

THE SOUTH POINT

Holidays' Homework, 2023-24

Class - X

English

Section-A (Reading Skills)

(Let's Read , Comprehend and Answer)

* Select the Article/ Write-Ups on "Cleanliness", "Sports", "Science", "Food Habits", "Politics", "Ill Effects of Smoking", " Obesity", "Women Empowerment" , "Education" and "Rising Population" each containing 200-250 words from the English newspaper. Cut the Articles and paste them in your Holidays' Homework notebook.

* Frame six questions on each of them and write their answers also.

Section -B (Writing Skills)

(Let's Compose)

Letter to Editor -

1. Write a Letter to the Editor of a newspaper about the issue of waterlogging in your area.
2. Write a letter to the Editor of a newspaper expressing your views on the threats to national integration in your town. You are Gaurav/Reeta of 110-B, Sector 45, Chandigarh.

Enquiry Letter

1. Success Coaching Centre is situated in Delhi. The institute specializes in teaching Science to Classes XI–XII. Write a letter of inquiry in about 100 – 120 words to be addressed to the Administrator In – charge of the institute, seeking clarification about the timings, duration, staff, transport, and other necessary details for joining the institute. You are Sonia / Shiv of 2, Murthi Road, Chennai.
2. Write a letter of enquiry to the Manager. MK Security Systems, Faridabad, manufacturing security devices. Sign as Ritesh/Rukmani as the Manager, PVC Security Ltd. GY Road, Pathankot.

Placing an Order

- You are Nalini/Vishal, Hostel Warden, Zennith Public School, Kosikalan, Uttar Pradesh. Write a letter to the Sales Manager, Bharat Electronics and Domestic Appliances Ltd., New Delhi, placing an order for a few fans, microwaves, ovens and geysers that you wish to purchase for the hostel. Also ask for, the discount permissible on the purchase.
2. You are Raman/Nina. As the Manager, Kf SIGMA Boutique , write a letter to the Manager of S.K. Emporium placing your order for furnishing and upholstery items for your boutique.

Complaint Letter

Write a letter to M/S Oxford Publishing House, London complaining that the books sent by them were not those you had ordered for. Ask for a replacement. You are Varun Joshi, Sector-20, Chandigarh.

2. Write a letter to the Manager, Nawin Crockerries, Faridabad, complaining that goods ordered by you were received in damaged condition.

Section-B (Grammar)

(Let's Hone Grammar Skills)

Tenses- (Editing and gap- filling) – 06 exercises

Subject - Verb Agreement (Editing and gap filling) – 06 exercises

Section-C (Literature)

(Let's Check Literary Flavour)

Note:- Read the following Chapters and write the answers of the textual exercises:

'A Letter To God', 'Nelson Mandela : A Long Walk to Freedom' , 'A Triumph of Surgery', 'The Thief's Story'

Poem:- 'Dust of Snow', 'Fire And Ice', 'A Tiger in the Zoo'

Art -Integrated Activity

Select any two Novelists and two Poets of Manipur and Haryana each and write about their life, education, works, honours and awards on A-4 size sheets. Paste their photographs also.

हिंदी

1. 'आपके जीवन में जाति धर्म संप्रदाय से अधिक महत्वपूर्ण देश है।' एक विद्यार्थी के रूप में आप देश के प्रति प्रेम कैसे प्रकट कर सकते हैं? एक लेख लिखें।
2. 'मनुष्य अपने विनाश का कारण स्वयं बनता जा रहा है।' इस कथन के आलोक में लगभग 150 शब्दों में अपने विचार लिखिए।

- पाठ्यक्रम में निहित अलंकारों—श्लेष, उत्प्रेक्षा, मानवीकरण, अतिशयोक्ति का समावेश करते हुए एक कविता लिखें।
- 'भारतीय ग्रामीण संस्कृति व विदेशी ग्रामीण संस्कृति' का तुलनात्मक अध्ययन करते हुए एक सचित्र परियोजना तैयार कीजिए।
- अपने किसी मनपसंद विषय पर एक आकर्षक विज्ञापन बनाइए।
- किसी एक विषय पर ई-मेल लेखन कीजिए।
- किसी एक विषय पर संपादक के नाम पत्र लिखिए।
- कृतिका के पाठ-3 'साना-साना हाथ जोड़ि' के कोई पांच प्रश्न छाँटकर उत्तर लिखें।
- पढाए गए सभी पाठों के प्रश्न उत्तर याद करें।

