the complete answer along with its letter of alphabet. 3x1=3

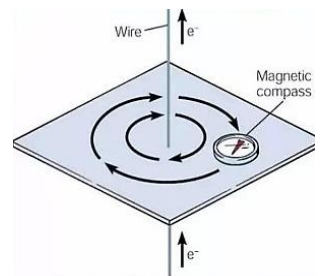
1. The relationship between Resistance and current is :
 - a) They are directly related to each other
 - b) The resistance has a greater magnitude than the current
 - c) They are inversely related to each other
 - d) The current has a greater magnitude than the resistance
2. A soft iron bar is introduced inside a current-carrying solenoid. The magnetic field inside a solenoid :
 - a) Decrease
 - b) Increase
 - c) Zero
 - d) Remains Same
3. The Commercial unit of electric Energy is :
 - a) Volt
 - b) Ampere
 - c) Kilowatt-hour
 - d) Watt

II. Answer the following questions: 3x1=3

4. Draw a symbol of variable resistance commonly used in the circuit diagram.
5. State Maxwells right hand thumb rule.
6. What is the voltage and frequency of AC current supplied for domestic purpose?

III. Answer the following questions: 2x2=4

7. Draw a schematic diagram of circuit consisting of 12V battery and resistors of 4Ω & 5Ω and plug key all connected in series.
8. A compass needle is placed near a current carrying straight conductor. State your observation for the following cases and give reasons for the same in each case.
 - (a) Magnitude of electric current is increased.
 - (b) The compass needle is displaced away from the conductor.



- OR -

What are the ways to increase the power of electric motor used for commercial purpose?

IV. Answer the following questions: 3x3=9

9. Write the differences between series and parallel circuits.
10. (a) Calculate the current through a lamp of 25 W operating at 250 V.
(b) Why elements of electrical heating devices are made up of alloys?

OR

An electric lamp of $100\ \Omega$, a toaster of resistance $50\ \Omega$ and a water filter of resistance $500\ \Omega$ are connected in parallel to a 220 V source. What is the resistance of an electric iron connected to the same source that takes as much current as all three appliances, and what is the current through it?

11. What is a magnetic field? Write the properties of magnetic field lines.

V. Answer the following questions: 4x1=4

12. a) A coil of copper wire is connected to a galvanometer. What would happen if a bar magnet is
 - (i) Pushed into the coil with its north pole entering first?
 - (ii) Pulled out of the bar magnet?
 - (iii) Held stationary inside the coil?
- b) State the principle of an electric generator.

VI. Answer the following questions: 5x1=5

13. a) State Ohm's law.
b) When an electric current flows through a conductor it becomes hot. Why?
List the factors on which the heat produced in a conductor depends..
c) Fuse wire is placed in series with the device. Give reason.

PART B: CHEMISTRY

VII. Four alternatives are given for each of the following questions. Choose the correct alternative and write the complete answer along with its letter of alphabet. **3x1=3**

14. Chips manufacturers usually flush bags of chips with this gas :
- a) Oxygen
 - b) Hydrogen
 - c) Chlorine
 - d) Nitrogen
15. The substance that converts blue litmus paper into red colour is:
- a) gastric juice
 - b) sodium chloride solution
 - c) pure water
 - d) sodium hydroxide solution
16. An acid present in the stinging hair of nettle plant leaves is :
- a) citric acid
 - b) lactic acid
 - c) methanoic acid
 - d) oxalic acid

VIII. Answer the following questions: **3x1=3**

17. Identify the substances that are oxidized and reduced in the following reaction.
 $4 \text{Na (s)} + \text{O}_2 \text{(g)} \rightarrow 2 \text{Na}_2\text{O (s)}$
18. Define neutralization reaction ?
19. Name any two metals that are comparatively poor conductors of heat.

IX. Answer the following questions: **3x2=6**

20. The solutions of lead(II) nitrate and potassium iodide were mixed.
What type of Chemical reaction is this? Write the balanced chemical equation for this reaction.
21. Draw the diagram showing Electrolytic refining of copper and label acidified CuSO_4 solution.
22. a) Silver articles become black after some time when exposed to air.
b) Copper vessels get a green coat when left exposed to air in the rainy season.

X. Answer the following questions: **3x3=9**

23. Write the balanced chemical equations for the following reactions.
- a) Magnesium wire is burnt in air.
 - b) Electric current is passed through water.
 - c) Iron nail is placed in CuSO_4 solution.
24. Write the molecular formula and one use of the following salts.
- (i) Bleaching powder
 - (ii) Baking soda
 - (iii) Plaster of Paris
- OR –

Name the products of Chlor-alkali process. Write one use of each product.

