Holidays Home-work

Class: X

- Make a power point presentation (having 10 slides) on any topic. Save the file and mail to the id given below:

  mona.t19145@gmail.com

- Revise Unit-1 of book-I and book-II and read Unit-2 of book-I

- Find 20 internal Q/A from both chapters (Unit-1 of each book) and write in your IT notebook.

- Revise all practical topic of "Writer"

  - Revise given Q/A and do in IT notebook.

Note- Mention your name, class and roll number at the mailing time.

Class-10th   Sub:IT (Book-1)   Q/A of ch-1

1. **What is Communication?**

Answer – The act of giving, receiving, and sharing information is known as communication. Signs and signals provide information. Communication can take the form of speaking, writing, or any other medium.

The word 'Communication' comes from the Latin word communicare, which means 'to share'.

2. How many types of Communication methods?

Answer – There are main three types of communication methods –

- Verbal communication
- Non-verbal communication
- Visual communication

3. What are the important parts of communication?

Answer – The important parts of communication is –

- Transmitting—The message is sent by the sender through one or more mediums.
- Listening— Listening and understanding by the receiver.
- Feedback—To complete the communication cycle, the receiver provides feedback to the sender on their understanding of the message.

4. What are various elements of a communication cycle?

Answer – The various elements of a communication cycle are –

- Sender: the person beginning the communication.
- Message: the information that the sender wants to convey.
- Channel: the means by which the information is sent.
- Receiver: the person to whom the message is sent.
- Feedback: the receiver's acknowledgement and response to the message.

5. What are the seven elements that influence the communication skills?

Answer – There are seven different factors which affecting Perspectives in communication –

- Language
- Environment
- Visual Perception
- Culture
- Prejudice

- Feelings
- Past Experience

6. What are the right methods of communication?

- Answer – Right methods of communication depends on –
- Target audience
- Costs
- Kind/ Type of information
- Urgency/ Priority

7. What is effective communication?

Answer – There are 7 C's effective communication which are applicable for both written as well as oral communication. These are as follows –

a. Clear – Always say clearly, what you want to say.

b. Concise – Always use simple language and say only what is required.

c. Concrete – Always use proper words and phrases in the sentences.

d. Correct – Always use correct spelling and grammar in the sentences.

e. Coherent – Your word should be related to the main topic and your word should make sense.

f. Complete – Your message should be complete and have all the needed information.

Courteous – Be honest, respectful and friendly with others.

8. What is verbal communication and its type?

Answer – Sounds, words, language, and speech are all examples of verbal communication. Speaking is one of the most effective and often used in verbal communication methods.

a. Interpersonal Communication – This type of communication is a one – on – one communication that takes place between two people. It can be formal or informal.

b. Written Communication – This method of communication entails the use of written words. Letters, circulars, reports, manuals, SMS, social media chats, and so on are all examples.It could be a group of two or more persons.

c. Small Group Communication – When there are more than two people participating, this form of communication occurs. Each participant has the opportunity to interact and speak with the others.

d. Public Communication – The communication takes place when one individual addresses a large group of audience.

9. What are the advantages and disadvantages of verbal communication?

Answer – Advantage of verbal communication are –

a. Time Saving – We can express our thoughts easily and quickly and it is an easier form of communication.

b. Quick Feedback – We can get a quick response from the listener.

Disadvantages of verbal communication

a. Cultural Difference – The cultural difference is the main disadvantage of verbal communication

b. Language barriers – Difficult to share thoughts or ideas in different languages.

10. Write down the different types of verbal communication. Give an example for each type.

Answer – Verbal communication can be divided into two categories.

a. Oral or Spoken communication – Oral Communication involves Face-to-face communication, Teaching in classroom or talking on the phone is an example of oral or spoken communication.

b. Written Communication – Written Communication involves written or typed words. Banners, Articles, Notes, Writing letters, email, and Short Messaging Services are examples of written communication.

11. What is public speaking?

Answer – Speaking face – to – face to a live audience or in front of a large group is known as public speaking, you can use the 3Ps method to get over your fears, and become a confident speaker.

The 3Ps method is –

a. Prepare

b. Practice

c. Perform

Session 3: Non – verbal Communication

12. What is non-verbal communication?

Answer – Without using word if you are sending some information to others is known as non- verbal communication, Some of the non – verbal communication is –

a. Eye contact

b. Gestures

c. Expressions

d. Posture

e. Space

f. Para Language

g. Touch

13. What is the importance of Non-verbal communication?

Answer – In our day-to-day communication

- 55% communication is done using body movements, face, arms, etc.
- 38% communication is done using voice, tone, pauses, etc.
- only 7% communication is done using words.
- around 93% of our communication is non-verbal.

14. What is the purpose of non – verbal communication?

Answer –

- When we communicate with the correct gestures, our message becomes more effective.
- We can know our audience's reaction and change our conversation accordingly if we understand nonverbal communication.
- Using the right gestures and postures is a sign of professionalism and etiquette.
- We can utilize our hand movements to exchange communications if verbal messages are blocked by noise, distance, or other factors. For example, placing a finger on the lips indicates the need for silence while nodding the head is the same as saying 'yes'.

15. Type of non-verbal communication?

Answer – Type of non – verbal communication are –

1. Facial expressions – The movement and changes of the face are the facial expressions. Many times facial expressions show the feelings of a person. For example, expressing your thoughts using a smile, when we are happy, or when we are sad.
2. Posture – Postures means body of the positions, postures shows how confident you are and your emotional feelings. For example, straight body posture means confidence.

3. Gestures or Body language – Gestures means with the help of hands or head if you are sharing any idea or meaning. for example pointing, waving and using our hands when speaking.
4. Touch – Some time we communicate using touch we also share messages to others, for example hand shaking and patting on the back.
5. Space – When the two people are communicating and you will find some space between these two people depending on closeness or intimacy between them.
6. Eye contact – Maintaining eye contact is very important when you are talking about interest, whereas, looking at any other side can make the other person feel ignored.
7. Paralanguage – Tone of our voice, speed and volume that makes a difference in the meaning is a paralanguage.

16. What is Visual Communication?

Answer – Visual communication is the process of exchanging messages mainly through images or photographs.

Example of visual communication are

- Under construction sign
- Danger warning
- Sign of Under CCTV surveillance
- Communication Skills Class 10 Questions and Answers

Session 4: Communication Cycle and Importance of Feedback

17. What is feedback in communication skills?

Answer – The communication cycle is incomplete without feedback. It is essential for the effective communication that the sender receives confirmation from the receiver that the message was received.

The receiver provides feedback on the received message while the transmitter sends information.

Feedback can be positive or negative. A good feedback is always

- Specific
- Helpful
- Kind

18. How many types of Feedback in communication skills?

Answer – There are basically three types of feedback.

- Positive Feedback
- Negative Feedback

- No Feedback

19. What are the good feedback in communication skills?

Answer – A good feedback is one that is –

a. Specific: General comment should be avoided. To clarify your statement, try to provide examples. Rather than giving advice let the receiver decide what to do with your feedback.

b. Timely: Always respond on time, because if input is delayed for too long, it loses its impact.

c. Polite: While sharing feedback is necessary, the recipient should not be insulted by the input's language.

d. Offering continuing support: Feedback should be shared on a regular basis. Let recipients know you're available for help once you've given them feedback.

20. Importance of Feedback?

Answer – Most important factors of feedback is –

- It validates effective listening: It verifies effective listening by ensuring that the person providing feedback is understood and that their feedback is useful.
- It motivates: People can be motivated by positive feedback to improve their working relationships and continue doing the good job that has been recognized.
- It boosts learning: It's critical to get feedback in order to stay on track with your goals, improve your planning, and generate better products and services.
- It improves performance: Feedback can assist in making better judgments in order to improve and boost performance.

Session 5: Barriers to effective communication

21. What is effective communication?

Answer – We now understand that communication can take three forms: nonverbal, verbal, and visual. All of these strategies, however, will only be effective if we adhere to the fundamental principles of professional communication.

Clear, Concise, Concrete, Correct, Coherent, Complete, and Courteous are the acronyms for these 7 Cs qualities.

22. Barriers of Effective Communication?

Answer – Barriers of the Effective Communication are –

a. Physical Barriers – The environmental and natural conditions that operate as a barrier in communication when conveying messages from sender to receiver are referred to as physical barriers.

b. Linguistic Barriers – A language barrier to communication is the inability to communicate using a language. The most common communication barriers are language barriers, which lead to misunderstandings and misinterpretations between people.

c. Interpersonal Barriers – When a sender's message is received differently than intended, it creates barriers to interpersonal contact. It's also tough to communicate with someone who refuses to converse or express their emotions or opinions.

d. Organizational Barriers – Formal hierarchical structures are used to create organizations that adhere to performance standards, rules & regulations, processes, policies, and behavioral norms, among other things.

e. Cultural Barriers – When people from different cultures are unable to understand each other's languages, it causes problems and inconveniences.

23. What are the different ways to overcome from communication barriers?

Answer –

- Use simple language
- Try to communicate in person as much as possible
- Do not form assumptions on culture, religion or geography
- Take help of a translator to overcome differences in language
- Use visuals
- Be respectful of other's opinions
- Session 6: Writing Skills – Parts of Speech

24. What are Written Skills?

Answer – If you are sending any message or instruction through writing is known as written communication. Written communication is important because it communicates the message with clarity and ease.

How to improve writing skills

a. Improve your Vocabulary

b. Capitalization Rules

c. Punctuation

d. Basic parts of speech

25. What are the basic parts of speech in the English Language?

Answer – There are eight basic parts of speech in the English language. These are none, pronoun, verb, adjective, adverb, preposition, conjunction and interjection.

a. Noun – Nouns is the name of a person, place, animal or thing. This is also called 'naming words.

b. Pronoun – A pronoun is used in place of a noun.

c. Adjectives – Adjectives are words that describe other words.

d. Verbs – Verbs are words that show action.

e. Adverbs – Adverbs are words that add meaning to verbs, adjectives, or other adverbs.

f. Preposition – A preposition is a word palace before a noun or pronoun.

g. Conjunction – A conjunction is a word that connects two words, phrases, or clauses.

h. Interjection – A word used to communicate emotion is called an interjection.

26. Definition of pronunciation?

Answer – Many words in English are not pronounced the way they are spelt, so if you don't say them right, others won't understand what we're saying. Pronunciation is defined as the act or style of pronouncing a word.

27. What are the various parts of the Sentence?

Answer – A subject and a verb make up a sentence. There is an object in some of the sentences. The subject is generally a noun, which is a term that refers to a person or thing who performs a specific activity.

The verb comes after the subject and indicates that something is being done. An object, which usually comes after the verb, receives the action.

There are three different types of parts of sentences –

a. Subject

b. Verb

c. Object

28. How many types of objects are there in the English language?

Answer – Normally, the object comes after the verb phrase. The meaning of the verb determines whether or not an object is present. In English, there are two types of objects.

a. Direct – The effects of action are known as direct objects. The queries 'what' and 'whom' are answered by a direct object. Ramesh spent the entire day collecting honey. Honey is made the direct object.

b. Indirect – The queries 'to whom', 'for whom', 'to what', and 'for what' are all answered by an indirect object. In the statement "Imran gave a gift to his mother," for example. The verb is "gave," and there are two objects in the sentence: "gift" and "mother.".

29. What are the Paragraphs?

Answer – A paragraph is made up of a set of sentences, and paragraphs support the reader in reading the sections by dividing the material into separate portions.

If you're writing about your school, the opening paragraph could include sentences that describe the school's name, location, size, and other characteristics.

In the next paragraph, you can use sentences to convey what you admire about your school.

Holidays Homework
Class – X
Subject – Hindi क्षितिज

प्र.1. निम्नलिखित पद्यांश को पढ़कर पूछे गए प्रश्नों के उत्तर लिखो ।

कौसिक सुनहु मंद येहु बालकु । कुटिल कालबस निज कुल घालकु ॥
भानुबंस राकेस कलंकू । निपट निरंकुसु अबुधु असंकू ॥
कालकवलु होइहि छन माहिं । कहौं पुकारि खोरि मोहि नाहीं ॥
तुम्ह हटकहु जौं चहहु उबारा । कहि प्रतापु बलु रोषु हमारा ॥
लखन कहेउ मुनि सुजसु तुम्हारा । तुम्हहि अछत को बरनै पारा ॥
अपने मुंह तुम्ह आपनि करनी । बार अनेक भांति बहु बरनी ॥

प्र.क) कवि, कविता तथा मूलग्रंथ का लिखिए ।
ख) इस पद्यांश का अर्थ लिखो ।
ग) परशुराम ने विश्वामित्र को क्या शिकायत की और क्यों ?
घ) परशुराम ने लक्ष्मण के बारे में क्या-क्या कहा ?
ङ) लक्ष्मण की किस बात से परशुराम नाराज थे ?
च) प्रस्तुत पद्यांश के आधार पर परशुराम के स्वभाव की विशेषताएँ लिखो ।

प्र.2 निम्नलिखित गद्यांश के आधार पर पूछे गए प्रश्नों के उत्तर लिखो:

किंतु खेतीबारी करते, परिवार रखते भी बालगोबिन भगत साधु थे – साधु की सब परिभाषाओं में खरे उतरने वाले । कबीर को साहब मानते थे, उन्हीं के गीतों को गाते, उन्हीं के आदेशों पर चलते । कभी झूठ नहीं बोलते थे, खरा व्यवहार रखते थे । किसी से भी दो-टूक बात करने में संकोच नहीं करते, न किसी से

प्र.5 निम्नलिखित वाक्यों में आश्रित उपवाक्य अलग करके 3
बताइए कि वह किस प्रकार का है अर्थात भेद लिखो।
जैसे - रमेश ने कहा कि मैं आज दिल्ली नहीं जाऊंगा।
उत्तर- मैं आज दिल्ली नहीं जाऊंगा ' संज्ञा उपवाक्य है।

क) उसने कहा कि मैं कल आगरा जाऊंगा।

ख) जहाँ-जहाँ वह गया, उसका बहुत सम्मान हुआ।

ग) मेरे जीवन का लक्ष्य है कि मैं डॉक्टर बनूँ।

घ) वह मजदूर नहीं है, जो कल छत से गिर गया था।

ड़) मैंने सोचा कि वह जरूर आएगा।

च) यदि परिश्रम करोगे तो अवश्य फल पाओगे।

छ) जहाँ तुम रहते हो वहाँ सफाई है।

प्र.6 निम्नलिखित वाक्यों के वाच्य परिवर्तन कीजिए -

क) हम स्वामी दयानंद को नहीं भूल सकते। (कर्मवाच्य)

ख) व्यापों द्वारा पत्र लिखे जाते हैं। (कर्तृवाच्य में)

ग) हम नहीं हँस सकते। (भाववाच्य में)

घ) सौम्या सुबह को उठ नहीं सकी। (भाववाच्य)

ड़) मैं इस गर्मी में सो नहीं सकता। (भाववाच्य में)

च) लड़कों के द्वारा खूब पढ़ा गया। (कर्तृवाच्य में)

छ) भारतवासी महात्मा गांधी को नहीं भूल सकते। (कर्मवाच्य में)

प्र.7 निम्नलिखित वाक्यों में उद्देश्य व विधेय छाँटकर लिखो।

क) एक नटखट बालक खेल रहा है।

ख) जया अपनी सखियों के साथ मेला देखने गई।

ग) पुलिस के आने से पहले ही चोर भाग गए थे।

घ) ममता की मूर्ति माँ ने रोते हुए बच्चे को गोद में उठा लिया।

ड़) पंखियों ने दाने चुग लिए।

च) गरीब आदमी को भोजन दो।

छ) दीपक रोचक कहानियाँ पढ़ रहा है।

क्र.८ निम्नलिखित संकेत बिंदुओं के आधार पर लगभग ८०/१०० शब्दों में अनुच्छेद लिखिए।

क) परीक्षा से पहले मेरी मनोदशा :
• परीक्षा के नाम से भय • पर्याप्त तैयारी • प्रश्नपत्र देखकर भय दूर हुआ ।