MATHEMATICS

Revision Work:

NCERT Book – Revise Chapters-1,2,4,5,7

NCERT EXEMPLER

| | | | | | |
|-----------|-----------------------|----------|--------------------------|-----------|----------------|
| Ex.- 1.1 | 4,5,6,7,8,9 | Ex. 1.2 | 6,7,8 | Ex. 1.3 | 10, 11, 12 |
| Ex.- 2.1 | Complete (Except 5,6) | Ex. 2.3 | Complete | Ex. 2.4 | 1 |
| Ex.- 4.1 | Complete (Except 7) | Ex. 4.3 | Complete | | |
| Ex. – 5.1 | Complete | Ex.- 5.3 | 4,8,11,16,18,19,25,29 | Example 1 | Page No. 54 |
| Ex.- 5.4 | 2,6,7,8 | Ex.- 7.1 | Complete (Except 18, 20) | Ex. 7.3 | (2,5,12,13,14) |

| LAB MANUAL | Activity No. | Page No. |
|------------|--------------|----------|
| | 6 | 20-22 |
| | 2 | 4 – 8 |
| | 12 | 38-39 |
| | 16 | 48-49 |
| | 23 | 66-68 |
| | 26 | 75-77 |

Project Work – Make a project on the given topic:

Real Numbers, Arithmetic Progressions, Co-ordinate Geometry, Quadratic Equations

SCIENCE (BIOLOGY)

Assignment-A

SECTION-A

- Name two inorganic substances which are used by autotrophs to make food.
- Name the pigment which can absorb solar energy.
- In which part of the digestive system is water absorbed?
- Name the organs of breathing in fish.
- Where does the blood absorb oxygen in the human body?
- What is the role of glomerulus in the kidney?
- Name one animal having single circulation of blood and another having double circulation.
- Name two liquids which help in the transportation of substances in the human body.
- What gaseous waste products are excreted by plants?
- Name the procedure used in the working of artificial kidney.

SECTION-B

- (a) What is chlorophyll? What part does chlorophyll play in photosynthesis?
 - Which simple food is prepared first in the process of photosynthesis?
 - Name the food which gets stored in plant leaves.
- (a) What is the role of hydrochloric acid in our stomach?
 - What is the function of enzymes in the human digestive system?
- Name the type of respiration in which the end products are:
 - C_2H_5OH and CO_2
 - CO_2 and H_2O
 - Lactic Acid.

Give one example of each case where such a respiration can occur.

- Why is the rate of breathing in aquatic organisms much faster than in terrestrial organisms?
- (a) What job is done by the kidneys?
 - What do kidneys excrete?

- (c) What is the name of the tubes which connect the kidneys to bladder?
 (d) What does the bladder in our body do?

SECTION-C

16. (a) Describe the mechanism of urine formation in human excretory system. Draw a labelled diagram to illustrate your answer.
 (b) Where is the urine carried through ureters?
 (c) What is urethra ?
17. Fill in the blanks with suitable words:
 (a) Gums and resins are the _____ products of plants.
 (b) Bowman's capsule and tubule taken together make a _____.
 (c) The organs which extract the nitrogenous wastes from the blood are _____.
 (d) The extracellular fluid which always flows from body tissues to the heart is called _____.
 (e) The _____ blood cell make antibodies whereas _____ blood cell help in respiration.
18. State whether the following statements are True or False?
 (a) During respiration, the plants take CO_2 and release O_2 .
 (b) Energy can be produced in cells without oxygen.
 (c) Fish and earthworm exchange gases during respiration in the same way.
19. (a) Name the main organs of the human digestive system. Also name the associated glands.
 (b) How do carbohydrates, fats and proteins get digested in human beings?
20. (a) Explain how, the air we breathe in gets cleaned while passing through the nasal passage.
 (b) Why do the walls of trachea not collapse when there is less air in it.
 (c) How are oxygen and carbon dioxide exchanged in our body during respiration.

