KARNATAKA GOVERNMENT

INSTITUTE OF SCHOOL EDUCATION

BENGALORE ZILLA PANCHAYAT

DISTRICT INSTITUTE OF EDUCATION AND TRAINING, BENGALURU DISTRICT

SCIENCE SERIES QUESTION PAPERS

'SANKALPA'

TOWARDS FRUITFUL RESULT

ACADEMIC YEAR

2024-25

DEPARTMENT OF SCHOOL EDUCATION AND LITERACY

DDPI OFFICE BANGALORE SOUTH IN ASSOCIATION WITH DIET BANGALORE SOUTH, BANGALORE.

SUBJECT: SCIENCE TEST SERIES-1 MAXMARKS: 40

ACADEMICYEAR-2024-25.

PART-A PHYSICS-14-MARKS.

I Four alternatives are given for each question. Choose the most appropriate one: - 2X1=2M

1) The physical quantity which is measured by the unit Kilowatt-hour is
1) Power 2) Energy 3) Force 4) Electrical Resistivity

2) The value of 1 volt is equal to this
1)1 joule 2)1 joule per coulomb

3) 1Joule per second 4) 1 coulomb per meter.

II Answer the following in 2-3sentences each:- 2X2=4M

3)The conductors of electric iron at your home are made of an alloy rather than a pure metal. Give reason.

4)Draw a circuit diagram of an electric circuit containing a cell, a key, an ammeter, a resistor of 2Ω in series with a combination of two resistors (4Ω each) in parallel and a voltmeter across the parallel combination.

III Answer the following in3-4 sentences each:- 1X3=3M

5)Explain how an ammeter should be connected in electric circuit ?What is the maximum resistance that can be obtained using 5 resistors of $\frac{1}{5}$Ω each.

IV Answer the following in4-6 sentences each:- 1X5=5M

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

PART-B CHEMISTRY-12M

I Four alternatives are given for each question. Choose the most appropriate one:- ***1X1=1M***

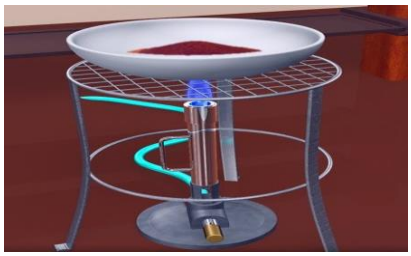
7) This reaction is example for $2AgCL \rightarrow 2Ag + CL_2$

1) Chemical combination **2) Chemical displacement**

3) Chemical decomposition **4) Chemical double displacement.**

II Answer the following in 1-2sentences each:- ***2X1=2M***

8)



What process is happening here? Why is it called so?

9) A compound 'X' on heating to give brown fumes' Y' along with other products. Name X, Y . What is the type of reaction happening here? Substantiate your answer.

III Answer the following in 2-3sentences each:- ***2X1=2M***

10) Draw the diagram showing electrolysis of water.

IV Answer the following in3-4 sentences each:- ***1X3=3M***

11) 1. A compound 'X' combines with oxygen in the cells of our body and provides energy. Name the type of reaction. Give reasons for your answer

2. Burning of a ribbon 'A 'to form white powder 'B' is an example of these four type of reactions. What are they?

3. Decomposition of compound 'Z' produces a product 'W' used in the manufacture of cement. Name Z and W.

V Answer the following in3-4sentences each:- 1X4=4M

12) 1. What are endothermic and exothermic reactions? Give examples.

2. Name the type of chemical reactions for the following

a) Barium chloride solution is mixed with sodium sulphate and a white coloured product is formed.

b) Quick lime reacts vigorously with water forming slaked lime.

PART-C BIOLOGY-14M

I Four alternatives are given for each question. Choose the most appropriate one:- 1X1=1M

13) The role of HCL in our stomach

1) To create a basic medium in the stomach.

2) Emulsify fats.

3) To create a acidic medium in the stomach.

4) To neutralize the food.

II Answer the following in 1-2sentences each:- 1X1=1M

14) Why do we get cramps during sudden muscular activity?