ख) कोरोना वायरस :
• कोरोना का संक्रमण • बचाव के उपाय • लॉकडाउन के सकारात्मक प्रभाव ।

ग) जंक फ्रूड :
• जंकफ्रूड क्या होता है ?
• युवा पीढ़ी और जंकफ्रूड • जंक फ्रूड खाने के दुष्परिणाम

प्रश्न ९. एक दैनिक समाचार पत्र के संपादक को अपनी कविता प्रकाशित करवाने का अनुरोध करते हुए एक पत्र लिखिए ।

प्र.१०. छात्रावास में रहने वाले अपने छोटे भाई को एक पत्र लिखिए जिसमें प्रातःकाल नियमित रूप से योग एवं प्राणायाम का अभ्यास करने के लिए प्रेरित किया गया हो ।

प्र.११. आपकी कक्षा के कुछ छात्र छोटी कक्षाओं के विद्यार्थियों को सताते हैं । इस समस्या के बारे में प्राचार्य जी को पत्र लिखकर बताएँ और कोई उपाय भी सुझाइए ।

क्र.१२. आपके विद्यालय में वार्षिकोत्सव समारोह का आयोजन होने जा रहा है । इसके लिए २५-५० शब्दों में विज्ञापन तैयार कीजिए ।

क्र.१३. आपके शहर में विश्व पुस्तक मेले का आयोजन होने जा रहा है । ऐसे में २५-५० शब्दों में एक विज्ञापन तैयार कीजिए ।

प्र.१४. अपने मित्र को अंतर्राष्ट्रीय योग दिवस के अवसर पर ३०-४० शब्दों में संदेश लिखिए ।

प्र.१५. अपनी जान-पहचान वाले सभी बंधु-बांधवों को अपने घर कीर्तन भजन संध्या के लिए आमंत्रित करते हुए ३०-४० शब्दों में संदेश लिखिए ।

9. निम्नलिखित गद्यांश को पढ़कर दिए गए प्रश्नों के उत्तर दीजिए—

ऐसे लोग मोह को बढ़ाकर, तृष्णा को उत्पन्न कर अपनी दयनीय स्थिति बना लेते हैं। प्रभु तो उनकी सहायता करते हैं, जो अपनी सहायता स्वयं करते हैं। आत्मनिर्भरता स्वावलंबियों की आराध्य देवी है। इस देवी-उपासना से उनका आलस्य अंतर्धान हो जाता है, भयभीत होकर भाग जाता है, कायरता नष्ट हो जाती है तथा संकोच समाप्त हो जाता है। आत्मविश्वास उत्पन्न होता है, आत्मगौरव जाग्रत होता है। स्वावलंबी व्यक्ति कष्टों और बाधाओं को रौंदता हुआ कंटकाकीर्ण पथ पर निर्भीकतापूर्वक आगे बढ़ता है।

स्वावलंबन मानव में गुणों की प्रतिष्ठा करता है। आत्मसम्मान, आत्मविश्वास, आत्मबल, आत्मनिर्भरता, आत्मरक्षा, साहस, संतोष, धैर्य आदि गुण स्वावलंबन के सहोदर हैं। ऐसे महान, प्रचंड, शक्ति-संपन्न स्वावलंबी मनुष्य समाज तथा राष्ट्र का जीवन हैं। ऐसे व्यक्ति समाज तथा राष्ट्र के लिए बल, गौरव एवं उन्नति का द्वार हैं। सुख, शांति तथा सफलता के प्रदाता हैं, आत्मनिर्भरता के परिचायक हैं, शौर्य, शक्ति तथा समृद्धि के साधन हैं।

स्वावलंबन व्यक्ति, राष्ट्र तथा मानव मात्र के जीवन में सर्वांगीण सफलता प्राप्ति का महामंत्र हैं। जीवन का आभूषण है। कर्तव्य-शृंखला की प्रथम कड़ी है, वीरों तथा कर्मयोगियों का इष्टदेव है और सर्वांगीण उन्नति का आधार है।

प्रश्न

1. आत्मनिर्भरता किसकी आराध्य देवी है? इसकी उपासना से क्या होता है?   2
2. स्वावलंबन मनुष्य•में किन गुणों की प्रतिष्ठा करता है?   2
3. सफलता का महामंत्र क्या है और क्यों?   2
4. यह किसका इष्टदेव है?   1
5. सर्वांगीण उन्नति का आधार क्या है?   1

10. निम्नलिखित गद्यांश को पढ़कर दिए गए प्रश्नों के उत्तर दीजिए—

एक आलोक जाता रहा और वह सूर्य जो हमारे जीवन को गरमी और प्रकाश देता था, डूब गया और हम ठंड और अंधकार में काँप रहे हैं। फिर भी, वह न चाहेगा कि हम ऐसा अनुभव करें। आखिर उस आलोक ने जिसे हमने इतने वर्षों तक देखा, दैवी ज्वाला के उस मनुष्य ने, हमें भी बदला और हम जैसे भी हैं, इन वर्षों में उन्हीं के बनाए हुए हैं, और उस दैवी ज्वाला से हममें से बहुतों ने एक छोटी-सी चिंगारी ग्रहण की है, जिसने हमें शक्ति दी है, और जिसने हमसे कुछ हद तक उनके निर्दिष्ट मार्ग पर काम कराया है, इसीलिए यदि हम उनकी प्रशंसा करते हैं तो हमारे शब्द कुछ तुच्छ लगते हैं, और यदि हम उनकी प्रशंसा करते हैं तो कुछ हद तक हम अपनी भी प्रशंसा करते हैं। बड़े आदमियों और विख्यात आदमियों के काँसे और संगमरमर के स्मारक बनाए जाते हैं, लेकिन यह ज्योति पुरुष अपने जीवनकाल में अनेक कर्तव्यों द्वारा करोड़ों-करोड़ों हृदयों में प्रतिष्ठित हुआ, इससे हम सभी चाहे थोड़ी मात्रा में ही सही कुछ-कुछ वैसे ही बन गए जैसे कि वे थे। इस प्रकार वे सारे भारत में फैल गए, न केवल महलों में, या चुनी हुई जगहों में या सभाओं में, बल्कि छोटे और पीड़ित लोगों की प्रत्येक झोंपड़ी और कुटिया में। वे करोड़ों व्यक्तियों के हृदयों में जीवित हैं, और अनंत युगों तक जीवित रहेंगे।

प्रश्न

1. एक आलोक जाता रहा—लेखक ने ऐसा क्यों कहा है?   2
2. उस देवी ज्वाला ने क्या कर दिखाया?   2
3. वे संपूर्ण भारत में कैसे फैल गए?   2
4. गद्यांश में किस महापुरुष की बात हो रही है?   1
5. विख्यात व्यक्तियों के समारक कैसे बनाए जाते हैं?   1

1. निम्नलिखित काव्यांश को पढ़कर नीचे दिए गए प्रश्नों के लिए सही विकल्प चुनकर लिखिए—

1 लोहे के पेड़ हरे होंगे, तू गान प्रेम का गाता चल,
नम होगी यह मिट्टी ज़रूर, आँसू के कण बरसाता चल।
सिसकियों और चीत्कारों से हो चाहे जितनी भरी धरा
कंकालों का हो ढेर, खप्परों से चाहे हो पटी धरा।
आशा के स्वर का भार, पवन को लेकिन लेना ही होगा,
जीवित स्वप्नों के लिए मार्ग, मुर्दों को देना ही होगा।
रंगों के सातों घट उँड़ेल, यह अँधियाली रंग जाएगी,
ऊषा को सत्य बनाने को, जावक नभ पर छितराता चल।
लोहे के पेड़ हरे होंगे, तू गान प्रेम का गाता चल,
नम होगी यह मिट्टी जरूर, आँसू के कण बरसाता चल।

प्रश्न—

1. 'लोहे के पेड़' किसे कहा गया है?
   (क) लोहे से बने पेड़ों को   (ख) लोहे जैसे भावनाशून्य लोगों को
   (ग) मशीनी युग के कठोर-हृदय मानव को   (घ) साहसी और निर्मम मनुष्य को

2. 'खप्परों से चाहे हो पटी धरा' से क्या आशय है?
   (क) युद्धों के विनाश से भरी धरती   (ख) शिवजी का तांडव नृत्य
   (ग) ज़मीन पर खप्पर पड़े रहना   (घ) आतंकवाद का असर

3. 'रंगों के सातों घट' से क्या अभिप्राय है?
   (क) रंगों भरा जीवन   (ख) सात रंगों के सात घड़े
   (ग) आशा और खुशियों से भरा जीवन   (घ) रंगों की वर्षा

4. 'जावक' शब्द का क्या अर्थ है?
   (क) टेसू   (ख) महावर
   (ग) लाल   (घ) लहू

5. 'जीवित सपनों के लिए मार्ग मुर्दों को देना ही होगा' में किस भाव की ओर संकेत है?
   (क) पुरानी रूढ़ियों को नए युग के लिए हटना पड़ेगा
   (ख) जीवित व्यक्तियों के लिए मुर्दे हटाने पड़ेंगे
   (ग) मुर्दा कायरों को हटना पड़ेगा
   (घ) नए लोगों के आने की व्यवस्था।

Activity — 12

⇒ To verify the distance formula graphically

Activity 13

⇒ To verify the section formula graphically

Activity — 17

⇒ To verify that the sum of three sectors of the same radii 'r' formed at the vertices (as centre) of any triangle is $\dfrac{\pi r^2}{2}$

Activity - 21

⇒ To make a right circular cone of a given slant height (l) and base circumference ($2\pi r$)

Activity - 22

⇒ To obtain the formula for lateral (curved) surface area of a right circular cone experimentally.

Activity — 26

⇒ To find the mode graphically and verify its algebraically

Activity — 27

⇒ To find the median graphically and verify its algebrically.

Activity - 2

⇒ To find zeroes of a polynomial graphically.

Activity - 3

⇒ To verify the condition of for consistency / inconsistency of a pair of linear equation in two variables by graphical method.

Activity - 4

⇒ To obtain the solution of a quadratic equation $x^2 + 4x = 32$ by the method of completing the square, geometrically.

Activity = 5

⇒ To verify that the given sequence is an arithmetic progression.

Activity = 6

⇒ To verify that the sum of first n natural number is $\dfrac{n(n+1)}{2}$

Activity = 7

⇒ (I) → To find the sum of first n odd natural numbers graphically.

II → To find the sum of first n even natural numbers graphically.

Activity = 8

⇒ To verify the Basic Proportionality Theorem (Thales Theorem.

Activity = 10

⇒ To verify that the medians of a triangle concur at a point called the centroid, which always lie inside the triangle.

Activity = 11

⇒ To verify Pythagoras Theorem

Chapter -1 [from Sample papers]

1. Find HCF & LCM for the numbers 100 and 190. (1)

2. HCF $(54, 336) = 6$. Find LCM $(54, 336)$ (2)

3. Let d be the HCF of 24 and 36. Find two numbers a and b such that $d = 24a + 36b$ (3)

4. Show that $2 + \sqrt{5}$ is an irrational number (3)

5. A number which cannot be written in the form $\frac{p}{q}$ where p and q are integers and $q \neq 0$, what we call this number? (1)

6. Explain why $7 \times 11 \times 13 + 13$ and $7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1 + 5$ are composite numbers (2)

7. Two tankers contain 620 litres and 840 litres of diesel respectively. Find the max. capacity of a container which can measure the diesel of both the tankers exact number of times. (3)

8. without actually dividing, write the decimal expansion of the rational number $\frac{147}{125}$. (1)

9. Find the largest number that divides 31 and 99 leaving remainders 5 and 8 respectively. (3)

10. Write the HCF of the smallest composite and smallest prime numbers. (1)

11. Is there any natural number n for which 4^n ends with digit 0? (2)

12. Find HCF of 30, 72, and 432 (1)

13. Find LCM of Numbers whose prime factorisation are expressible as 3×5^2 and $3^2 \times 7^2$ (1)

14. Use Euclid's division algorithm to find the HCF of 867 and remainder (2)

15. Use Euclid's division algorithm, find the largest number that divides 1251, 9377 and 15628 leaving remainder 1, 2, 3 respectively. (3)

1. In the figure, graph of a polynomial $p(x)$ is given. Find the zeroes of $p(x)$
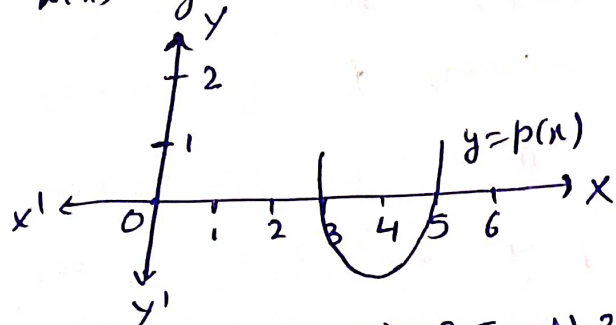
a) -3,4   b) 3,5   c) -3,5   d) 3,4

2. graph of a quadratic polynomial is:
a) straight line b) circle c) parabola
d) ellipse

3) If graph of a poly^n does not intersect the X-anis but intersect at Y-anis in one point, then number of zeroes of the poly^n is equal to:
a) 0   b) 1   c) 0 or 1   d) None of these.

4) A polynomial of degree n has:
a) only 1 zero b) enactly n zeroes,
c) atmast n zeroes, d) more than n

5) The manimum number of zeroes which a quadratic poly^n can have is:
a) one   b) two   c) three
d) None of these.

6) The zeroes of the quadratic pol^n $x^2 + 25x + 156$ are :
a) both positine b) both negatine
c) one positine and one negatine
d) can't be determined.

7) If one root of the poly^n $f(x) = 3x^2 + 11x + p$ is reciprocal of the other, then the value b is :
a) 0   b) 3   c) $\frac{1}{3}$ d) -3

8) If the sum of the zeroes of the quadratic polynomial $kx^2 + 4x + 3k$ is equal to their product, then the value of k is:
a) $-\frac{3}{4}$ b) $\frac{3}{4}$ c) $\frac{4}{3}$ d) $-\frac{4}{3}$

9) If α, β, γ be the zeroes of the poly^n $p(x)$ such that $(\alpha + \beta + \gamma) = 3$, $(\alpha\beta + \beta\gamma + \gamma\alpha) = -10$ and $\alpha\beta\gamma = 24$, then $p(x) =$
a) $x^3 + 3x^2 - 10x + 24$
b) $x^3 - 3x^2 - 10x - 24$
c) $x^3 - 3x^2 - 10x + 24$ d) none of these

10) The product of zeroes of the poly^n $dx^3 + cx^2 + bx + a$ is :
a) $\frac{d}{a}$ b) $\frac{a}{d}$ c) $-\frac{d}{a}$ d) $-\frac{a}{d}$

11) The zeroes of the poly^n $x^3 - x$ are :
a) $0, \pm 2$, b) $0, \pm 1$, c) $0, \pm 3$
d) $0, \pm 4$

12) If α, β, γ are the zeroes of the poly^n $x^3 + px^2 + qx + r$ then $\left(\frac{1}{\alpha\beta} + \frac{1}{\beta\gamma} + \frac{1}{\gamma\alpha}\right) =$
a) $\frac{p}{r}$ b) $-\frac{p}{r}$ c) $\frac{q}{r}$,   d) $-\frac{q}{r}$

13) If α, β are the zeroes of the poly^n $x^2 + 5x + c$ and $\alpha - \beta = 3$, the $c =$
a) 0   b) 1   c) 4   d) 5

14) If α, β are the zeroes of the poly $f(x) = x^2 - p(x+1) - q$, then $(\alpha + 1)(\beta + 1)$ is
a) $q-1$ b) $1-q$ c) q d) $1+q$

14) If α, β, γ are zeroes of the polynomial $f(x) = x^3 - 3px^2 + qx - r$ such that $2\beta = \alpha + \gamma$ then:

a) $2p^3 = pq - r$ b) $2p^3 = pq + r$

c) $p^3 = pq - r$ d) None of these

15) If α, β are zeroes of the polyn $p(x) = ax^2 + bx + c$, then

$$\frac{1}{\alpha^2} + \frac{1}{\beta^2} = $$

a) $\dfrac{b^2 - 2ac}{a^2}$ b) $\dfrac{b^2 - 2ac}{c^2}$

c) $\dfrac{b^2 + 2ac}{a^2}$ d) $\dfrac{b^2 + 2ac}{c^2}$

16) If one of the zeroes of the quadratic polyn $(k-1)x^2 + kx + 1$ is -3, then the value of k is:

a) $\dfrac{4}{3}$ b) $\dfrac{-4}{3}$ c) $\dfrac{2}{3}$ d) $\dfrac{-2}{3}$

17) The number of zeroes that polynomial $f(x) = (x-2)^2 + 4$ can have is:

a) 1   b) 2   c) 0   d) 3

18) For a given value of k, the product of the zeroes of $x^2 - 3kx + 2k^2 - 1$ is 7, then zeroes are:

a) rational numbers

b) irrational numbers

c) one rational, other irrational

d) None of the above.