Assignment-B

Draw all the diagrams from Chapter-6: Life Process. - (With the help of NCERT textbook)

Science (Chemistry)

1. Solve the following questions in your notebook:-

| Chapter No. | Name of Chapter | NCERT Exercise Questions |
|-------------|----------------------------------|--|
| 1 | Chemical Reactions and Equations | Q. 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 17 Intext Questions: Page No. 6 : Q.1 Page No. 10: Q.1 Page No. 13: Q.1, 3 |
| 2 | Acids, Bases and Salts | Q. 1, 2, 3, 5, 6, 7, 8, 14 |

Note: Learn the chapters: Chemical Reactions and Equations and Acids, Bases and Salts.

Practical Work

1. Aim: Studying the properties of base (NaOH) on the basis of its reaction with:
- Litmus solution (Blue/ Red).
 - Zinc metal.
 - Solid sodium carbonate.
2. Aim: Studying the properties of acid(HCl) on the basis of its reaction with:
- Litmus solution (Blue/ Red).
 - Zinc metal.
 - Solid sodium carbonate.



COMPETENCY BASED QUESTIONS



Multiple Choice Questions

Mark the correct answer out of the four options given for each of the following questions.

- Copper(II) sulphate solution is placed in four vessels A, B, C, D made of iron, zinc, silver and aluminium. In which vessel the chemical reaction will not occur ?
 (a) A (b) B
 (c) C (d) D.
- Which of the following represents a physical change ?
 (a) $\text{H}_2\text{O}(l) \longrightarrow \text{H}_2\text{O}(g)$
 (b) $2\text{H}_2\text{O}(l) \longrightarrow 2\text{H}_2(g) + \text{O}_2(g)$
 (c) $\text{C}(s) + \text{O}_2(g) \longrightarrow \text{CO}_2(g)$
 (d) $2\text{H}_2(g) + \text{O}_2(g) \longrightarrow 2\text{H}_2\text{O}(l)$.
- The sum of all the coefficients of various chemical species in the following chemical equation is :
 $\dots \text{NH}_3 + \dots \text{O}_2 \dots \longrightarrow \dots \text{NO}(g) + \dots \text{H}_2\text{O}(l)$
 (a) 4 (b) 19
 (c) 17 (d) 15.
- What happens when water is added to quicklime ?
 (a) It dissolves in water with absorption of heat
 (b) Calcium and oxygen are produced
 (c) Heat is produced forming lime water
 (d) Oxidation of quicklime occurs.
- Which of the following is a combination reaction ?
 (a) Burning of petrol
 (b) Burning of carbon monoxide in oxygen
 (c) Burning of sodium in water
 (d) Burning of methane in oxygen.
- Which of the following is a double displacement reaction ?
 (a) $\text{Zn} + \text{AgNO}_3 \longrightarrow \text{Zn}(\text{NO}_3)_2 + \text{Ag}$
 (b) $\text{K}_2\text{SO}_4 + \text{BaCl}_2 \longrightarrow \text{BaSO}_4 + 2\text{KCl}$
 (c) $\text{NH}_3 + \text{HCl} \longrightarrow \text{NH}_4\text{Cl}$
 (d) $\text{C}_2\text{H}_4 + 3\text{O}_2 \longrightarrow 2\text{CO}_2 + 2\text{H}_2\text{O}$.
- Which of the following chemicals will you select to study the combination reaction in the laboratory ?
 (a) Barium chloride (b) Iron (II) sulphate
 (c) Quicklime (d) Calcium carbonate.
- Which of the following is not observed when lead nitrate salt is heated in a dry test tubes ?
 (a) Oxygen gas is formed as one of the product
 (b) Crackling sound is produced
 (c) A reddish brown gas is evolved
 (d) Water droplets are formed on cooler parts of test tube.
- If iron nail is kept in an aqueous solution of copper sulphate,
 (a) double decomposition reaction takes place
 (b) redox reaction takes place
 (c) no chemical reaction occurs
 (d) iron gets precipitated in the solution.
- The reactants AB and CD undergo double displacement reaction when their solutions are mixed. The correct set of products is,
 (a) $\text{A}_2 + \text{C}_2 + \text{DB}$ (b) $\text{BC} + \text{DA}$
 (c) $\text{CB} + \text{AD}$ (d) $\text{AC} + \text{BD}$.
- In order to perform double decomposition reaction in the laboratory which pair of species among the following is most suitable ?
 (a) Barium chloride and barium sulphate
 (b) Barium chloride and potassium nitrate
 (c) Barium chloride and potassium sulphate
 (d) Barium chloride and sodium chloride.
- When the aqueous solutions of barium nitrate and potassium chromate salts is mixed, an X_1 coloured precipitate of compound X_2 is formed. Missing words X_1 and X_2 respectively are :
 (a) White, KNO_3 (b) Yellow, KNO_3
 (c) White, BaCrO_4 (d) Yellow, BaCrO_4 .
- Which among the following process represents, physical change ?
 (a) $\text{C}(s) + \text{O}_2(g) \longrightarrow \text{CO}_2(g)$
 (b) Coal \longrightarrow Coal gas
 (c) Dry ice \longrightarrow $\text{H}_2\text{O}(g)$
 (d) Sulphur \longrightarrow Sulphur dioxide.