25. Draw the diagram of the arrangement of apparatus to show the reaction of zinc granules with dilute sulphuric acid and testing hydrogen gas by burning and label the following parts.
- a) Zinc granules
 - b) Soap bubble filled with hydrogen

XI. Answer the following questions: **1x4=4**

26. a) How is copper extracted from its ore Cu_2S ?
b) Write the differences between Calcination and Roasting.
- OR–
- a) Show the formation of NaCl by the transfer of electrons.
 - b) Why do ionic compounds have high melting points ?
 - c) Ionic compounds in the solid state do not conduct electricity. Why ?

PART C : BIOLOGY

XII. Four alternatives are given for each of the following questions. Choose the correct alternative and write the complete answer along with its letter of alphabet. **2x1=2**

27. Cell division in plants is promoted by:

- a) auxin b) gibberellins c) cytokinins d) abscisic acid

28. If salivary amylase is lacking in the saliva, which of the following events in the mouth cavity will be affected?

- (a) Proteins breaking down into amino acids (b) Starch breaking down into sugars
(c) Fats breaking down into fatty acids and glycerol (d) Absorption of vitamins

XIII. Answer the following questions:

2x1=2

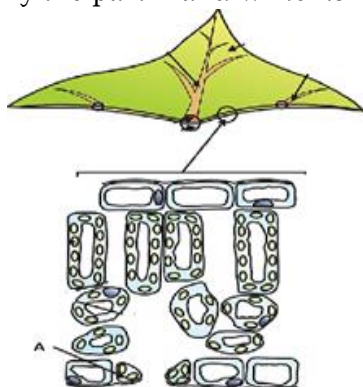
29. Define food web.

30. Name the hormone responsible for fighting emergency situations.

XIV. Answer the following questions :

3x2=6

31. In the given diagram, identify the part A and write its function.



32. Mention any two ways to manage garbage at school.

33. Suggest one word for each of the following statements/ definitions

- (a) Accumulation of chemicals at the successive trophic levels of a food chain
(b) Each level of food chain where transfer of energy takes place
(c) The physical factors like temperature, rainfall, wind and soil of an ecosystem
(d) Organisms which depend on the producers either directly or indirectly for food

OR

What is the importance of ozone layer? Name the substance responsible for ozone depletion.

XV. Answer the following questions:

3x3=9

34. Write the differences between the types of blood vessels in human beings.

OR

Give reasons for the following :

- a) Blood circulation in human heart is called double circulation.
b) Ventricles of heart are thicker than atria.
c) It is necessary to separate oxygenated and deoxygenated blood in mammals and birds.

35. A 'Touch me not' plant grows its roots towards soil and water. It also closes its leaves when touched. Compare and contrast between the above movements in the plant.

36. Explain the urine formation in nephron.

OR

How is water transported in plants?

XVI. Answer the following questions.

2x4=8

37. Draw a diagram showing sectional view of the human brain and label the following parts.

- a) Pons b) Cerebellum c) Hypothalamus d) Cerebrum

38. a) Write any two differences between aerobic and anaerobic respiration.

b) Muscle cramps are formed when we do physical activities suddenly. Give reason

c) Why is the rate of breathing in aquatic organisms much faster than in terrestrial organisms?

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ಆರೋಗ್ಯದ ಕಡೆ ಗಮನ ಹರಿಸಿ...

ಹೆಚ್ಚು ನೀರು ಕುಡಿಯಿರಿ...

ಅಗತ್ಯವಿದ್ದಷ್ಟು ಸಮಯ ನಿದ್ರಿಸಿ...

ಪರೀಕ್ಷೆಯನ್ನು ಸಂಭ್ರಮಿಸಿ...

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ಗೆಲುವು ನಿಮ್ಮದಾಗಲಿ.. ಶುಭವಾಗಲಿ

All The Best For Your Exams

THANK YOU

ಶ್ರೀ ವಿ ಕೃಷ್ಣಪ್ಪ

ಗಣಿತ ವಿಷಯ ಪರಿವೀಕ್ಷಕರು ಹಾಗೂ

ಎಸ್.ಎಸ್.ಎಲ್.ಸಿ. ಪರೀಕ್ಷಾ ನೋಡಲ್ ಅಧಿಕಾರಿಗಳು

ಉಪನಿರ್ದೇಶಕರ ಕಚೇರಿ, ಕೋಲಾರ ಜಿಲ್ಲೆ