19) The zeroes of the poly $x^2 - 3x - m(m+3)$ are:

a) $m, m+3$ b) $-m, m+3$

c) $m, -(m+3)$ d) $-m, -(m+3)$

20) If α and β are the zeroes of the polyn $2x^2 - 13x + 6$, then $\alpha + \beta$ is:

a) -3 b) 3   c) $\dfrac{13}{2}$ d) $-\dfrac{13}{2}$

21) If $x = 0.\overline{7}$, then $2x$ is

a) $1.\overline{4}$ b) $1.\overline{5}$ c) 1.54

d) $1.\overline{45}$

22) If $a+b+c = 0$, then a zero of the polyn $ax^2 + bx + c$ is

a) 1   b) 0   c) -1 d) $\dfrac{1}{2}$

23) If two of the zeroes of a cubic polyn are zero, then it does not have:

a) Constant term

b) term of x

c) term of x^2

d) None of these

24) If the zeroes of the quadratic polyn $ax^2 + bx + c$ are both negative, then a, b and c all have the:

a) same sign   b) +ve sign

c) $-$ve sign   d) None of these

1) Find the zeroes of each of the following poly^n and verify the relationship between the zeroes and co-efficients

   a) $f(x) = x^2 + 2\sqrt{2}x - 6$

   b) $p(x) = \sqrt{3}x^2 + 10x + 7\sqrt{3}$

   c) $p(x) = x^2 - (\sqrt{3}+1)x + \sqrt{2}$

   d) $p(y) = 7y^2 - \frac{11}{3}y - \frac{2}{3}$

2) For each find a quadratic poly^n whose sum and product resp. of the zeroes are as given. Also find the zeroes of these poly^n.

   a) $\frac{21}{8}, \frac{5}{16}$

   b) $-2\sqrt{3}, -9$

3) If α and β are the zeroes of the quadratic poly^n $f(x) = x^2 - 5x + 4$. Find the value of $\frac{1}{\alpha} + \frac{1}{\beta} - 2\alpha\beta$

4) If α and β are the zeroes of the quadratic poly^n $p(y) = 5y^2 - 7y + 2$. Find the value of $\frac{1}{\alpha} - \frac{1}{\beta}$

5) If α and β are the zeroes of the quadratic poly^n $f(x) = x^2 - x - 4$. Find the value of $\frac{1}{\alpha} - \frac{1}{\beta} - \alpha\cdot\beta$

6) If one zero of the quadratic poly^n $f(x) = 4x^2 - 8kx - 9$ is $-ve$ of other. Find the value of k.

7) If the sum of the zeroes of the quadratic poly^n $f(t) = kt^2 + 2t + 3k$ is equal to their product. Find the value of k.

8) If α and β are the zeroes of the quadratic poly^n $p(x) = 4x^2 - 5x - 1$, find the value of

   ⓘ $\alpha^2\beta + \alpha\beta^2$ (ii) $\alpha^4\beta^3 + \alpha^3\beta^4$ ✶(iii) $\frac{\alpha}{\beta} + \frac{\beta}{\alpha}$

   (iv) $\frac{\alpha}{\beta} + \frac{\beta}{\alpha} + 2\left(\frac{1}{\alpha} + \frac{1}{\beta}\right)$

9) If α and β are zeroes of quad. poly^n $f(x) = x^2 - p(x+1) - c$. Show that $(\alpha+1)(\beta+1) = 1 - c$

1.) The point of intersection of the lines represented by $3x - 2y = 6$ and the x-axis is:

a) $(2, 0)$ b) $(0, -3)$ c) $(-2, 0)$ d) $(0, 3)$

2) The age of a daughter is one-third the age of her mother. If the present age of mother is x year, then the age (in years) of the daughter after 15 year is:

a) $\frac{x}{3} + 15$ b) $\frac{x+15}{3}$ c) $x + 5$

d) $\frac{x}{3} - 15$

3) If $x = a$ and $y = b$ is the sol^n of the equation. $x - y = 2$ and $x + y = 4$, then the values of a and b are, respectively:

a) 3 and 5   b) 5 and 3

c) 3 and 1   d) -1 and -3

4) Every point on the line representing the linear equation in two variables:

a) may not be a solution of the equation

b) is a solution of the equation

c) is a solution if it is also a point on x-axis

d) is a solution of the equation if it is also a point on y-axis

5) If $47x + 31y = 18$ and $31x + 47y = 60$, then value of $x + y$ is

a) 1   b) 0   c) 23   d) 47

6) The point of the form (a, a) always lies on the line is:

a) $y = -x$ b) $x = -y$

c) $x = x$ d) $x = 2y$

7) If a pair of linear equation in two variables is inconsistent, then the lines represented by two equations are:

a) intersecting   b) parallel

c) always coincident

d) intersecting or coincident

8) If $am \neq bl$, then the pair of equations $ax + by = c$, $lx + my = n$:

a) has a unique solution

b) has no solution

c) has infinite many solution

d) may or may not have a solution.

9) The value of k for which the system of equations $x + 3y - 3 = 0$ and $4x + ky + 7 = 0$ has no solution is:

a) 10   b) 7   c) 3   d) 12

10) The point of the intersection of the lines $x - 3 = 0$ and $y - 5 = 0$ is:

a) $(-3, 5)$ b) $(3, 5)$ c) $(0, -5)$ d) $(3, -5)$

11) The pair of equations $x = a$ and $y = b$ graphically, represent lines which are:

a) parallel   b) intersecting at (b, a)

c) coincident   d) intersecting at (a, b)

12) A pair of linear equations which has a unique solution $x = 2$ and $y = -3$ is:

a) $x + y = -1$ and $2x - 3y = -5$

b) $2x + 5y = -11$ and $4x + 10y = -22$

c) $2x - y = 1$ and $3x + 2y = 0$

d) $x - 4y - 14 = 0$ and $5x - y - 13 = 0$

13) Match the column:

1) $2x+3y=40$
   $6x+5y=10$

2) $2x+3y=40$
   $6x+9y=50$

3) $2x+3y=10$
   $4x+6y=20$

A. Coincident lines

B Intersecting lines

C Parallel lines

a) 1-A, 2-B, 3-C
b) 1-B, 2-A, 3-C
c) 1-B, 2-C, 3-A
d) 1-C, 2-A, 3-B

14) Equation of line L_1: $a_1x+b_1y+c_1=0$
Equation of line L_2: $a_2x+b_2y+c_2=0$
Equation of line
L_3: $(a_1x+b_1y+c_1)+(a_2x+b_2y+c_2)=0$
if $\frac{a_1}{a_2}=\frac{b_1}{b_2}=\frac{c_1}{c_2}$, then line L_3 is:

a) parallel to line 2,
b) Parallel to line L_2
c) is coincident with L_2 or L_1
d) None of these

15) In a $\triangle ABC$ if $\angle C=50°$ and $\angle A$ enceeds $\angle B$ by $44°$, then $\angle A =$

a) $43°$ b) $40°$ c) $67°$ d) $87°$

16) If $3^{x-y}=9$ and $x-2y=6$ represent a system of the eq^n, then the value of $x+y$ is:

a) -2   b) -6   c) -4   d) None of these

17) If $3x-2y=4$ and $2x+y=5$, then the value of m such that $y=m+x$, is:

a) $m=-1$,   b) $m=1$,   c) $m=\frac{1}{2}$
d) $m=\frac{1}{2}$

18) Aruna has only ₹1 and ₹2 coins with her. If the total number of coins that she has 50 and the amount of money with her is ₹75,

Then the number of ₹1 and ₹2 coins are, respectively.

a) 35, 15   b) 35, 20   c) 15, 35
d) 25, 25

19) which of the following can not be the difference between a two digit number and the number obtained by interchanging the digits?

a) 72   b) 36   c) 54   d) 48

20) A can do a piece of work in 24 days. If B is 60·/. more efficient than A, then the number of days required by B to do the twice as large as the earlier work is:

a) 24   b) 36   c) 15   d) 30

21) x's salary is half to that of Y's. If X got a 50·/. rise in his salary and Y got 25·/. in his salary, then the percentage increase in combined salaries of both is:

a) 30   b) $33\frac{1}{3}$ c) $37\frac{1}{2}$ d) 75

22) At present ages of a father and his son are in the ratio 7:3, and they will be in ratio 2:1 after 10 years. Then the present age of father (in years) is:

a) 42   b) 56   c) 70   d) 77

23) If $2^{x+y}=2^{x-y}=\sqrt{8}$, then the value of x and y are:

a) $\frac{3}{2}, 0$ b) $0, \frac{3}{2}$ c) $\frac{2}{3}, -1$
d) $1, \frac{2}{3}$

Sum 1) If $(7,3)$ is a point on the line $7x + 3y + b$, then what is the value of b?

Sum 2) Which of the following pairs of equations $8x + 3y + 12$, $16x + 6y + 20$ are consistant / inconsistant? If consistant, obtain the solution graphically.

a) $x + y = 4$, $3x + 2y = 5$
b) $x - y = 5$, $2x - 2y = 10$
c) $3x + y - 6 = 0$, $6x + 2y = 15 = 0$
d) $2x - 3y + 5 = 0$, $4x + 2y = 6$

Sum 3) Give linear equation $5x - 2y = 7$, write another linear equation in two variables such that the geometrical respresentation of the pair so formed is

a) Intersecting lines   b) Parallel lines
c) Coincident lines

Sum 4) Represent the following pair of linear eq's graphically and write the coordinates of points where the lines intersect x-axis and y-axis
a) $7x + 2y = 14$, $3x + 2y = 14$ b) $5x - y = 0$; $x + y = 6$

Sum 5) Solve the following equations graphically. $2x + y = 12$, $x - y = 6$, Also find the area of region bounded by these two lines and the y-axis

Sum 6) Determine whether the following system of equations has a unique solution, no solution or infinite solutions.
a) $3x + 8y = 11$, $4x + 2y = 15$ b) $7x + 3y = 6$, $21x + 9y = 18$
c) $9x + 2y = 11$, $3x - 2y = 5$ d) $8x + 16y = 18$, $10y + 20x = 15$

Class: 10th   **Holidays' Homework**   **Subject: English**

Note: * Complete the homework in a separate notebook.

   * Don't answer in words wherever not asked. Write complete sentences while answering grammar exercises.

SECTION A – Reading

1A.   Read the passage given below and answer any eight of the questions that follow:

Thornfield Hall was a large gentleman's house in the country, near a town called Millcote. There, after my sixteen-hour journey, I was welcomed by Mrs. Fairfax. She was a little old lady, dressed in black, who seemed glad to have someone else to talk to, apart from the servants. Although the house was dark and frightening, with its big rooms full of heavy furniture, I was excited at being in a new place, and looked forward to my new life there, working for kind Mrs. Fairfax.

But I was surprised to discover on my first full day at Thornfield that Mrs. Fairfax was not in fact the owner, as I had assumed, but the housekeeper, and that my new master was a Mr. Rochester, who was often away from home. My pupil was a girl called Adèle, seven or eight years old, who was born in France and could hardly speak English. Luckily I had learnt French very well at Lowood, and had no difficulty in communicating with your Adèle, a pretty, cheerful child. It appeared that Mr. Rochester, who had known Adèle and her mother very well, had brought Adèle back to England to live with him after her mother had died. I taught her for several hours every day in the library, although it was not easy to make her concentrate on anything for long, as she was clearly not used to the discipline of lessons.

One day I took the opportunity of asking Mrs. Fairfax a few questions about Mr. Rochester, as I was curious about him, and the little housekeeper seemed happy to talk. 'Is he liked by most people ?' was my first question. 'Oh yes, his family have always been respected here. They've owned the land around here for years,' she replied. But do you like him ? What is his character like ?' 'I have always liked him, and I think he's a fair master to his servants. He's a little peculiar, perhaps. He's travelled a lot, you know. I expect he's clever, but I can't tell, really.' 'What do you mean, peculiar ?' I asked, interested. It's not easy to describe. You're never sure whether he's serious or joking. You don't really understand him, at least I don't. But that doesn't matter, he's a very good master.'

(1.1) On the basis of your understanding of the passage answer any eight of the following questions :

(a) Why was Mrs. Fairfax glad to receive the narrator ?

(b) Why was the narrator excited ?   (c) What wrong assumption was made by her?

(d) Why had she come to Thornfield Hall ?
(e) How do we know that Mr. Rochester was a man of noble nature ?
(f) Why was it difficult to make Adèle study for long hours ?
(g) Why was Mr. Rochester liked by most people ?
(h) What was peculiar about the nature of Mr. Rochester ?
(i) How does the narrator describe Adèle ?

1B. Read the passage given below :
People who smoke are being hounded out of all public places – offices, restaurants, educational institutions, buses, trains etc. Away from home now it is becoming nearly impossible to find a place to smoke. Growing restrictions and the fear of various diseases caused by tobacco are prompting many smokers to stop smoking. 19 states in the U.S. have made laws against smoking. Taxes on tobacco products are being raised. Smoking is banned at several places. Still the number of smokers is rising in India. More than 25 crore people in India are addicted to tobacco. And according to a WHO report around half of them will die of tobacco related diseases. Unfortunately most people in India still need a strict warning based on a test report before they decide to give up smoking. Patients too seek medical help only after they show serious symptoms of an illness. Some hospitals have set up centres to identify risk factors among the young so that they can take preventive measures like giving up smoking early in life. Tobacco is the second biggest cause of death in the world. It is responsible for the death of five crore people each year all over the world. Half of the people who are addicted to tobacco will ultimately be killed by this addiction. Many people get rid of this habit on their own and those who are willing to, but can't, go to de addiction centres. These centres use counselling, nicotine replacement therapy and prescriptive drugs to deal with withdrawal problems.
Quitting cold turkey – stopping the use of tobacco at once – works well but only for those who have control and determination to quit.

(2.1) On the basis of your understanding of the passage answer any four of the following questions :
(a) For which two reasons do smokers give up smoking ?
(b) Name two steps taken in India against smoking.
(c) Why is the situation unfortunate in India ?
(d) How do people get rid of smoking ?   (e) What does 'cold turkey' mean ?
(2.2) Complete any two of the following statements :
(f) In the U.S. _____ states have passed laws against smoking.
(g) In India one can't smoke at a _____.
(h) Tobacco is the _____ biggest killer in the world.
(2.3) Choose the meanings of the given words/phrases from the options that follow each word/phrase :
(i) hounded out (a) driven out (b) given out (c) washed (d) endangered
(j) restrictions (a) checks (b) imitations (c) failures (d) defeats
(k) prompting (a) abusing (b) initiating (c) empowering (d) encouraging

2A.   Read the passage given below :

Globalization

Globalization is the way to open businesses, improve technological growth, economy, etc, at the international level for all countries. It is the way in which manufacturers and producers of the products or goods sell their products globally without any restriction. It provides huge profits to the businessmen as they get low cost labour in poor countries easily. It provides a big opportunity to the companies to deal with the worldwide market.