Chemical Reactions and Equations

14. When iron (II) sulphate solution is added gradually to potassium permanganate solution taken in a beaker,
- the colour of the solution finally becomes light green
 - the pink colour deepens to purple
 - the pink colour slowly decolourises
 - no change of colour is observed.
15. Which of the following is decomposition reaction ?
- $2\text{KClO}_3 \longrightarrow 2\text{KCl} + 3\text{O}_2$
 - $\text{H}_2 + \text{Cl}_2 \longrightarrow 2\text{HCl}$
 - $\text{NaOH} + \text{HCl} \longrightarrow \text{H}_2\text{O} + \text{NaCl}$
 - $\text{CO} + \frac{1}{2} \text{O}_2 \longrightarrow \text{CO}_2$
16. The chemical reaction,
 $\text{C}_2\text{H}_5\text{OH} + 3\text{O}_2 \longrightarrow 2\text{CO}_2 + 3\text{H}_2\text{O} + \text{Heat}$ is called :
- Displacement reaction
 - Double decomposition reaction
 - Combination reaction
 - Combustion reaction
17. Which of the following reaction is combustion reaction as well as combination reaction ?
- $\text{C}(s) + \text{O}_2(g) \longrightarrow \text{CO}_2(g)$
 - $\text{CH}_4 + 2\text{O}_2 \longrightarrow 2\text{H}_2\text{O} + \text{CO}_2$
 - $3\text{Mg} + \text{N}_2 \longrightarrow \text{Mg}_3\text{N}_2$
 - $\text{NH}_3 + \text{HCl} \longrightarrow \text{NH}_4\text{Cl}$
18. $x\text{KMnO}_4 + y\text{HCl} \longrightarrow \text{KCl} + \text{H}_2\text{O} + \text{MnCl}_2 + z\text{Cl}_2$
- In the above chemical equation, the values of x , y and z are respectively :
- 2, 16, 5
 - 1, 8, 4
 - 2, 8, 4
 - 2, 4, 3.
19. Which of the following is a redox reaction but not a combination reaction ?
- $\text{H}_2 + 2\text{O}_2 \longrightarrow \text{H}_2\text{O}$
 - $\text{CO} + \frac{1}{2} \text{O}_2 \longrightarrow \text{CO}_2$
 - $\text{Fe}_2\text{O}_3 + 3\text{CO} \longrightarrow 2\text{Fe} + 3\text{CO}_2$
 - $2\text{Mg} + \text{O}_2 \longrightarrow \text{MgO}$.
20. Which of the following chemical reaction is combination reaction and involves the use of catalyst ?
- $2\text{Ca} + \text{O}_2 \longrightarrow 2\text{CaO}$
 - $\text{Mg} + \text{O}_2 \longrightarrow 2\text{MgO}$
 - $\text{S}_8 + 8\text{O}_2 \longrightarrow 8\text{SO}_2$
 - $3\text{H}_2 + \text{N}_2 \longrightarrow 2\text{NH}_3$.
21. Synthesis of ammonia by reaction of hydrogen and nitrogen gases can also be called :
- decomposition reaction
 - displacement reaction
 - neutralisation reaction
 - combination reaction
22. Decomposition of lead (II) nitrate salt results in the evolution of brown coloured fumes. These fumes contain
- $\text{Na} + \text{O}_2$
 - $\text{N}_2 + \text{O}_2$
 - $\text{NO}_2 + \text{O}_2$
 - $\text{PbO}_2 + \text{O}_2$
23. Which of the following ionic equation is truly balanced ?
- $\text{Al} + 3\text{H}^+ \longrightarrow \text{Al}^{3+} + 3\text{H}$
 - $2\text{Al} + 6\text{H}^+ \longrightarrow 2\text{Al}^{3+} + 3\text{H}_2$
 - $\text{Al} + 6\text{H}^+ \longrightarrow 2\text{Al}^{3+} + \text{H}_2$
 - $\text{Al} + 2\text{H}^+ \longrightarrow \text{Al}^{3+} + \text{H}_2$
24. In which of the following identity of initial substance remains unchanged ?
- Curdling of milk
 - Formation of crystals by process of crystallisation
 - Fermentation of grapes
 - Digestion of food
- (C.B.S.E. 2020)
25. A student while burning a magnesium ribbon in air, collected the products in a wet watch glass. The new product obtained was :
- Magnesium oxide
 - Magnesium carbonate
 - Magnesium hydroxide
 - Magnesium chloride
- (C.B.S.E. 2021, Term-I)
26. Select the correct matching in the following table in connection with the given chemical reaction :
- $$\text{CuSO}_4 + \text{Fe} \longrightarrow \text{FeSO}_4 + \text{Cu}$$
- | | Initial colour of solution | Final colour of solution | Final colour of iron nail | Type of reaction |
|-----|----------------------------|--------------------------|---------------------------|---------------------|
| (a) | Pale green | Blue | Grey | Displacement |
| (b) | Blue | Pale green | Brownish | Double displacement |
| (c) | Blue | Light blue | Grey | Double displacement |
| (d) | Blue | Pale green | Brownish | Displacement |
- (C.B.S.E. 2021, Term-I)