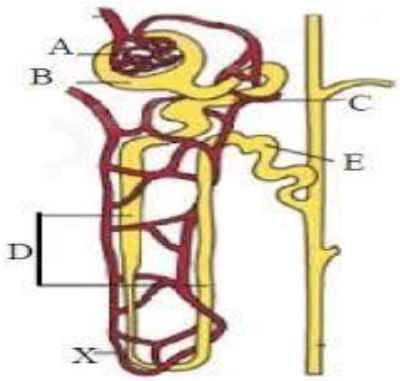
III Answer the following in 2-3sentences each:- 2X1=2M

15) Compare the functioning of alveoli in the lungs and nephrons in the kidneys with respect to their structure and function.

IV Answer the following in3-4 sentences each:- 3X2=6M

16) What is photosynthesis? What are the events that occur during photosynthesis?

17) Name the diagram given below . Write the functions of the parts labelled as 'A' and 'B' given in the diagram,



V Answer the following in3-4sentences each:- 1X4=4M

18) Draw a neat diagram of human heart and label the following parts.

1) The blood vessel that carry the oxygenated blood away from the heart.

2) Muscular wall that divides the heart into two sides.

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DEPARTMENT OF SCHOOL EDUCATION AND LITERACY

DDPI OFFICE BANGALORE SOUTH IN ASSOCIATION WITH DIET BANGALORE SOUTH, BANGALORE.

SUBJECT: SCIENCE TEST SERIES-2 MAXMARKS: 40

ACADEMIC YEAR-2024-25.

Part A: Physics Total Marks: 14

I. Choose the correct answer 1X2=2

1) According to Fleming's left-hand rule, the forefinger points in the direction of:
A) Current B) Motion C) Field D) Conventional current

2) The current rating of the wire used for high-power appliances in domestic wiring is:
A) 5A B) 15A C) 50A D) 240A

II. Answer the following in one sentence. 2x2=4

3)Nikhil has connected many appliances to a single socket. Is this a safe practice? Justify your answer.

4) Draw a figure showing magnetic field lines through and around a current-carrying solenoid.

IV. Answer the following in three or four sentence. 1X3=3

5) How do you make an electromagnet, and what factors can influence its strength?

V. Answer the following in five to six sentence. 1X5=5

6 i) Appliances with metallic bodies, like an electric press, are connected to an earthing wire. Explain why.
ii) Why are appliances connected in parallel in domestic electric circuits?

iii) What is the potential difference between a live wire and a neutral wire in an electric circuit in our country?

PART-B CHEMISTRY - 12 MARKS

VI. Choose the correct answer 1X1=1

7) The following acid dissolves the calcium carbonate of egg shell
a) Acetic acid b) Hydrochloric acid c) Sulphuric acid d) Citric acid

VII. Answer the following in one sentence. 2X1=2

8) How toothpaste are useful in preventing tooth decay?
9) Why bleaching powder is used in water treatment?

VIII. Answer the following in two or three sentence. 1X2=2

10) AX + BOH → BX + AOH. Analyse the given equation and answer the following questions.
a) Mention the type of above reaction.
b) Write the appropriate chemical equation for the above reaction.

IX. Answer the following in three or four sentence. 1X3=3

11) Write a neat labelled diagram showing the reaction of Zinc with Dilute Sulphuric acid.

X. Answer the following in five to six sentence. 1X4=4

12) a) Write the uses of the following
i) Plaster of Paris. ii) Washing soda.
b) What is acid rain? What are the effects of acid rain?

PART-C BIOLOGY - 14 MARKS

XI. Choose the correct answer **1X1=1**

13) The plant harmone that causes rapid cell division in seeds and fruits is ____
a) abscisic acid b) Cytokinin c) Gibberilin d) Auxin

XII. Answer the following in one sentence. - 1X1=1

14) Why is iodine necessary in our diet?

XIII. Answer the following in two or three sentence. 1X2=2

15) What are voluntary actions? Give examples.
16) What is photo tropism?

XIV. Answer the following in three or four sentence. 2X3=6

17) a) What are the reasons for causing gigantism and dwarfism.
b) Which harmone regulates blood sugar level?

18) a) Expalin the structure of neuron?
b) What is synapse?

XV. Answer the following in five to six sentence. 1X4=4

19) Write a neat labelled diagram showing longitudinal section of human heart.

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DEPARTMENT OF SCHOOL EDUCATION AND LITERACY

DDPI OFFICE BANGALORE SOUTH IN ASSOCIATION WITH DIET BANGALORE SOUTH, BANGALORE.