Globalization helps to consider the whole world as a single market. Traders are extending their areas of business by treating the world as a global village. Earlier till the 1990s, there was a restriction on importing certain products which were already manufactured in India like agricultural products, engineering goods, food items and toiletries. However, during the 1990s there was a pressure from the rich countries on the poor and developing countries to allow them to spread their businesses by opening their markets. In India the globalization and liberalization process was started in 1991. After many years, globalization brought about a major revolution in the Indian market when multinational brands came to India and started delivering a wide range of quality products at cheap prices. Prices of good quality products came down because of the cutthroat competition in the market.

Globalization and liberalization of the businesses in India have flooded the market with quality foreign products but has affected the local Indian industries adversely to a great extent resulting in the job loss to poor and uneducated workers. Globalization has been a bonanza for the consumers, however, a loss to the small-scale Indian producers.

Globalization has had some very positive effects on the Indian consumer in all sectors of society. It has affected the Indian students and education sector to a great extent by making study books and a lot of information available over the internet. Collaboration of foreign universities with the Indian universities has brought about a huge change in the field of education. Globalization of trade in the agricultural sector has brought varieties of quality seeds which have disease resistance property. However, it is not good for the poor Indian farmers because the seeds and agricultural technologies are costly.

It has brought about a huge revolution in the employment sector by the spread of businesses like cottage, handloom, carpet, artisan carving, ceramic, jewellery, and glassware etc.

Attempt any eight of the following questions :

(a) What is globalization ?   (b) Write any two advantages of globalization.
(c) What was the pressure from the rich countries in the 1990's ?
(d) What is the effect of multinational brands entering the Indian market ?
(e) How are the prices of quality products affected due to globalization ?
(f) How have the foreign products affected the local industry adversely ?
(g) What has been the impact of globalization on the Indian students ?
(h) Why has globalization had a negative effect on the poor Indian farmer ?
(i) How has the cottage industry benefited from globalization ?

2B. Read the passage given below :

1. Everybody wants to succeed in life. For some, success means achieving whatever they desire or dream. For many it is the name, fame and social position. Whatever be the meaning of success, it is success which makes a man popular. All great men have been successful. They are remembered for their great achievements. But it is certain that success comes to those who are sincere, hardworking, loyal and committed to their goals.

2. Success has been man's greatest motivation. It is very important for all. Success has a great effect on life. It brings pleasure and pride. It gives a sense of fulfillment. It means all-around development. Everybody hopes to be successful in life. But success smiles on those who have a proper approach, planning, vision and stamina. A proper and timely application of all these things is bound to bear fruit. One cannot be successful without cultivating these certain basic things in life. It is very difficult to set out on a journey without knowing one's goals and purposes. Clarity of the objective is a must to succeed in life. A focused approach with proper planning is certain to bring success.

3. Indecision and insincerity are big obstacles on the path to success. One should have the capability, capacity and resources to turn one's dreams into reality. Mere desire cannot bring you success. The desire should be weighed against factors like capability and resources. This is the basic requirement of success. The next important thing is the eagerness, seriousness and the urge to be successful. It is the driving force which decides the success. It is the first step on the ladder of success.

4. One needs to pursue one's goals with all one's sincerity and passion. One should always be in high spirit. Lack of such spirit leads to an inferiority complex which is a big obstruction on the path to success. Time is also a deciding factor. Only the punctual and committed have succeeded in life. Lives of great men are examples of this. They had all these qualities in plenty which helped them rise to the peak of success.

5. Hard labour is one of the basic requirements of success. There is no substitute for hard labour. It alone can take one to the peak of success. Every success has a ratio of five percent inspiration and ninety-five percent perspiration. It is the patience, persistence and perseverance which play a decisive role in achieving success. Failures are the pillars of success as they are our stepping-stones and we must get up and start again and be motivated.

2.1. On the basis of your reading of the passage, answer any four of the following questions in 30-40 words each :

(a) To whom does success come certainly ?

(b) What are the basic things in life we need to achieve success ?

(c) What did great men have in plenty to rise to the peak of success ? Give any two examples.

(d) What is the one basic requirement of success ?

(e) Explain : "Failures are pillars of success."

2.2 On the basis of your reading of the passage, fill in any two of the following blanks with appropriate words :

(a) _____ plays a decisive role in achieving success.   (b) Goals have to be pursued with _____ and _____.   (c) Ratio of success is _____ inspiration.

2.3 Find out the words from the passage that mean the same as the following :
(a) endurance (para 2)   (b) obstruction (para 4)   (c) motivation (para 5)

3A. Read the passage given below :

India is on the path of greatness. But where will this greatness come from ? Is it only the government of a country that can lead it to greatness ? Is it only the political leaders that can shape the future of a nation ? No. The true greatness of any nation lies in its people.

There is capability for greatness in every citizen of the land. For the true owners of our nation are its citizens. The government is only the guardian of the nation and is ready to serve the people of the country. This is what a true democracy should be like. However, for a true democracy to succeed, the citizens have to play a larger role and fulfill their duties towards the nation.

The most famous line from the US President John F Kennedy's inaugural address is, "Ask not what your country can do for you, ask what you can do for your country". What is this but a call for citizens to rise to the occasion and do their duty ? In a true democracy, people get the leaders they deserve. If we simply sit in our drawing rooms and debate the quality of leadership this country has, we will achieve nothing. We have to play an active role in creating a new type of leadership because it is we, the people, who own the nation.

We can achieve this kind of leadership firstly by educating the youth of the country which is of supreme importance. Second, parents need to teach their children the importance of obeying laws. Children need to learn and be encouraged to express their talents and skills and consider themselves as the real strength of their nation. We need to encourage new ideas and creativity. Whether you start a small business, write an article, teach a child, shop at local stores, not pollute your environment, participate in cleanliness drives, create a work of art, volunteer for some social cause or another similar effort, you are performing your duty as a citizen. You are contributing to the consciousness of the community development and this will begin the process of change. Considering that most young people spend most of their time at school or at work, it is also important for teachers and employers to inculcate a sense of duty in the hearts and minds of young people.

Answer the following questions briefly :
(a) Where does the true greatness of any nation lie ?
(b) What is the role of the government ?
(c) What did the US President say in his inaugural address ?
(d) How can a true democracy develop ?   (e) How can we achieve good leadership ?
(f) How can children consider themselves as the real strength of their nation ?
(g) When do you perform your duty as a citizen ? Write any one activity.
(h) Who should inculcate a sense of duty in the children ?

3B. Read the passage given below :

Millions of tons of small waste from plastic bags, bottles and clothes in the world's oceans present a serious threat to human health and marine environment. This is the stark warning issued by the U.N. in a report on the most dangerous environmental problems facing the world today. Global plastic production has increased considerably in recent years nearly by 38%. A poor waste management means when we have finished with our takeaway containers,

cigarette butts and party balloons, they are worn down into trillions of even smaller particles by the waves. Therefore, there is a rowing presence of these micro plastics in the world's oceans. It was estimated in 2010 that millions of tons of plastic was washed into the seas and has since shown up in the stomachs of whales, plankton and other marine life. Richard Thompson, professor of marine biology said that in laboratory experiments there is proof that micro plastic can cause harm to organisms.

More than a quarter of all fish now contain plastic, according to a recent study which analyzed the guts of fish sold in California. Scientists fear that chemicals in plastics and also chemicals which attach themselves to plastic in natural environment could cause poisoning and many disorders in marine life if consumed in huge quantities.

Even humans could be adversely affected by the plastic. People could even be breathing in plastic micro particles suspended in the air with the risk of harmful effect on the lungs similar to car fumes. Boyance Slat, a Dutch student has developed a technology that could sift dangerous plastic particles out of the ocean and sell them for profit or re-cycling. Richard Thompson recommended that people avoid using products with micro beads and to make sure they dispose of all plastic products in an appropriate way by re-cycling if possible.

(2.1) Answer the following questions briefly :

(a) What is the warning issued by the U.N. ? (b) What do the scientists fear ? (c) What is the single most harmful effect of plastic micro particles on humans ? (d) What is Richard Thompson's advice ?

(2.2) Choose the meaning of each of the words given below with the help of options that follow :

(e) Stark	(i) Serious	(ii) Violent	(iii) Unpleasant	(iv) Angry
(f) Huge	(i) Impressive	(ii) Large	(iii) Constant	(iv) Standard
(g) Micro	(i) Mechanical	(ii) Dangerous	(iii) Very small	(iv) Tough
(h) Adversely	(i) Negatively	(ii) Clearly	(iii) Poorly	(iv) Surely

4A. Read the passage carefully :

I was born in the small but beautiful mountain village of Nakuri near Uttarkashi in Garhwal, with the gurgling, playful Bhagirathi river flowing nearby. My parents were a hard-working and extremely self-contained couple. Even though our family was poor, barely managing the essentials, my father taught us how to live and maintain dignity and self-respect — the most treasured family value till today. At the same time my parents also practised the creed, "Kindness is the essence of all religion." They were large-hearted, inviting village folk passing by to have tea at our home, and gave grain to the sadhus and pandits who came to the house. This characteristic has been ingrained in me so deeply that I am able to reach out to others and make a difference in their lives — whether it is in my home, in society or at the workplace.

I was the third child in the family — girl, boy, girl, girl and boy in that order — and quite a rebel. I developed a tendency to ask questions and was not satisfied with the customary way of life for a girl-child. When I found my elder brother, Bachchan, encouraging our youngest brother, Raju, to take up mountaineering I thought, why not me ? I found that my brothers were always getting preferential treatment and all opportunities and options were open to them. This made me even more determined to not only do what the boys were doing, but to do it better.

The general thinking of mountain people was that mountaineering as a sport was not for them. They considered themselves to be born mountaineers as they had to go up and down mountain slopes for their daily livelihood and even for routine work. On the other hand, as a student, I would look curiously at foreign backpackers passing by my village and wonder where they were going. I would even invite them to my house and talk to them to learn more about their travels. The full significance of this came to me later when I started working. The foreigners took the trouble to come all the way to the Himalayas in order to educate themselves on social, cultural and scientific aspects of mountaineering, as well as to seek peace in nature's gigantic scheme of things.

1.1 Answer the following questions :

(a) What does the author tell us about the financial condition of her parents ?

(b) What is the most treasured value of the author's family ?

(c) Give an example to show that the author's parents were veryhospitable.

(d) What kind of girl was the author ?

(e) How do you know that the author's parents discriminated between sons and daughters ?

(f) Why do the mountain people consider themselves to be born   mountaineers ?

(g) Why would the author invite foreign mountaineers to her house ?

(h) Why were foreigners drawn to the Himalayas ?

4B. Read the passage carefully :

1 One would imagine that at the very sight of the panther, deer, antelopes, and its other preys would just run for their lives. Nothing of the sort. They all stand their ground and make such a loud noise that the panther is left with no other choice except to leave quietly. I have seen a tiny chital baby standing in the middle of an opening in the forest, stamping its feet on the ground and shooing away a tiger. With the white of its erect tail showing, it kept up its shrill call until the tiger made itself scarce. No tiger in its senses would attempt to catch such an impertinent brat, just as you would not dream of catching an offending crow cawing away in your verandah.

2 While the panther sticks to cover and hugs the edge of the forest, the game animals, on the other hand, like to assemble right out in open vast grazing grounds. Open spaces which the panther carefully avoids, are what the game animals deliberately seek.

3 It is difficult to describe the pandemonium kicked up by various animals when they spot or suspect a panther around. he chital strikes a shrill note, the kakar emits a deafening bark and the sambar rings a bell. The peacock on its perch, the jungle fowl on the ground, and the monkey on treetops, all join in the chorus of condemnation of the panther. They curse the panther in their own inimitable language. The resulting confusion of sounds is so irritating to the sharp ears of the panther that it is left with no other option except to go away.

4 The panther has thus to deal with its ever alert and watchful associates who show no mercy and expect none. It is a fight between finesse and flight, between clever attack and skilful defence.

5 Contrary to the common belief, the panther never springs upon its prey. It stalks as close to its victim as it can manage, and then makes the final dash by rushing at it at a lightning speed.

1. Answer the following questions :

(a) What strategy do animals like deer, antelopes, etc adopt to drive away the panther ?
(b) How do the panther and the game animals (deer, antelopes, etc) react to open spaces ?
(c) What effect does the loud noise made by birds and animals have on the panther ?
(d) How does the panther kill its prey ?

2. Find the meanings of the words given below with the help of the options that follow :

(a) shrill (Para 1)   (i) rude   (ii) high   (iii) offensive   (iv) terrible
(b) deliberately (Para 2)   (i) immediately (ii) cleverly   (iii) intentionally   (iv) naughtily
(c) condemnation (Para 3)   (i) disapproval (ii) dismissal   (iii) revenge   (iv) annoyance
(d) associates (Para 4)   (i) rivals   (ii) neighbours (iii) superiors   (iv) partners

SECTION B – (Writing and Grammar)

1A.

Question 1: Below is a graph given showing birth and death rates in a country from 1901 to 2101. Write an analytical paragraph (100-150 words).
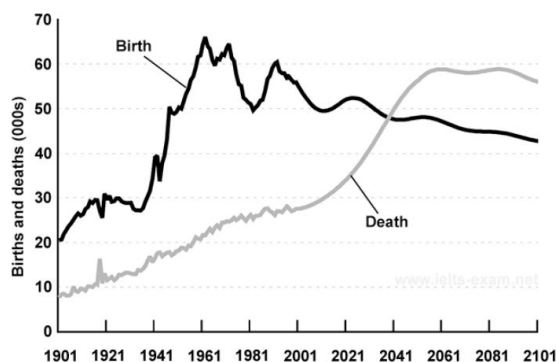
1.B.

Question 3: The pie chart shows the proportion of people from different households living in poverty in the UK in 2002. Write an analytical paragraph to describe the information in 100-120 words.
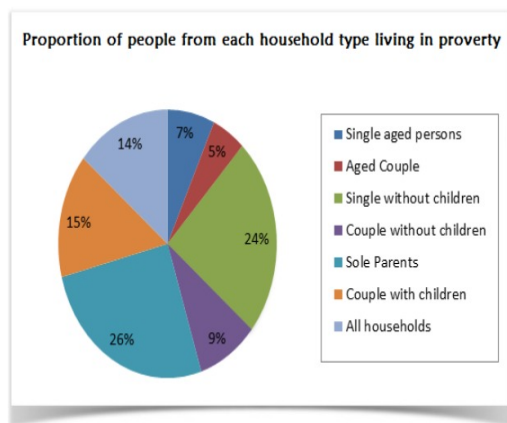
1.C. Accidents happen when people violate traffic rules. Careless drivers cause suffering to themselves and to others. Write an article in 100 – 120 words on ''Safe Driving''.

1.D. You are upset at the usual traffic jams in your city and the chaos they create. Write an article in 100-120 words mentioning the reasons for it and the possible solutions. You are Seema/Sohan, 12 Mall Road, Delhi. 5

1.E Your school organized a literature quiz, which was greatly enjoyed by students. Feeling encouraged by it you decide to write an article. Write the article in 100-120 words for the school magazine on 'Importance of Reading'. You are Seema/Sohan.

1F."A man's manners are a mirror in which he shows his portrait". The quote highlights the importance of good manners in life. Write an article for school Magazine on 'Good Manners'. You may use the following hints with your own ideas. Hints: First step to success — need for good manners — makes life easy with politeness — creates goodwill — use words like thank you, please, sorry — important words — well mannered people liked by all.

3.A. Complete the following paragraph by filling in the blanks with the help of the given options :

During (a) _____ hottest part of the year, many of our city streets seem to be on fire (b) _____ masses of Gulmohar flowers. This (c) _____ one of the most beautiful trees.

(a) (i) a (ii) the (iii) an (iv) some
(b) (i) from (ii) by (iii) with (iv) over
(c) (i) is (ii) was (iii) are (iv) be

3.B. Read the paragraph given below and fill in the blanks by writing the correct options in your answer sheet.

Swachh Bharat Abhiyan (a) _____ launched (b) _____ the country (c) _____ a national movement.

(a) (i) in (ii) was (iii) are (iv) am
(b) (i) around (ii) on (iii) across (iv) over
(c) (i) as (ii) by (iii) or (iv) for

3.C. Complete the paragraph given below by filling in the blanks with the help of options that follow :

Rakesh _____ (a) not quarrel with anyone in _____ (b) jail. Then one day I saw him _____ (c) his cool. In his ward _____ (d) was a youngman _____ (e) did not look like a criminal.