EXAM PRACTICE

NCERT QUESTIONS

- Which one of the following materials cannot be used to make a lens?
(a) Water (b) Glass
(c) Plastic (d) Clay
- The image formed by a concave mirror is observed to be virtual erect and larger than the object. Where should be the position of the object?
(a) Between principal focus and centre of curvature
(b) At centre of curvature
(c) Beyond centre of curvature
(d) Between pole of the mirror and principal focus
- Where should an object be placed in front of a convex lens to get a real image of the size of the object?
(a) At the principal focus of the lens
(b) At twice the focal length
(c) At infinity
(d) Between the optical centre of the lens and its principal focus
- A spherical mirror and a thin spherical lens have each of a focal length -15 cm. The mirror and lens are likely to be
(a) both concave
(b) both convex
(c) mirror is concave and lens is convex
(d) mirror is convex and lens is concave
- No matter how far you stand from a mirror, your image appear erect. The mirror is likely to be
(a) plane (b) concave
(c) convex (d) either plane or convex
- The radius of curvature of spherical mirror is 20 cm. What is its focal length?
- Name a mirror that can give an erect and enlarged image of an object.
- Why do we prefer a convex mirror as rear view mirror in vehicles?
- Find the focal length of a convex mirror whose radius of curvature is 32 cm.
- A concave mirror produces three times magnified (enlarged) real image of object placed at 10 cm in front of it. Where is the image located?
- A ray of light travelling in air enters obliquely into water. Does the light ray bend towards the normal or away from the normal? Why?
- Light enters from air to glass having refractive index 1.60. What is the speed of light in glass? The speed of light in vacuum is 3×10^8 ms⁻¹.

- Find out from table given below, the medium having highest optical density. Also, find the medium with the lowest optical density.