SUBJECT: SCIENCE TEST SERIES-3 MAXMARKS:40

ACADEMIC YEAR-2024-25.

PART-A PHYSICS-14-MARKS.

I Four alternatives are given for each question. Choose the most appropriate one: - 3X1=3M

1. **The spherical surfaces that reflect light are**
   a. **Concave lens and convex lens**
   b. **Concave mirror and convex mirror**
   c. **Concave mirror and plane mirror**
   d. **Convex mirror and plane mirror**
2. **The absolute refractive index is based on the velocity of light between**
   a. **Vacuum and given medium**
   b. **Air and given medium**
   c. **Vacuum and air**
   d. **Medium 1 and medium 2**
   e. **Vacuum and air**
3. **The distance between the focal point and object in case of lens**
   a. **Image distance** b. **Object distance**
   c. **Focal length** d. **Radius of curvature**

II Answer the following in 2-3sentences each:- 1X2=2M

4. **Define one dioptre power of a lens.**
5. **What is magnification?**

II Answer the following in 2-3sentences each:- 2X3=6M

6. **Draw a ray diagram for the image formation in case of a concave mirror, when the object is placed beyond "C"**
7. **Draw a ray diagram for the image formation in case of a convex lens, when the object is placed at "$2F_1$"**
8. **State Laws of refraction.**

III.Answer the following in 2-3sentences each:- 3X1=3M

9. **An object 5.0 cm in length is placed at 20 cm in front of a convex mirror of radius of curvature30cm.find the position of the image , its nature and size.**

PART-B CHEMISTRY-12M

I. Choose the correct answer: 3M

1. Observe the displacement reactions below and identify the most reactive metal:

a) $Cu + 2Ag(NO_3)_2 \rightarrow Cu(NO_3)_2 + 2Ag$

b) $Pb + Cu(NO_3)_2 \rightarrow Pb(NO_3)_2 + Cu$

c) $Zn + Pb(NO_3)_2 \rightarrow Zn(NO_3)_2 + Pb$

a) Ag b) Pb c) Cu d) Zn

2. Metals are good reducing agent. This statement is supported by the reaction

a) $PbO + C \rightarrow Pb + CO$ b) $3MnO_2 + 4Al \rightarrow 2Al_2O_3 + 3Mn$

c) $ZnO + C \rightarrow Zn + CO$ d) $CuO + H_2 \rightarrow Cu + H_2O$

3. An alloy made of copper and zinc is:

(a) Brass (b) Bronze (c) Copper (d) Stainless steel

II. Answer the following : 2M

4. Write down any 2 physical properties of metals.

5. List any 2 common characteristics of ionic compounds.

III. Answer the following 4M

6. Give reasons for the following:

(a) Metals are used in making cooking utensils.

(b) Sodium is stored in kerosene.

7. Write differences between roasting and calcination.

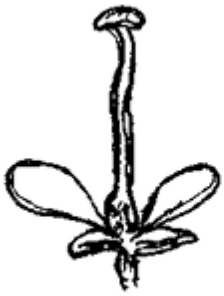
III. Answer the following 3M

8. Draw a diagram of the reaction between metal and steam, and label the parts.

PART-C BIOLOGY-14M

Choose the correct answer 1x2=2

1. The flower that can undergo self pollination among below given figures of flower is



(P)

(Q)

(R)

(A) "P" only (B) "R"only (C) Both "P" and "R" (D) "Q" only

2. An example for bacterial sexual transmitted disease

(A) AIDS (B) Warts (C) Syphilis (D) Malaria

Answer the following 1x3=3

3. What is the importance of DNA copying in reproduction?

4. An example for plant that reproduce by leaves.

5. Differentiate between binary fission and multiple fission

Answer the following **2x3=6**

6. Give reason: Regeneration is not the same as Reproduction.

7. Name the type of asexual reproduction in :

(a) *Planaria* **(b) *Rhizopus*** **(iii) *Spirogyra*** **(iv) *Hydra***

8. Draw the diagram of germination of pollen on stigma.

Answer the following **3x1=3**

9. (a) Why do testes located in scrotum outside the abdominal cavity?

(b) List the changes in plants after fertilization?

or

a) Define placenta?
b) "In human reproduction, the placenta performs a significant role in the development of a foetus into a child." Justify this statement.
c) What is the role of the seminal vesicles and the prostate gland?