(a) (i) do (ii) does (iii) did (iv) doing
(b) (i) a (ii) an (iii) the (iv) some
(c) (i) lose (ii) loses (iii) lost (iv) losing
(d) (i) there (ii) their (iii) here (iv) nowhere   (e) (i) which (ii) who (iii) that (iv) whose

3.D. Fill in any four of the blanks in the sentences given below choosing the most appropriate options from the ones that follow. Write the answers in your answer-sheet against the correct blank numbers :

(A) Concentration is (a) _____ by alertness.   (B) Effective speaking (b) _____ on effective listening.   (C) Economic growth (c) _____ attitudes and lifestyle.   (D) The environment has always (d) _____ in control of our destiny. (E) They believe that logic (e) _____ no place in faith.

(a) (i) help (ii) will help (iii) helps (iv) helped
(b) (i) depends (ii) depend (iii) depended (iv) depending
(c) (i) change (ii) will change (iii) changes (iv) changed

(d) (i) is (ii) be (iii) been (iv) was   (e) (i) has (ii) have (iii) had (iv) having

3.E.Complete the paragraph given below by filling in the blanks with the help of the options given.

Tigers ………. (a) …………. (were / will / is / are) at the top of the food chain. Only human beings threaten their survival as a species. Tigers kill only for food (b)………. (or / because / but / and) only when they are hungry. They rarely ………(c)……… (attack / attacking / attacks / attacked) humans. Easily ……….(d)……… (recognized / recognizing / has recognizing / has recognized) by their reddish orange coat with dark ……..(e)…….. (strips / stripes / striped / stripe), tigers are the …….(f)……. (large / larger / largest / much larger) wild cats in the world.

3.F. Reading is one of the best hobbies ….(a)…. (this / that / who / it) you can adopt. …..(b…). (It / They / Them / Its) not only helps you to pass your leisure time usefully …..(c)… (and / so / hence / but) also keeps you well informed. Besides that, it builds ……(d)…… (yours / your's / your / its) vocabulary and helps you to …..(e)……. (improvement / improving / improves / improve) your expression. If you can't decide ……f…… (whose / which / different / various) books to read, you should consult your parents or librarian.

3.G. Complete the following paragraph by filling in the blanks with the help of the given options :

The naughty children walked (a) _____ flower beds,   climbed the fruit trees (b) _____ plucked unripe fruits and they (c) _____ pits on the garden path.

(a) (i) over (ii) in (iii) on (iv) across   (b) (i) but (ii) and (iii) therefore (iv) since   (c) (i) dig (ii) digging (iii) digs (iv) dug

3.H. Complete the following paragraph by filling in the blanks with the help of given options :

There is a general belief (a) _____ students that   (b) _____ who write long sentences get (c) _____ marks.

(a) (i) in (ii) of (iii) among (iv) between
(b) (i) they (ii) those (iii) all (iv) them
(c) (i) more (ii) many (iii) most (iv) much

3.I. Complete the paragraph given below by filling in the blanks with the help of options that follow :   Yesterday, a rich woman from West Bengal (a) _____ to Delhi to buy jewellery.   She was sitting outside (b) _____ jewellery shop. Suddenly two young boys came   there (c) _____ snatched the chain that she was (d) _____. She called the police (e) _____ the snatchers had run away.   (a) (i) come (ii) comes (iii) came (iv) coming   (b) (i) a (ii) an (iii) the (iv) some   (c) (i) and (ii) or (iii) but (iv) how   (d) (i) wear (ii) wears (iii) wore (iv) wearing   (e) (i) so (ii) because (iii) but (iv) only

4A. The following paragraph has not been edited. There is one error in each line. Write the error and its correction as shown in the example.

	Error	Correction
Neil Armstrong was the commander for Apollo 11. e.g.	for	of
He was the first to walk over	(a) _____ _____	
the moon. What many people do not knew	(b) _____ _____	
is that unlike most of their fellow	(c) _____ _____	
astronauts, he was the civilian	(d) _____ _____	
and not part of the military.		

4B. The following paragraph has not been edited. There is one error in each line. Write the error and its correction.

		Error	Correction
Many schools used the play way method	e.g.	used	use
at the early years. As children	(a) _____	_____
grow older a number of play hours	(b) _____	_____
in the time-table started falling rapidly.	(c) _____	_____
Many schools does not have even playgrounds.	(d) _____	_____

4. C. The following paragraph has not been edited. There is an error in each line. Identify the error, write it and its correction as shown in the example :

		Error	Correction
People always take pity on Reddy.	e.g. take	took
He was a victim on an acid attack.	(a) _____	_____
He was very young hard eleven	(b) _____	_____
Years old. People will say, "What'll	(c) _____	_____
he do in life ? What is go to	(d) _____	_____
happen to him when we had gone ?"	(e) _____	_____

. : win / the / you / if / play / can / you / well / game   You can win, if you play the game well.   (a) unfair means / a / using / is / not / idea / good   (b) you / ashamed / it / feel / can / make   (c) your goal / fair / reaching / a / in / manner / is good

4.D. In the following paragraph one word has been omitted in each line. Write the missing words in any four lines of the given paragraph, along with the words that come before and the words that come after it in the space provided.

Eg. **Most the** people		**most**	of	**the**
are annoyed passwords.	(a)	———	———	———
They have many remember.	(b)	———	———	———
On any given day are	(c)	———	———	———
bound forget them.	(d)	———	———	———
This creates difficulties the people.	(e)	———	———	———

4.E. The following paragraph has not been edited. There is one error in   each marked line. Write the error and its correction as shown in the example.

		Error	Correction
Her duties for the day were over.	e.g.	for	of
She had scrub the floor of the kitchen,	(a)	....
washed the vessels and put them on a	(b)	....
shining row on an wooden shelf, returned	(c)	....
the short scrubbing broom to it's corner	(d)	....
and closed the kitchen window.		

5.A. Rearrange the following words / phrases to form meaningful sentences. The first one has been done as an example.

poverty / the village people / from / most / suffer / of   Most of the village people suffer from poverty.

(a) in rural areas / is / employment opportunities / there / of / lack /   (b) come to cities / in / people / so / of work / search /   (c) appalling conditions / cities / they / in / live / in /

5.B. Rearrange the words and phrases given below into meaningful sentences. The first one has been done as an example. eg

5.C. Rearrange the following words/phrases to form meaningful sentences. (a) were / on the / Ram / standing / and / beach / Sham (b) at the / waves / were / rising and falling / they / looking (c) a boat / a wave / they / top of / saw / on the   (d) the wave / up and down / was / with / it / going   (e) in the / two men / there / sitting / were/boat

5.D. Rearrange any four of the following word clusters to make meaningful sentences :
                          (a) very exciting / can be / new country / travelling to / a   (b) it / a lot of / before / actually requires / the visit / preparation   (c) option / is / light / travelling / best / the   (d) also need / we / the local weather / in mind / to / keep (e) always / enriched / we / return / experience / the / with

5.E. Rearrange the following words / phrases to form meaningful sentences. The first one has been done as an example. part / Kilimanjaro National Park / of / is / the / Mount Kilimanjaro Mount Kilimanjaro is part of the Kilimanjaro National Park. (a) dormant volcano / a / in / Mount Kilimanjaro / Tanzania / is   (b) highest / Africa / it is / mountain / in / the
(c) has been / many / it / the subject of / studies / scientific

5.F. Rearrange the following words and phrases into meaningful   sentences. The first one has been done as an example.   e.g. came / months / me / for eight / to teach / he   For eight months he came to teach me.
(a) algebra and / a week / me / geometry / twice / he taught   (b) very poor / subjects / I was / in these / earlier   (c) very / now / proficient / have become / in them / I

5.G. Rearrange the words/phrases given below to form meaningful sentences : (a) standing / at the / one day / I / beach / was   (b) number / come / of people / a large / had / there
(c) hawkers / there / eatables / so many / were / selling   (d) wave / suddenly / came / huge / a   (e) road / all the / rushed / towards / the / people

Section C (Literature)

1. Read the following extract and answer the following questions with reference to the context.
1.A. The house- the only one in the entire valley- sat on the crest of a low hill. From this height one could see the river and the field of ripe corn dotted with the flowers that always promised a good harvest. The only thing the Earth needed was a downpour or at least a shower. Throughout the morning Lencho who knew his fields intimately had done nothing else but see the sky towards the North-East. "Now we're really going to get some water, woman. " The woman who was preparing supper, replied, "Yes, God willing".
(a) Where was Lencho's house located?   (b) What was Lencho's wife preparing?
(c) Find the word from the passage which means 'very closely'.
(d) What does 'Crest' means?
1. B. It was during the meal that, just as Lencho had predicted, big drops of rain began to fall. In the North-East huge mountains of clouds could be seen approaching. The air was fresh and sweet. The man went out for no other reason than to have the pleasure of feeling the rain on

his body. CBSE 2012
(a) What could be seen approaching in the North-East? (b) Why did Lencho go out?
(c) Give an antonym of the word Big.
(d) Which word in the passage is a synonym of 'forecast'.
1.C. With a satisfied expression he regarded the field of ripe corn with its flowers, draped in a. curtain of rain. But suddenly a strong wind began to blow and alongwith the rain very large hailstones began to fall. These truly did resemble new silver coins. The boys, exposing themselves to the rain, ran out to collect the frozen pearls.
(a) What happened to the rain suddenly? (b) 'The frozen pearls' refers to which thing in the paragraph.
(c) Find the similar meaning-of 'contented' in the paragraph.
(d) Find from the passage a word which means 'to take after'.
1.D. When he finished, he went to the window to buy a stamp which he licked and then affixed to the envelope with a blow of his fist. The moment the letter fell into the mailbox the postmaster went to open it. It said: "God: Of the money that I asked for, only seventy pesos reached me. Send me the rest, since I need it very much. But don't send it to me through the mail because the post office employees are a 'bunch of crooks'. Lencho."
(a) What did Lencho do wijh the stamp? (b) What did the postmaster do when the letter fell into the mailbox and why? (c) Find out the word which has the similar meaning as 'attached' used in the passage. (d) Which word in the passage denotes a dishonest person?
1.E. But if it had to perish twice I think I know enough of hate To say that for destruction ice Is also great And would suffice.
(a) What does 'it' refers to in the first line? (b) What do you mean by 'perish'?
(c) What does ice stand for? (d) What would be the cause of destruction?
2. Answer the following questions in about 30 to 40 words each.
A. Who was Lencho? What were his main problems?
B. Why did Lencho write a letter to God?
C. Why and how did the postmaster help Lencho?
D. Why did Lencho not want the money to be sent through mail?
E. Do you think that Lencho was right to call the post office employees a bunch of crooks? Why or why not?
F. Write down the two different views about the end of the world?
G. To say that for destruction ice is also great for the poet, what does 'ice' stand for? How is it sufficient to bring destruction?
H. What is the underlying message for us in our hectic life with reference to the poem, 'Dust of Snow' ?
I. What was Tricky's ailment ? How did it worry Mrs. Pumphrey ?
J. In the end of the lesson Mrs. Pumphery says "This is a triumph of surgery." Why ?
3. Answer the following questions in about 120 to 150 words.
A. "Humanity still exists", this is what we get to know after reading A letter to God' in which firm faith in God of a poor farmer and helpfulness of the post office employees are aptly depicted thought. Write a paragraph on the values in it, in about 80-100 words. Give the paragraph a suitable title.

B.Describe Lencho's qualities in light of his faith in God. Do you have faith in God like Lencho? Was Lencho's reaction towards post office employees right?

C.Give a character-sketch of Lencho.hasten the end of the world with respect to 'Fire and Ice'.

E. Distinguish between Mrs. Pumphrey's method and Mr. Herriot's method in looking after the dog. Whose method could be regarded the better of the two and why ?   F. What treatment was given to Tricky by Dr. Harriot ?

4. Read 2-3 story books or stories from your NCERT Supplementary book, Moments and write a short paragraph on the character you like most.

5. Revise the syllabus done till the last day before the vacations and write four short answer questions and one long answer question from each lesson.

6. Read the given list of the most misspelt words and write each word a few times to learn their spellings. It is also suggested to make your own pages of thesaurus(a book that lists words in groups of synonyms and related concepts) **using these words by finding their synonyms, antonyms, similar words etc. For help, you may visit** https://www.thesaurus.com

Have a great Summer Vacation!

authentic	criticism	forty
ambiguous	customary	friend
accomplice	conscious	further
accommodate	definitely	gauge
achieve	debt	glamour
aggressive	decision	government
appearance	delicious	grateful
argument	despair	guarantee
assassination	diaphragm	guilty
actually	difference	gymnasium
beginning	disease	grammar
believe	dysfunction	guard
business	embarrass	happened
bachelor	ecstasy	harass
biscuit	environment	honorary
boundary	existence	humorous
buoyant	effervescent	handkerchief
calendar	efficient	hemmorhage
category	eligible	horrible
colleague	elimination	hypocrisy
committee	eminent	independence
completely	equipped	identical
conscience	erroneous	inevitable
conscious	exaggarated	initiation
copyright	exceed	interrupt
curiosity	excessive	irrelevant
campaign	exhaust	irresistible
cashier	fascinate	Isthmus
casualty	fatigue	immediately
circumference	february	knowledge
convenient	fulfill	lightning
correspondent	foliage	medicine

millenium	receipt	truly
misspell	recommend	tongue
maintenance	recess	tournament
mathematics	reign	tragedy
mediocre	remittance	tuition
miscellaneous	rendezvous	unique
naturally	repetition	usually
necessary	reservoir	utensil
negotiate	restaurant	unanimous
neighbour	rhythm	unconscious
niece	ridiculous	until
noticeable	recipe	vicious
nuisance	salary	vaccination
obedience	scissors	vacuum
occurred	secretary	villain
omitted	separately	violence
ophthalmologist	Sergeant	weird
optometrist	siege	whether
optician	significance	wholly
pamphlet	similar	wherever
parallel	sincerely	weather
parliament	soldier	
permanent	soliloquy	
perceive	statute	
politician	succeed	
possession	sufficient	
preferred	summarize	
privilege	technique	
pronunciation	temperament	
publicly	therefore	
receive	thief	
referred	tomorrow	

CHAPTER 1
Chemical Reactions and Equations

Multiple Choice Questions

1. Which of the following is not a physical change?

(a) Boiling of water to give water vapour

(b) Melting of ice to give water

(c) Dissolution of salt in water

(d) Combustion of Liquefied Petroleum Gas (LPG)

2. The following reaction is an example of a

$4NH_3(g) + 5O_2(g) \rightarrow 4NO(g) + 6H_2O(g)$

(i) displacement reaction

(ii) combination reaction

(iii) redox reaction

(iv) neutralisation reaction

(a) (i) and (iv)   (b) (ii) and (iii)

(c) (i) and (iii)   (d) (iii) and (iv)

3. Which of the following statements about the given reaction are correct?

$3Fe(s) + 4H_2O(g) \rightarrow Fe_3O_4(s) + 4H_2(g)$

(i) Iron metal is getting oxidised

(ii) Water is getting reduced

(iii) Water is acting as reducing agent

(iv) Water is acting as oxidising agent

(a) (i), (ii) and (iii)   (b) (iii) and (iv)

(c) (i), (ii) and (iv)   (d) (ii) and (iv)

4. Which of the following are exothermic processes?

(i) Reaction of water with quick lime

(ii) Dilution of an acid

(iii) Evaporation of water

(iv) Sublimation of camphor (crystals)

(a) (i) and (ii)   (b) (ii) and (iii)

(c) (i) and (iv)   (d) (iii) and (iv)

5. Three beakers labelled as A, B and C each containing 25 mL of water were taken. A small amount of NaOH, anhydrous $CuSO_4$ and NaCl were added to the beakers A, B and C respectively. It was observed that there was an increase in the temperature of the solutions contained in beakers A and B, whereas in case of beaker C, the temperature of the solution falls. Which one of the following statement(s) is(are) correct?

   (i) In beakers A and B, exothermic process has occurred.