Absolute Refractive Index of Some Material Media

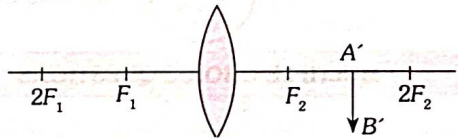
| Material medium | Refractive index | Material medium | Refractive index |
|-----------------|------------------|-------------------|------------------|
| Air | 1.0003 | Canada Balsam | 1.53 |
| Ice | 1.31 | Rock salt | 1.54 |
| Water | 1.33 | Carbon disulphide | 1.63 |
| Alcohol | 1.36 | Dense flint glass | 1.65 |
| Kerosene | 1.44 | Ruby | 1.71 |
| Fused quartz | 1.46 | Sapphire | 1.77 |
| Turpentine oil | 1.47 | Diamond | 2.42 |
| Benzene | 1.50 | | |
| Crown glass | 1.52 | | |

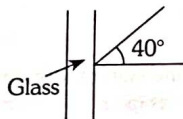
- The refractive index of diamond is 2.42. What is the meaning of this statement?
- Define 1 D of power of lens.
- A convex lens forms a real and inverted image of a needle at a distance of 50 cm from it. Where is the needle placed in of the convex lens, if the image is equal to the size of object? Also, find the power of the lens.
- Find the power of concave lens of focal length 2m.
- We wish to obtain an erect image of an object, using a concave mirror of focal length 15 cm. What should be the range of distance of the object from the mirror? What is the nature of image? Is the image larger or smaller than the object? Draw a ray diagram to show the image formation in this case.
- Name the type of mirror used in following situations:
(i) Headlight of car
(ii) Side/rear view mirror of vehicle
(iii) Solar furnace
Support your answer with a reason.
- One-half of a convex lens is covered with a black paper, will this lens produce a complete image of the object? Verify your answer experimentally.
- An object 5 cm in length is placed 25 cm away from a converging lens of focal length 10 cm. Draw the ray diagram and find position, size and nature of image formed.

22. A concave lens of focal length 15 cm forms an image 10 cm from the lens. How far is the object placed from the lens? Draw the ray diagram.
23. An object is placed at a distance of 10 cm from a convex mirror of focal length 15 cm. Find the position and nature of image.
24. The magnification produced by a plane mirror is +1. What does it mean?
25. An object 5 cm in length is placed at a distance of 20 cm in front of a convex mirror of radius of curvature 30 cm. Find the position of image, its nature and size.
26. An object of size 7 cm is placed at 27 cm in front of a concave mirror of focal length 18 cm. At what distance from the mirror should the screen be placed, so that a sharp focussed image can be obtained? Find the size and nature of image.
27. Find the focal length of a lens of power $-2D$. What type of lens is this?
28. A doctor has prescribed corrective lens of power $+1.5D$. Find the focal length of the lens. Is the prescribed lens diverging or converging?