DEPARTMENT OF SCHOOL EDUCATION AND LITERACY

DDPI OFFICE BANGALORE SOUTH IN ASSOCIATION WITH DIET BANGALORE SOUTH, BANGALORE.

SUBJECT: SCIENCE TEST SERIES-4 MAXMARKS:40

ACADEMIC YEAR-2024-25.

PART-A: PHYSICS (14 MARKS)

I Choose the correct answer 1X1=1

1. The change that occurs in the eye to see the distant objects clearly is

(A) focal length of the eye lens decreases
(B) curvature of the eye lens increases
(C) focal length of the eye lens increases
(D) ciliary muscles of the eye contract

II Answer the following in one sentence. 2X1=2

2. Mention any two phenomena that can be observed due to atmospheric refraction of light on the earth.

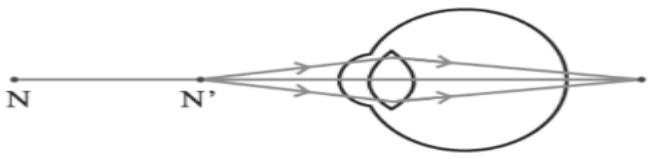
3. What is Tyndall effect?

III Answer the following in two or three sentence. 2X4=8

4. 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?

5. Sun appears red in colour during sunrise but appears white at noon. Explain with the reasons.

6. Observe the given figure. Name the eye defect indicated in the figure and also mention the lens used to correct this defect.



7. Explain the formation of rainbow in nature.

IV Answer the following in three or four sentence. **1X3=3**

8. Draw the diagram to show the recombination of the spectrum of white light and label the following parts.

a) The ray of light that bends the most

b) The ray of light that bends the least.

PART-B: CHEMISTRY (12 MARKS)

V Choose the correct answer **2X1=2**

1. The catalyst used to convert unsaturated hydrocarbons into saturated hydrocarbons.

(a) Carbon b) Magnesium c) Nickel d)Aluminium

2. Butanone is a four carbon compound. The functional group found in this organic compound is

(a) Ketone (b) Aldehyde (c) Alcohol(d) Carboxylic acid

VI Answer the following in one sentence. **1X1=1**

3. Define isomerism.

VII Answer the following in two or three sentence. **3X2=6**

4. Give Reason?

(a) Sometime cooking gas burns with yellow flame.

(b) Saturated hydrocarbon fuels are better than unsaturated hydrocarbon fuels

5. What are homologous series? What are the important features of Homologous series?

6. Write the properties of cyclo-alkanes. Write the electron dot structure of Cyclo-hexane

VIII Answer the following in three or four sentence. **1X3=3**

7. a) Explain the mechanism of the cleaning action of soap?

b) why detergents are better cleaning agent in hard water?

PART-C: BIOLOGY (14 MARKS)

IX Choose the correct answer **1X1=1**

1. Observe the table which shows contrast forms of pea plants

Colour of the seed	Position of the flower
Green (G)	Axial (A)
Yellow (g)	Terminal (a)

The genetic makeup with green seed and terminal flowers is indicated as

(A) gGAa (B) GgAa (C) GgAA (D) Ggaa.

X Answer the following in one sentence. 2X1=2

2. What are dominant traits?

3. Write the differences between the sex chromosomes of man and the sex chromosomes of women.

XI Answer the following in two or three sentence. 2X2=4

4. "Chromosomes inherited from the father determines the sex of a child." Explain.

5. Differentiate between inherited traits and acquired traits

XII Answer the following in three or four sentence. 1X3=3

6. In pea plant tall trait is dominant over the dwarf. If a cross is carried out between these two plants, give answer to the following questions:

a. Mention the genes for the traits of parents

b. State the trait of F1 hybrids

c. Write the ratio of F2 progeny obtained

d. What is the name of the cross?

XIII Answer the following in five to six sentence. 1X4=4

7. The plant bearing round yellow coloured (RrYy) seed are self-pollinated with the same plant. Using the above information, answer the following questions:

a. Represent the result obtained in the F2 generation of the above cross with the help of a checker board

b. What is the phenotypic ratio obtained in the above cross and mention the varieties of plants obtained in the F2 generation.

c. What is the name of the cross?

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