   (ii) In beakers A and B, endothermic process has occurred.

   (iii) In beaker C exothermic process has occurred.

   (iv) In beaker C endothermic process has occurred.

   (a) (i) only   (b) (ii) only

   (c) (i) and (iv)   (d) (ii) and (iii)

6. A dilute ferrous sulphate solution was gradually added to the beaker containing acidified permanganate solution. The light purple colour of the solution fades and finally disappears. Which of the following is the correct explanation for the observation?

   (a) $KMnO_4$ is an oxidising agent, it oxidises $FeSO_4$

   (b) $FeSO_4$ acts as an oxidising agent and oxidises $KMnO_4$

   (c) The colour disappears due to dilution; no reaction is involved

   (d) $KMnO_4$ is an unstable compound and decomposes in presence of $FeSO_4$ to a colourless compound.

7. Which among the following is(are) double displacement reaction(s)?

   (i) $Pb + CuCl_2 \rightarrow PbCl_2 + Cu$

   (ii) $Na_2SO_4 + BaCl_2 \rightarrow BaSO_4 + 2NaCl$

   (iii) $C + O_2 \rightarrow CO_2$

   (iv) $CH_4 + 2O_2 \rightarrow CO_2 + 2H_2O$

   (a) (i) and (iv)   (b) (ii) only

   (c) (i) and (ii)   (d) (iii) and (iv)

8. Which among the following statement(s) is(are) true? Exposure of silver chloride to sunlight for a long duration turns grey due to

   (i) the formation of silver by decomposition of silver chloride

   (ii) sublimation of silver chloride

   (iii) decomposition of chlorine gas from silver chloride

   (iv) oxidation of silver chloride

   (a) (i) only   (b) (i) and (iii)

   (c) (ii) and (iii)   (d) (iv) only

9. Solid calcium oxide reacts vigorously with water to form calcium hydroxide accompanied by liberation of heat. This process is called slaking of lime. Calcium hydroxide dissolves in water to form its solution called lime water. Which among the following is (are) true about slaking of lime and the solution formed?

   (i) It is an endothermic reaction

   (ii) It is an exothermic reaction

   (iii) The pH of the resulting solution will be more than seven

   (iv) The pH of the resulting solution will be less than seven

   (a) (i) and (ii)   (b) (ii) and (iii)

   (c) (i) and (iv)   (d) (iii) and (iv)

10. Barium chloride on reacting with ammonium sulphate forms barium sulphate and ammonium chloride. Which of the following correctly represents the type of the reaction involved?

   (i) Displacement reaction

   (ii) Precipitation reaction

   (iii) Combination reaction

   (iv) Double displacement reaction

   (a) (i) only   (b) (ii) only

   (c) (iv) only   (d) (ii) and (iv)

11. Electrolysis of water is a decomposition reaction. The mole ratio of hydrogen and oxygen gases liberated during electrolysis of water is

   (a) 1:1

   (b) 2:1

   (c) 4:1

   (d) 1:2

12. Which of the following is(are) an endothermic process(es)?

   (i) Dilution of sulphuric acid

   (ii) Sublimation of dry ice

   (iii) Condensation of water vapours

   (iv) Evaporation of water

   (a) (i) and (iii)   (b) (ii) only

   (c) (iii) only   (d) (ii) and (iv)

13. In the double displacement reaction between aqueous potassium iodide and aqueous lead nitrate, a yellow precipitate of lead iodide is formed. While performing the activity if lead nitrate is not available, which of the following can be used in place of lead nitrate?

   (a) Lead sulphate (insoluble)

   (b) Lead acetate

   (c) Ammonium nitrate

   (d) Potassium sulphate

14. Which of the following gases can be used for storage of fresh sample of an oil for a long time?

(a) Carbon dioxide or oxygen
(b) Nitrogen or oxygen
(c) Carbon dioxide or helium
(d) Helium or nitrogen

15. The following reaction is used for the preparation of oxygen gas in the laboratory

$$2KClO_3 \text{ (s)} \xrightarrow[\text{Catalyst}]{\text{Heat}} 2KCl \text{ (s)} + 3O_2\text{(g)}$$
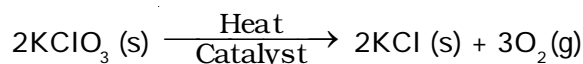
Which of the following statement(s) is(are) correct about the reaction?

(a) It is a decomposition reaction and endothermic in nature
(b) It is a combination reaction
(c) It is a decomposition reaction and accompanied by release of heat
(d) It is a photochemical decomposition reaction and exothermic in nature

16. Which one of the following processes involve chemical reactions?

(a) Storing of oxygen gas under pressure in a gas cylinder
(b) Liquefaction of air
(c) Keeping petrol in a china dish in the open
(d) Heating copper wire in presence of air at high temperature

17. In which of the following chemical equations, the abbreviations represent the correct states of the reactants and products involved at reaction temperature?

(a) $2H_2(l) + O_2(l) \rightarrow 2H_2O(g)$

(b) $2H_2(g) + O_2(l) \rightarrow 2H_2O(l)$

(c) $2H_2(g) + O_2(g) \rightarrow 2H_2O(l)$

(d) $2H_2(g) + O_2(g) \rightarrow 2H_2O(g)$

18. Which of the following are combination reactions?

(i) $2KClO_3 \xrightarrow{\text{Heat}} 2KCl + 3O_2$

(ii) $MgO + H_2O \longrightarrow Mg(OH)_2$

(iii) $4Al + 3O_2 \longrightarrow 2Al_2O_3$

(iv) $Zn + FeSO_4 \longrightarrow ZnSO_4 + Fe$

(a) (i) and (iii)   (b) (iii) and (iv)
(c) (ii) and (iv)   (d) (ii) and (iii)

Short Answer Questions

19. Write the balanced chemical equations for the following reactions and identify the type of reaction in each case.

(a) Nitrogen gas is treated with hydrogen gas in the presence of a catalyst at 773K to form ammonia gas.

(b) Sodium hydroxide solution is treated with acetic acid to form sodium acetate and water.

(c) Ethanol is warmed with ethanoic acid to form ethyl acetate in the presence of concentrated H_2SO_4 .

(d) Ethene is burnt in the presence of oxygen to form carbon dioxide, water and releases heat and light.

20. Write the balanced chemical equations for the following reactions and identify the type of reaction in each case.

(a) Thermit reaction, iron (III) oxide reacts with aluminium and gives molten iron and aluminium oxide.

(b) Magnesium ribbon is burnt in an atmosphere of nitrogen gas to form solid magnesium nitride.

(c) Chlorine gas is passed in an aqueous potassium iodide solution to form potassium chloride solution and solid iodine.

(d) Ethanol is burnt in air to form carbon dioxide, water and releases heat.

21. Complete the missing components/variables given as x and y in the following reactions

(a) $Pb(NO_3)_2$ (aq) + 2KI(aq) $\longrightarrow$ PbI_2 (x) + $2KNO_3$(y)

(b) $Cu(s) + 2Ag\,NO_3(aq) \longrightarrow Cu(NO_3)_2(aq) + x(s)$

(c) $Zn(s) + H_2SO_4(aq) \longrightarrow ZnSO_4(x) + H_2(y)$

(d) $CaCO_3(s) \xrightarrow{x} CaO(s) + CO_2(g)$

22. Which among the following changes are exothermic or endothermic in nature?

(a) Decomposition of ferrous sulphate

(b) Dilution of sulphuric acid

(c) Dissolution of sodium hydroxide in water

(d) Dissolution of ammonium chloride in water

23. Identify the reducing agent in the following reactions

(a) $4NH_3 + 5O_2 \longrightarrow 4NO + 6H_2O$

(b) $H_2O + F_2 \longrightarrow HF + HOF$

(c) $Fe_2O_3 + 3CO \longrightarrow 2Fe + 3CO_2$

(d) $2H_2 + O_2 \longrightarrow 2H_2O$

24. Identify the oxidising agent (oxidant) in the following reactions

    (a) $Pb_3O_4 + 8HCl \longrightarrow 3PbCl_2 + Cl_2 + 4H_2O$

    (b) $2Mg + O_2 \longrightarrow 2MgO$

    (c) $CuSO_4 + Zn \longrightarrow Cu + ZnSO_4$

    (d) $V_2O_5 + 5Ca \longrightarrow 2V + 5CaO$

    (e) $3Fe + 4H_2O \longrightarrow Fe_3O_4 + 4H_2$

    (f) $CuO + H_2 \longrightarrow Cu + H_2O$

25. Write the balanced chemical equations for the following reactions

    (a) Sodium carbonate on reaction with hydrochloric acid in equal molar concentrations gives sodium chloride and sodium hydrogencarbonate.

    (b) Sodium hydrogencarbonate on reaction with hydrochloric acid gives sodium chloride, water and liberates carbon dioxide.

    (c) Copper sulphate on treatment with potassium iodide precipitates cuprous iodide ($Cu_2 I_2$), liberates iodine gas and also forms potassium sulphate.

26. A solution of potassium chloride when mixed with silver nitrate solution, an insoluble white substance is formed. Write the chemical reaction involved and also mention the type of the chemical reaction?

27. Ferrous sulphate decomposes with the evolution of a gas having a characteristic odour of burning sulphur. Write the chemical reaction involved and identify the type of reaction.

28. Why do fire flies glow at night?

29. Grapes hanging on the plant do not ferment but after being plucked from the plant can be fermented. Under what conditions do these grapes ferment? Is it a chemical or a physical change?

30. Which among the following are physical or chemical changes?

    (a) Evaporation of petrol

    (b) Burning of Liquefied Petroleum Gas (LPG)

    (c) Heating of an iron rod to red hot.

    (d) Curdling of milk

    (e) Sublimation of solid ammonium chloride

31. During the reaction of some metals with dilute hydrochloric acid, following observations were made.

    (a) Silver metal does not show any change

    (b) The temperature of the reaction mixture rises when aluminium (Al) is added.

    (c) The reaction of sodium metal is found to be highly explosive

    (d) Some bubbles of a gas are seen when lead (Pb) is reacted with the acid.

    Explain these observations giving suitable reasons.

32. A substance X, which is an oxide of a group 2 element, is used intensively in the cement industry. This element is present in bones also. On treatment with water it forms a solution which turns red litmus blue. Identify X and also write the chemical reactions involved.

33. Write a balanced chemical equation for each of the following reactions and also classify them.

(a) Lead acetate solution is treated with dilute hydrochloric acid to form lead chloride and acetic acid solution.

(b) A piece of sodium metal is added to absolute ethanol to form sodium ethoxide and hydrogen gas.

(c) Iron (III) oxide on heating with carbon monoxide gas reacts to form solid iron and liberates carbon dioxide gas.

(d) Hydrogen sulphide gas reacts with oxygen gas to form solid sulphur and liquid water.

34. Why do we store silver chloride in dark coloured bottles?

35. Balance the following chemical equations and identify the type of chemical reaction.

(a) $Mg(s) + Cl_2(g) \longrightarrow MgCl_2(s)$

(b) $HgO(s) \xrightarrow{\text{Heat}} Hg(l) + O_2(g)$

(c) $Na(s) + S(s) \xrightarrow{\text{Fuse}} Na_2S(s)$

(d) $TiCl_4(l) + Mg(s) \longrightarrow Ti(s) + MgCl_2(s)$

(e) $CaO(s) + SiO_2(s) \longrightarrow CaSiO_3(s)$

(f) $H_2O_2(l) \xrightarrow{\text{U V}} H_2O(l) + O_2(g)$

36. A magnesium ribbon is burnt in oxygen to give a white compound X accompanied by emission of light. If the burning ribbon is now placed in an atmosphere of nitrogen, it continues to burn and forms a compound Y.

(a) Write the chemical formulae of X and Y.

(b) Write a balanced chemical equation, when X is dissolved in water.

37. Zinc liberates hydrogen gas when reacted with dilute hydrochloric acid, whereas copper does not. Explain why?

38. A silver article generally turns black when kept in the open for a few days. The article when rubbed with toothpaste again starts shining.

(a) Why do silver articles turn black when kept in the open for a few days? Name the phenomenon involved.

(b) Name the black substance formed and give its chemical formula.

Long Answer Questions

39. On heating blue coloured powder of copper (II) nitrate in a boiling tube, copper oxide (black), oxygen gas and a brown gas X is formed

  (a) Write a balanced chemical equation of the reaction.

  (b) Identity the brown gas X evolved.

  (c) Identity the type of reaction.

  (d) What could be the pH range of aqueous solution of the gas X?

40. Give the characteristic tests for the following gases

  (a) CO_2

  (b) SO_2

  (c) O_2

  (d) H_2

41. What happens when a piece of

  (a) zinc metal is added to copper sulphate solution?

  (b) aluminium metal is added to dilute hydrochloric acid?

  (c) silver metal is added to copper sulphate solution?

  Also, write the balanced chemical equation if the reaction occurs

42. What happens when zinc granules are treated with dilute solution of H_2SO_4, HCl, HNO_3, NaCl and NaOH, also write the chemical equations if reaction occurs.

43. On adding a drop of barium chloride solution to an aqueous solution of sodium sulphite, white precipitate is obtained.

  (a) Write a balanced chemical equation of the reaction involved

  (b) What other name can be given to this precipitation reaction?

  (c) On adding dilute hydrochloric acid to the reaction mixture, white precipitate disappears. Why?

44. You are provided with two containers made up of copper and aluminium. You are also provided with solutions of dilute HCl, dilute HNO_3, $ZnCl_2$ and H_2O. In which of the above containers these solutions can be kept?
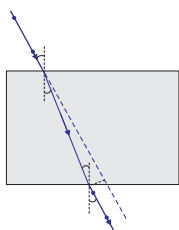
Light – Reflection and Refraction

Multiple Choice Questions

1. Which of the following can make a parallel beam of light when light from a point source is incident on it?

(a) Concave mirror as well as convex lens

(b) Convex mirror as well as concave lens

(c) Two plane mirrors placed at 90° to each other

(d) Concave mirror as well as concave lens

2. A 10 mm long awl pin is placed vertically in front of a concave mirror. A 5 mm long image of the awl pin is formed at 30 cm in front of the mirror. The focal length of this mirror is

(a) – 30 cm (b) – 20 cm

(c) – 40 cm (d) – 60 cm

3. Under which of the following conditions a concave mirror can form an image larger than the actual object?

(a) When the object is kept at a distance equal to its radius of curvature

(b) When object is kept at a distance less than its focal length

(c) When object is placed between the focus and centre of curvature

(d) When object is kept at a distance greater than its radius of curvature

4. Figure 10.1 shows a ray of light as it travels from medium A to medium B. Refractive index of the medium B relative to medium A is

(a) $\sqrt{3}/\sqrt{2}$

(b) $\sqrt{2}/\sqrt{3}$

(c) $1/\sqrt{2}$

(d) $\sqrt{2}$
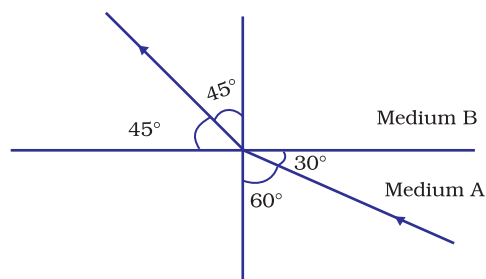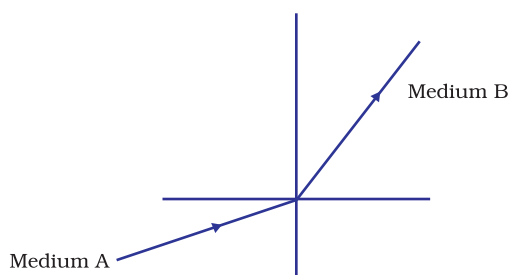
Fig. 10.1

Fig. 10.2

5. A light ray enters from medium A to medium B as shown in Figure 10.2. The refractive index of medium B relative to A will be