CBSE PAST YEAR QUESTIONS

1. "The magnification produced by a spherical mirror is -3 ." List four informations you obtain from this statement about the mirror/image. [CBSE 2016]
2. Rohit wants to have an erect image of an object using a converging mirror of focal length 40 cm.
 (i) Specify the range of distance where the object can be placed in front of the mirror. Give reason for your answer.
 (ii) Will the image be bigger or smaller than the object?
 (iii) Draw a ray diagram to show the image formation in this case. [CBSE 2015]
3. A student wants to project the image of a candle flame on a screen 48 cm in front of a mirror by keeping the flame at a distance of 12 cm from its pole.
 (i) Suggest the type of mirror he should use.
 (ii) Find the linear magnification of the image produced.
 (iii) How far is the image from its object?
 (iv) Draw a ray diagram to show the image formation in this case. [CBSE 2014]
4. A spherical mirror produces an image of magnification -1 on a screen placed at a distance of 50 cm from the mirror.
 (i) Write the type of mirror.
 (ii) Find the distance of the image from the object.
 (iii) What is the focal length of the mirror?
 (iv) Draw the ray diagram to show the image formation in this case. [CBSE 2014]
5. (i) "The refractive index of kerosene is 1.44." What is meant by this statement?
 (ii) A ray of light strikes a glass slab at an angle of incidence equal to 30° . Find the refractive index of glass such that the angle of refraction is 19.5° . [CBSE 2015]
 (Take, $\sin 19.5^\circ = \frac{1}{3}$ and $\sin 30^\circ = \frac{1}{2}$)
6. (i) Draw a ray diagram to show the refraction of light through a glass slab and mark an angle of refraction and the lateral shift suffered by the ray of light while passing through the slab.
 (ii) If the refractive index of glass for light going from air to glass is $\frac{3}{2}$, find the refractive index of air for light going from glass to air. [CBSE 2016]
7. The absolute refractive indices of glass and water are $\frac{4}{3}$ and $\frac{3}{2}$ respectively. If the speed of light in glass is $2 \times 10^8 \text{ ms}^{-1}$, calculate speed of light in
 (i) vacuum (ii) water [CBSE 2015]
8. (i) In refraction of light through rectangular glass slab, the emergent ray is parallel to the direction of the incident ray. Why?
 (ii) What happens when a light ray is incident normally on one of the faces of a rectangular glass slab? [CBSE 2012]
9. A concave lens made of a material of refractive index n_1 is kept in a medium of refractive index n_2 . A Parallel beam of light is incident on the lens. Trace the path of rays of light parallel to principal axis incident on the concave lens after refraction when
 (i) $n_1 > n_2$ (ii) $n_1 = n_2$
 Give reason for each. [CBSE 2015]
10. Observe the following incomplete ray diagram of an object where the image $A'B'$ is formed after refraction from a convex lens.
- 
- On the basis of above information fill in the blanks.
 (i) The position of object AB would have been...
 (ii) Size of the object would have been...than the size of image. [CBSE 2015]
11. An object is placed at $2F_1$ in front of a convex lens. What is the
 (i) position (ii) size [CBSE 2020]
12. An object of height 5 cm is placed perpendicular to the principal axis of a concave lens of focal length 10 cm. If the distance of the object from the optical centre of the lens is 20 cm, determine the position, nature and size of the image formed using the lens formula. [CBSE 2020]
13. The image of an object formed by a lens of magnification -1 . If the distance between the object and its image is 60 cm, what is the focal length of the lens? If the object is moved 20 cm towards the lens, where would the image be formed? State reason and also draw a ray diagram in support of your answer. [CBSE 2016]



14. A student has three concave mirrors A, B and C of focal lengths 20 cm, 15 cm and 10 cm, respectively. For each concave mirror, he performs the experiment of image formation for three values of object distance of 30 cm, 10 cm and 20 cm. Give reasons for the following:
- For the three object distances, identify the mirror which will form an image equal in size to that of object. Find at least one value of object distance.
 - Out of the three mirrors, identify the mirror which would be preferred to be used for shaving purpose.
 - For the mirror B, draw ray diagram for image formation for any two given values of object distance. **[CBSE 2015]**
15. A student wants to project the image of a candle flame on the walls of the school laboratory by using a mirror.
- Which type of mirror should he use and why?
 - At what distance, in terms of focal length of the mirror, should he place the candle flame to get the magnified image on the wall?
 - Draw a ray diagram to show the formation of the image in this case.
 - Can he use this mirror to project a diminished image of the candle flame on the same wall? State 'how', if your answer is 'Yes' and 'why not', if your answer is 'No'. **[CBSE 2014]**
16. (i) Define optical centre of spherical lens.
(ii) A divergent lens has a focal length of 20 cm. At what distance should an object of height 4 cm from the optical centre of the lens be placed, so that its image is formed 10 cm away from the lens. Find the size of the image also.
(iii) Draw a ray diagram to show the formation of image in above situation. **[CBSE 2016]**
17. One half of a convex lens of focal length 10 cm is covered with a black paper. Can such a lens produce an image of a complete object placed at a distance of 30 cm from the lens? Draw a ray diagram to justify your answer.
A 4 cm tall object is placed perpendicular to principal axis of a convex lens of focal length 20 cm. The distance of the object from the lens is 15 cm. Find the nature, position and the size of the image. **[CBSE 2015]**
18. (i) Draw a ray diagram to show the formation of image by a convex lens when an object is placed in front of the lens between its optical centre and principal focus.
(ii) In the above ray diagram mark the object distance (u) and the image distance (v) with their proper signs (+ve or -ve as per the new cartesian sign convention) and state how these distances are related to the focal length (f) of the convex lens in this case.
(iii) Find the power of convex lens which forms a real and inverted image of magnification -1 of an object placed at a distance of 20 cm from its optical centre. **[CBSE 2018]**
19. (i) Two lenses have power of
(a) $+2D$ (b) $-4D$
What is the nature and focal length of each lens?
(ii) An object is kept at a distance of 100 cm from each of above lenses. Calculate
(a) Image distance and
(b) Magnification in each of the two cases. **[CBSE 2020]**
20. You have two lenses A and B of focal lengths $+10$ cm and -10 cm, respectively. State the nature and power of each lens. Which of the two lenses will form a virtual and magnified image of an object placed 8 cm from the lens? Draw a ray diagram to justify your answer. **[CBSE 2020]**