(a) greater than unity

(b) less than unity

(c) equal to unity

(d) zero

6. Beams of light are incident through the holes A and B and emerge out of box through the holes C and D respectively as shown in the Figure10.3. Which of the following could be inside the box?
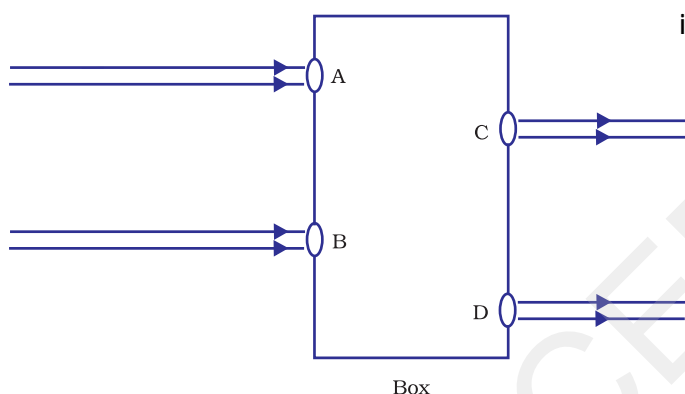
(a) A rectangular glass slab

(b) A convex lens

(c) A concave lens

(d) A prism

Box

Fig. 10.3

7. A beam of light is incident through the holes on side A and emerges out of the holes on the other face of the box as shown in the Figure 10.4. Which of the following could be inside the box?
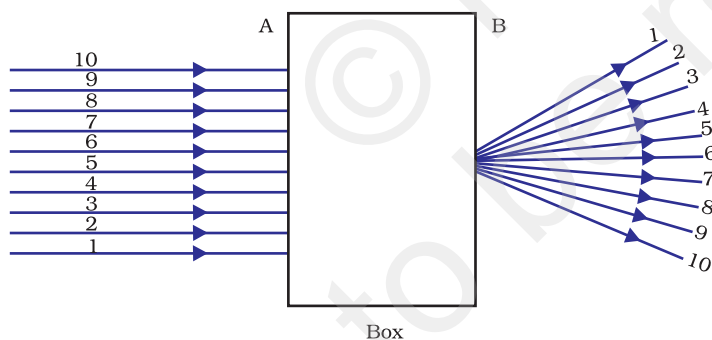
(a) Concave lens

(b) Rectangular glass slab

(c) Prism

(d) Convex lens

Box

Fig. 10.4

8. Which of the following statements is true?

(a) A convex lens has 4 dioptre power having a focal length 0.25 m

(b) A convex lens has –4 dioptre power having a focal length 0.25 m

(c) A concave lens has 4 dioptre power having a focal length 0.25 m

(d) A concave lens has –4 dioptre power having a focal length 0.25 m

9. Magnification produced by a rear view mirror fitted in vehicles

   (a) is less than one
   (b) is more than one
   (c) is equal to one
   (d) can be more than or less than one depending upon the position of the object in front of it

10. Rays from 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?

   (a) 15 cm in front of the mirror
   (b) 30 cm in front of the mirror
   (c) between 15 cm and 30 cm in front of the mirror
   (d) more than 30 cm in front of the mirror

11. A full length image of a distant tall building can definitely be seen by using

   (a) a concave mirror
   (b) a convex mirror
   (c) a plane mirror
   (d) both concave as well as plane mirror

12. In torches, search lights and headlights of vehicles the bulb is placed

   (a) between the pole and the focus of the reflector
   (b) very near to the focus of the reflector
   (c) between the focus and centre of curvature of the reflector
   (d) at the centre of curvature of the reflector

13. The laws of reflection hold good for

   (a) plane mirror only
   (b) concave mirror only
   (c) convex mirror only
   (d) all mirrors irrespective of their shape

14. The path of a ray of light coming from air passing through a rectangular glass slab traced by four students are shown as A, B, C and D in Figure 10.5. Which one of them is correct?

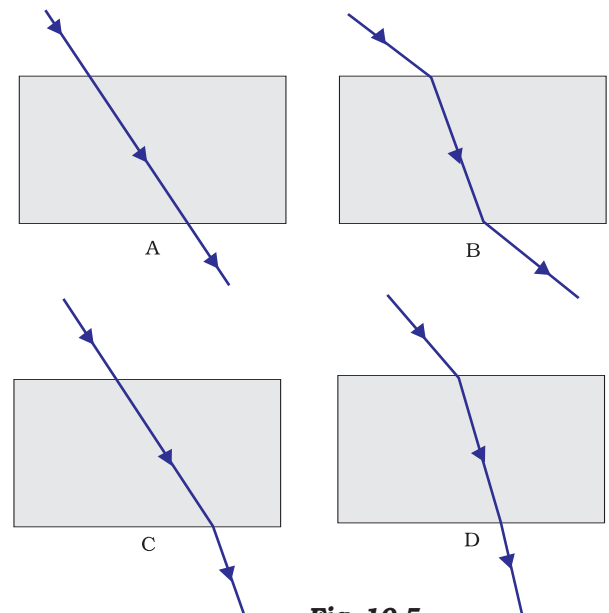   (a) A
   (b) B
   (c) C
   (d) D

Fig. 10.5

15. You are given water, mustard oil, glycerine and kerosene. In which of these media a ray of light incident obliquely at same angle would bend the most?

    (a) Kerosene
    (b) Water
    (c) Mustard oil
    (d) Glycerine

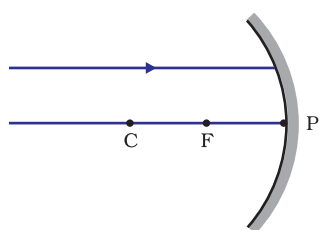16. Which of the following ray diagrams is correct for the ray of light incident on a concave mirror as shown in Figure 10.6?
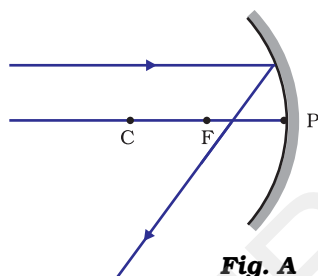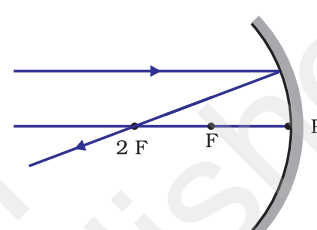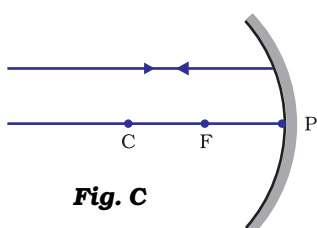

Fig. 10.6

Fig. A

Fig. B

Fig. C
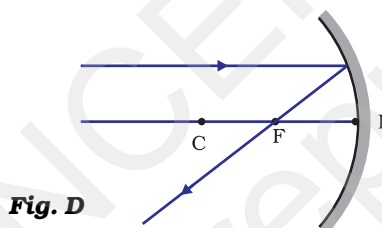
Fig. D

    (a) Fig. A
    (b) Fig. B
    (c) Fig. C
    (d) Fig. D

17. Which of the following ray diagrams is correct for the ray of light incident on a lens shown in Fig. 10.7?
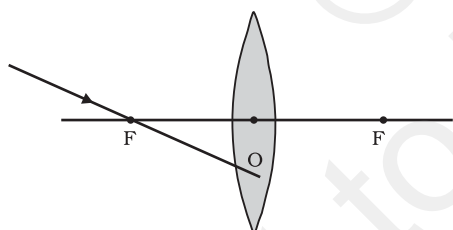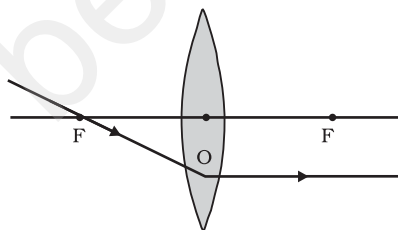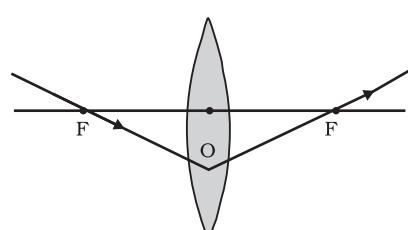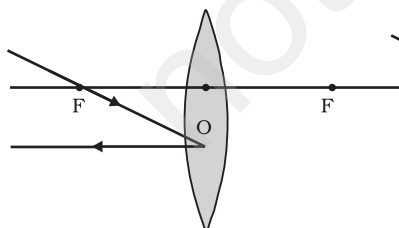

Fig. 10.7

Fig. A

Fig. B

Fig. C
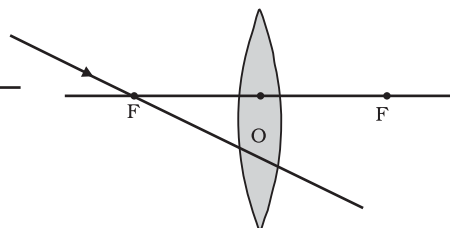
Fig. D

    (a) Fig. A.
    (b) Fig. B.
    (c) Fig. C.
    (d) Fig. D.

18. A child is standing in front of a magic mirror. She finds the image of her head bigger, the middle portion of her body of the same size and that of the legs smaller. The following is the order of combinations for the magic mirror from the top.

(a) Plane, convex and concave

(b) Convex, concave and plane

(c) Concave, plane and convex

(d) Convex, plane and concave

19. In which of the following, the image of an object placed at infinity will be highly diminished and point sized?

(a) Concave mirror only

(b) Convex mirror only

(c) Convex lens only

(d) Concave mirror, convex mirror, concave lens and convex lens

Short Answer Questions

20. Identify the device used as a spherical mirror or lens in following cases, when the image formed is virtual and erect in each case.

(a) Object is placed between device and its focus, image formed is enlarged and behind it.

(b) Object is placed between the focus and device, image formed is enlarged and on the same side as that of the object.

(c) Object is placed between infinity and device, image formed is diminished and between focus and optical centre on the same side as that of the object.

(d) Object is placed between infinity and device, image formed is diminished and between pole and focus, behind it.

21. Why does a light ray incident on a rectangular glass slab immersed in any medium emerges parallel to itself? Explain using a diagram.

22. A pencil when dipped in water in a glass tumbler appears to be bent at the interface of air and water. Will the pencil appear to be bent to the same extent, if instead of water we use liquids like, kerosene or turpentine. Support your answer with reason.

23. How is the refractive index of a medium related to the speed of light? Obtain an expression for refractive index of a medium with respect to another in terms of speed of light in these two media?

24. Refractive index of diamond with respect to glass is 1.6 and absolute refractive index of glass is 1.5. Find out the absolute refractive index of diamond.

25. A convex lens of focal length 20 cm can produce a magnified virtual as well as real image. Is this a correct statement? If yes, where shall the object be placed in each case for obtaining these images?

26. Sudha finds out that the sharp image of the window pane of her science laboratory is formed at a distance of 15 cm from the lens. She now tries to focus the building visible to her outside the window instead of the window pane without disturbing the lens. In which direction will she move the screen to obtain a sharp image of the building? What is the approximate focal length of this lens?

27. How are power and focal length of a lens related? You are provided with two lenses of focal length 20 cm and 40 cm respectively. Which lens will you use to obtain more convergent light?

28. Under what condition in an arrangement of two plane mirrors, incident ray and reflected ray will always be parallel to each other, whatever may be angle of incidence. Show the same with the help of diagram.

29. Draw a ray diagram showing the path of rays of light when it enters with oblique incidence (i) from air into water; (ii) from water into air.

Long Answer Questions

30. Draw ray diagrams showing the image formation by a concave mirror when an object is placed

    (a) between pole and focus of the mirror
    (b) between focus and centre of curvature of the mirror
    (c) at centre of curvature of the mirror
    (d) a little beyond centre of curvature of the mirror
    (e) at infinity

31. Draw ray diagrams showing the image formation by a convex lens when an object is placed

    (a) between optical centre and focus of the lens
    (b) between focus and twice the focal length of the lens
    (c) at twice the focal length of the lens
    (d) at infinity
    (e) at the focus of the lens

32. Write laws of refraction. Explain the same with the help of ray diagram, when a ray of light passes through a rectangular glass slab.

33. Draw ray diagrams showing the image formation by a concave lens when an object is placed

   (a) at the focus of the lens
   (b) between focus and twice the focal length of the lens
   (c) beyond twice the focal length of the lens

34. Draw ray diagrams showing the image formation by a convex mirror when an object is placed

   (a) at infinity
   (b) at finite distance from the mirror

35. The image of a candle flame formed by a lens is obtained on a screen placed on the other side of the lens. If the image is three times the size of the flame and the distance between lens and image is 80 cm, at what distance should the candle be placed from the lens? What is the nature of the image at a distance of 80 cm and the lens?

36. Size of image of an object by a mirror having a focal length of 20 cm is observed to be reduced to 1/3rd of its size. At what distance the object has been placed from the mirror? What is the nature of the image and the mirror?

37. Define power of a lens. What is its unit? One student uses a lens of focal length 50 cm and another of –50 cm. What is the nature of the lens and its power used by each of them?

38. A student focussed the image of a candle flame on a white screen using a convex lens. He noted down the position of the candle screen and the lens as under

   Position of candle   = 12.0 cm

   Position of convex lens = 50.0 cm

   Position of the screen   = 88.0 cm

   (i) What is the focal length of the convex lens?
   (ii) Where will the image be formed if he shifts the candle towards the lens at a position of 31.0 cm?
   (iii) What will be the nature of the image formed if he further shifts the candle towards the lens?
   (iv) Draw a ray diagram to show the formation of the image in case (iii) as said above.

Chapter 1 chemical reactions and equations

➤ **Physical Change: Change in physical properties.**

– Melting

– Boiling

– Condensation

– [Note- No change occurs in the identity of the substance].

➤ **Chemical Change:**

– Atoms in the reactants are rearranged to form one or more different substances.

– Old bonds are broken, new bonds are formed.

– Reactants lose their properties to form product of different properties.

$4 Fe(s) + 3O_2 \rightarrow 2Fe2O_3$ (rust). Iron Oxygen Ferric oxide

➤ **Chemical equation:**

The symbolic representation of a chemical reaction is called a

chemical equation.

Features of a chemical equation:

• The reactants are written on the left hand side with a plus sign between them.

• The products are written on the right hand side with a plus sign between them.

• An arrow separates the reactants from the products. The arrow head points towards the products and indicates the direction of the reaction.

Skeletal chemical equation: A chemical equation which simply represents the symbols and formulas of reactants and products taking part in the reaction is known as skeletal chemical equation for a reaction.

For example: For the burning of Magnesium in the air, $Mg + O_2 \rightarrow MgO$ is the skeletal equation.

• Balanced chemical equation: A balanced equation is a chemical equation in which number of atoms of each element is equal on both sides of the equation i.e number ofatoms of an element on reactant side = number of atoms of that element on the product side.

➤ **Identification:**

Combustion :	$AB + O_2 \rightarrow$ Oxide of A & B.
Combination :	$A + B \rightarrow C$
Decomposition :	$AB \rightarrow A + B$
Displacement :	$A + BC (aq) \rightarrow AC (aq) + B$
Double Displacement :	$AB (aq) + CD (aq) \rightarrow AD (aq) + CB$

Definitions with examples :

1. Combination Reaction : Two or more reactant combine to form a single product.

$2 Mg (s) + O_2 (g) \rightarrow 2 MgO$ Magnesium Oxygen Magnesium oxide (White ash)
(basic) turns Red litmus blue

2. Decomposition Reaction: A single compound decomposes or break down to give two or moresimpler substances.
$2 FeSO_4 (s). \xrightarrow{\Delta} Fe2\ O_3 (s) + SO_2 (g) + SO_3(g)$ Ferrous Sulphate Ferric oxide Sulphur Sulphur (green) (brown) dioxide trioxide
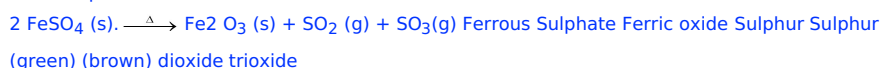
3. Displacement Reaction: A more reactive element [metal] displaces less reactive elemen [metal] from its aqueous salt soln $Fe (s) + ZnSO_4 (aq) \rightarrow FeSO_4 (aq) + Zn (s)$ (Colourless) (green)

4. Double Displacement Reaction: Aqueous soln of two ionic compounds react by exchange of their ions is called double displacement Reaction $BaCl_2 (aq) + Na_2SO_4 (aq) \rightarrow BaSO_4 (s) + 2 NaCl$ (aq) $Pb(NO_3)_2 + 2 KI (aq) \rightarrow PbI_2 (\downarrow) + 2 KNO_3 (aq)$

5. Oxidation Reaction: In oxidation reaction, addition of oxygen or removal of hydrogen or loss of electron takes place. $2 Mg(s) + O_2 (g) \rightarrow 2MgO (s)$ $2 Cu + O_2 \rightarrow 2 CuO$ (Black) (Copper II Oxide)

6. Reduction Reaction: In reduction Reaction addition of hydrogen or removal of oxygen or gain of electron takes place. $CuO(s) + H_2 (g) \rightarrow Cu(s) + H_2\ O (l)$
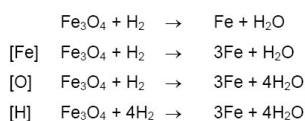
7. Redox Reaction: Reaction involving both oxidation and reduction simultaneously $CuO (s)+ H_2 \rightarrow Cu(s) + H_2\ O (l)$.