NTSE & OLYMPIAD QUESTIONS

SECTION A MULTIPLE CHOICE QUESTIONS

DIRECTIONS: This section contains multiple choice questions. Each question has 4 choices (a), (b), (c) and (d) out of which only one is correct.

- Rays from the sun converge at a point 15 cm in front of a concave mirror. Where should an object be placed so that size of its image is equal to the size of the object?
 - 15 cm in front of the mirror
 - 30 cm in front of the mirror
 - between 15 cm and 30 cm in front of the mirror
 - more than 30 cm in front of the mirror.
- Under which of the following conditions a concave mirror can form an image larger than the actual object?
 - When the object is kept at a distance equal to its radius of curvature
 - When object is kept at a distance less than its focal length
 - When object is placed between the focus and centre of curvature
 - When object is kept at a distance greater than its radius of curvature
- For an object at infinity, a concave mirror produces an image at its focus which is
 - enlarged (b) virtual
 - erect (d) real, inverted and diminished
- According to the laws of reflection
 - angle $i =$ angle r (b) $\sin i = \sin r$
 - $\sin i / \sin r =$ constant (d) All of these
- An inverted image can be seen in a convex mirror,
 - under no circumstances
 - when the object is very far from the mirror
 - when the object is at a distance equal to the radius of curvature of the mirror
 - when the distance of the object from the mirror is equal to the focal length of the mirror
- Which of the following statements is true?
 - A convex lens has 4 dioptre power having a focal length 0.25 m
 - A convex lens has -4 dioptre power having a focal length 0.25 m
 - A concave lens has 4 dipotre power having a focal length 0.25 m
 - A concave lens has -4 dioptre power having a focal length 0.25 m

SOCIAL SCIENCE

❖ Learn and revise the chapters taught in the month of April and May.

❖ Pre-Reading Task

Read the following chapters and find out the meanings of difficult words and write them in the book with pencil. Find out the answers at least 15 one mark or one word questions and write them in your fair notebook.

Eco. Ch-3 'Money and Credit'

D.P. Ch-5 'Political Parties'

History Ch-2 'Nationalism In India'

Geo Ch-5 'Minerals and Energy Resources'

❖ **Prepare a project on any of the topics given below:**

- A) Consumer Awareness
- B) Sustainable Development
- C) Social Issues

***Note: Covering (10-15 pages)**

❖ **Solve the assignment in fair register.**

I.T.

Read Sessions Unit- 2(Part B) Electronic Spreadsheet

Session 1: Scenario Analysis, **Session 2:** Linking Spreadsheet Data, **Session 3:** Share and Review a Spreadsheet, **Session 4:** Macros in Spreadsheet

Define the following: (Write on A-4 size sheet)

1) Client, 2) Server, 3) Website, 4) Webpage, 5) Web Portal, 6) Web Browser, 7) Web Client, 8) Blog, 9) URL ,10) Wi-fi

Learn Unit 1(Part B) Digital Documentation

Assignment

For Roll No. 1 to 20:

Make a chart on " Use of Internet"

For Roll No. 21 to 40:

Make a collage on " Common Instant Messaging Application".

Activity:

Make a greeting card on "Yoga Day" in open office writer and take print out, paste it in your Fair notebook.