**8. Exothermic Reaction:** Reaction in which heat is evolved. $C (s) + O_2 (g) \rightarrow CO_2 (g) + Heat$

10. Neutralisation Reaction : When an acid and a base react together to form salt and water.
$HCl (aq) + NaOH (aq) \rightarrow H2O (l) + NaCl (aq)$ (acid) (base) (Water) (Salt) Hydrochloric acid Sodium hydroxide   Sodium Chloride

Law of Conservation of Mass

In a chemical reaction matter is conserved. Total no. of atoms = Total no. of atoms Total mass = Total mass. [While Balancing a Chemical Equation Formula of reactants and products should not be changed]. Balancing:

	$Fe_3O_4 + H_2$	$\rightarrow$	$Fe + H_2O$
[Fe]	$Fe_3O_4 + H_2$	$\rightarrow$	$3Fe + H_2O$
[O]	$Fe_3O_4 + H_2$	$\rightarrow$	$3Fe + 4H_2O$
[H]	$Fe_3O_4 + 4H_2$	$\rightarrow$	$3Fe + 4H_2O$

➢ **Corrosion:** Process of slowly reacting up of metals due to attack of atmospheric gases like O_2 ,CO_2 M etc.
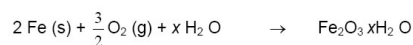
$2 Fe (s) + \frac{3}{2} O_2 (g) + x H_2\ O \rightarrow Fe_2O_3\ xH_2\ O$
Rust(hydrated Iron (III)oxide)

Prevention: Painting, Galvanization, oiling greasing.
Corrosion of Aluminium has advantage , since Al2O3 formed as a result of corrosion act as protective layer.

➢ **Rancidity:**

Oxidation of oils or fats in a flood, resulting into a bad smell and taste.
Prevention: Adding anti-oxidants.
Vacuum Packing

Vacuum Packing
Replacing air by Nitrogen
Refrigeration of food stuf

➢ **[KEY POINTS]**

• A chemical reaction involves a chemical change in which substances react to form new substances with entirely new properties. Substances that react or take part in the reaction are known as reactants and the ubstances formed are known as products.
• During a chemical reaction, there is a breaking of bonds between atoms of the reacting molecules to give products.
• A chemical reaction can be observed with the help of any of the following observations:Evolution of a gas

1.Change in temperature
2.Formation of a precipitate
3.Change in colour
4.Change of state

• **Physical change:** If a change involves change in colour or state but no new substance is formed, then it is a physical change.
• **Chemical change:** If a change involves formation of new substances, it is a chemical change.

• **Exothermic and endothermic reactions:** If heat is evolved during a reaction, then such a reaction is known as Exothermic reaction. If heat is absorbed from the surroundings, then such a reaction is known as endothermic reaction.
• As per the law of conservation of mass, the total mass of the elements present in the products of a chemical reaction is equal to the total mass of the elements present in the reactants.
• The process of equating the number of atoms on both the sides of a chemical equation is known as **balancing of a chemical equation.**
• The first step in balancing a chemical equation is to write the number of atoms of each element present on the left hand side and right hand side.
• We should always start balancing with the compound that contains maximum number of atoms. It can be reactant or a product. Then in that compound select the element which has the maximum number of atoms.
• While balancing a chemical equation, the molecular formulas of the reactants and products should not change. The molecular formulas are simply multiplied by suitable coefficients.
• To make a chemical equation more informative, the reaction conditions such as temperature, pressure or catalyst are written on the arrow separating the reactants and products.
• The evolution of gas is indicated by an upward arrow.
• The formation of precipitate is indicated by a downward arrow.
• Heat evolved during the reaction is written as + Heat on the product side.
• Heat absorbed during the reaction is written as + Heat on the reactant side.
• Combination reaction is a reaction in which 2 or more substances combine to give a single product.
• Combination reaction can be between two elements, between an element and a compound or between two compounds.
• Decomposition reaction: In a decomposition reaction, a single reactant decomposes to give two or more products.
• Decomposition reactions require energy in the form of heat, light or electricity

Types of decomposition reactions:

• Decomposition reactions which require heat are known as thermolytic.
• Decomposition reactions which require light are known as photolytic.
• Decomposition reactions which require electricity are known as electrolytic.
• Displacement reaction: A reaction in which a more active element displacesless active element from its salt solution.
• The reactivity series is a list of metals arranged in the order of decreasing reactivity.
• The most reactive metal is placed at the top and the least reactive metal is placed at the bottom.
• Double displacement reaction: A chemical reaction in which there is an exchange of ions between the reactants to give new substances is called double displacement reaction.
• Precipitation reaction: An insoluble solid known as precipitate is formed during a double

displacement reaction. Such reactions are also known as precipitation reactions.
• Redox reaction: A reaction in which oxidation and reduction take place simultaneously in a reaction, is known as a redox reaction.
• Oxidation is a chemical process in which a substance gains oxygen or loses hydrogen.
• Reduction is a chemical process in which a substance gains hydrogen or loses oxygen.
• If a substance gains oxygen or loses hydrogen during a reaction, it is said to be oxidised.
• If a substance gains hydrogen or loses oxygen during a reaction, it is said to be reduced.
• A substance that loses oxygen or gains hydrogen is known as an oxidising agent.
• A substance that loses hydrogen or gains oxygen is known as a reducing agent.
• An oxidising agent gets reduced whereas a reducing agent gets oxidised.
• In terms of electronic concept, Oxidation is defined as a loss of electrons while reduction is defined as a gain of electrons.
• Corrosion is the slow eating up of metals by the action of air and moisture on their surfaces. Corrosion in case of Iron is known as Rusting.
• Chemically, rust is hydrated ferric oxide (Fe2O3.xH2O)
• Advantages of corrosion: Though corrosion is undesirable, it can be advantageous in case of aluminium which on exposure to air, gets coated with a protective layer of aluminium oxide. This protects the metal nderneath from further corrosion and damage.
• Rancidity: When oils and fats or foods containing oils and fats are exposed to air, they get oxidised due to which the food becomes stale and gives a bad aste or smell. This is called Rancidity.
• Rancidity can be prevented by: a Adding antioxidants i.e. the substances which prevent oxidation b Refrigeration c Storing the food in air-tight containers

SUGGESTED ACTIVITIES

• Combination reaction b/w Magnesium ribbon and Oxygen from air.
• Combination reaction b/w Quick Lime and Water.
• Thermal decomposition of Ferrous Sulphate.
• Thermal decomposition of Lead Nitrate
• Formation of hydrogen gas by the action of dil. Sulphuric Acid on Zinc
• Displacement reaction b/w Iron /Copper Sulphate,Zinc/ Copper Sulphate
• Double displacement reaction b/w Lead Nitrate & Potassium Iodide.
• Double displacement reaction b/w Sodium Sulphate & Barium Chloride.
• Photodecomposition of Silver Chloride
• Oxidation of Copper to Copper Oxide
• Exothermic and Endothermic Reaction.

QUESTION BANK

Very Short answer type questions :
1. What happens when magnesium ribbon burns in air?
Ans. When magnesium ribbon burns in air, it combines with the oxygen to form magnesium oxide.
$2Mg(s) + O_2(g) \rightarrow 2MgO(s)$

2. Name the gas evolved when zinc reacts with dil. HCl.
Ans. Hydrogen gas is evolved.

3. What is a chemical equation?
Ans. A chemical equation is a symbolic notation that uses formulae instead of words to represent a chemical equation.

4. On what chemical law, balancing of chemical equation is based?
Ans. Balancing of a chemical equation is based on the law of conservation of mass.

5. Represent decomposition of ferrous sulphate with the help of balanced chemical equation.
Ans. $2FeSO_4(s) \rightarrow Fe2O_3(s) + SO_2(g) + SO_3(g)$

6. When carbon dioxide is passed through lime water, it turns milky, why?
Ans. Lime water (calcium hydroxide) combines with carbon dioxide to form a suspension of calcium carbonate which makes lime water milky.
$Ca(OH)_2(aq) + CO_{2(g)} \rightarrow CaCO_{3(s)} + H_2O_{(l)}$

7. A zinc rod is left for nearly 20 minutes in a copper sulphate solution. What change would you observe in zinc rod?
Ans. Zinc rod will change into zinc sulphate.

8. What type of reaction is this: $Na_2SO_4 + BaCl_2 \rightarrow BaSO_4 + 2NaCl$
Ans. It is a double displacement reaction.

9. Identify the compound oxidized in the following reaction. H_2S (g) $+ Cl_2 \rightarrow S(s) + 2HCl$ (g)
Ans. H_2S is oxidized.

10. What is rust?

Ans. Rust is mainly hydrated iron (III) oxide, $Fe_2O_3 \rightarrow xH_2O$.

Short answer type questions:

1. An iron knife kept dipped in a blue copper sulphate solution turns the blue solution light green. Why?
Ans. As we know iron is more reactive than copper. So, it displaces Cu from CuSO4 solution and forms ferrous sulphate which is of Light Green Colour. $CuSO_4$ (aq) $+ Fe$ (s)$\rightarrow FeSO_4$ (aq) $+ Cu(s)$
Blue colour light green colour

2. A copper coin is kept in a solution of silver nitrate for some time. What will happen to the coin and the colour of the solution?
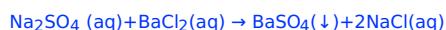**Ans:** We know that copper is more reactive than silver, so it will displace silver from its salt solution: $Cu(s) + 2AgNO_3(aq) \rightarrow Cu(NO3)2(aq) + 2Ag(s)$ So the solution will turn blue due to the formation of copper nitrate.

3. What do you understand by precipitation reaction? Explain with suitable examples.
Ans. Precipitate. When two reactants react and product formed remains insoluble and settles as a solid it is called a precipitate. Such reactions in which precipitate is formed are called precipitation reactions.

For example,

i) When aqueous solution of sodium sulphate is mixed with the aqueous solution or barium chloride, barium sulphate comes in the form of white precipitate
Na_2SO_4 (aq)$+BaCl_2(aq) \rightarrow BaSO_4(\downarrow)+2NaCl(aq)$
11 ZIET CHANDIGARH

ii) When aqueous solution of sodium chloride is mixed with the aqueous solution of silver nitrate, silver chloride comes in the form of white precipitate.

4. What is lime-water test for the detection of carbon dioxide?
Ans. When carbon dioxide gas is passed through lime water, it turns milky due to the formation of milky suspension (precipitate) of calcium carbonate. Carbon dioxide is produced by the action of dilute HCl on sodium carbonate. $Na_2CO_3(s)+2HCl(aq) \rightarrow 2NaCl+H_2O(l)+CO_2$
Carbon dioxide gas produced in this reaction is passed through lime water it changes to milky colour due to the formation of calcium carbonate.

Long answer type questions:

1. What is corrosion? State the conditions necessary for rusting of iron. How rusting is harmful ?
Ans: Corrosion: The process of eating away of the metal by the action of atmospheric reagents changing the metal into its compound is called corrosion.

Rusting of Iron : When iron and iron objects are exposed to atmosphere, they are attacked by air and moisture (water) of the atmosphere and a brown and orange colored layer is formed on the surface. It is called rust which is mainly hydrated iron (III) oxide $Fe2O_3 \rightarrow xH_2O$.
Harmful Effect of Rusting : Hydrated iron (III) oxide is brittle substance and moves away from the surface thus the object is damaged. The objects get holes, cavities and rough surface. Conditions necessary for rusting:

i) Open surfaces of the metal.
ii) Presence of air (Oxygen).

iii) Presence of moisture (water).

2. What is rancidity? Write the common method to prevent it.
Ans. When food item are kept unprotected for some time, they give some unpleasant smell and taste and become rancid.
This process is called rancidity. Actually, the micro organisms oxidize the fat and oils present in them. So,oxidation of food items need to be prevented to protect them.Common methods to Prevent Rancidity of Food item

i) Keeping the food at low temperature
ii) Keeping food item in air tight containers
iii) By filling nitrogen in the food storage bags

3. a) Why cannot a chemical change be normally reversed ?
b) Why is it always essential to balance a chemical equation?
c) What happens when CO_2 gas is passed through lime water and why does it disappear on passing excess CO_2?
d) Can rusting of iron takes place in distilled water?

Ans: a. In a chemical change some bonds are broken and some bonds are formed. The products are quite different from the reactants. Therefore it normally can't be reversed.
b. A chemical equation has to be balanced to satisfy the law of conservation of mass.
c. On passing CO_2 gas through lime water, it turns milky due to formation of insoluble calcium carbonate which dissolves on passing excess CO_2 due to formation of soluble calcium bicarbonate.

$Ca(OH)_2 + CO_2(g) \rightarrow CaCO_3(s) + H_2O(l)$

$CaCO_3(s) + H_2O(l) + CO_2 (g) \rightarrow Ca(HCO_3)_2(soluble)$
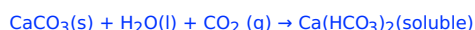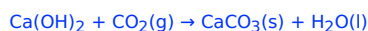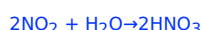
d. No, rusting of iron cannot take place in distilled water because it neither contains dissolved oxygen nor CO_2 both are essential for rusting of iron.

1. The marble statues often slowly get corroded when kept in open for a long time.
Assign a suitable explanation
Ans. SO_2* NO_2 gases are released into the atmosphere from various sources. These dissolve in rain water to give acid which corrodes marble statue

$2SO_2 + O_2 \rightarrow 2SO_3$; $H_2O + SO_3 \rightarrow H_2SO_4$

$2NO_2 + H_2O \rightarrow 2HNO_3$

$CaCO_3 + H_2SO_4 \rightarrow CaSO_4 + H_2O + CO_2$

$CaCO_3 + 2HNO_3 \rightarrow Ca(NO_3)2 + H_2O + CO_2$

2. You are given the following materials (a) marble chips (b)dilute hydrochloric acid (c) Zinc granules ,identify the type of reaction when marble chips and Zinc granules are added separately to acid taken in two test tubes .
Ans. (a) marble chips react with dilute hydrochloric acid to form calcium chloride and carbon dioxide .it is a double displacement reaction
$CaCO_3 + 2HCl \rightarrow CaCl2 + H_2O + CO_2$
(b) Zinc granules react with dilute hydrochloric acid to give hydrogen gas. it is a displacement reaction $Zn(s) + 2HCl \rightarrow ZnCl_2(aq) + H_{2(}(g)$

3. The gases hydrogen & chlorine do not react with each other even if kept together for a long time . However, in the presence of sunlight, they readily combine. What does actually happen?
Ans. In Chemical reactions, energy is needed to break the bonds present in the reacting molecules so that they may combine to form the products. In this reaction, sunlight is the source of energy in the form of photons. The energy made available by sunlight helps in breaking the bonds & this leads to chemical reaction between hydrogen& chlorine. $H_2(g) + Cl_2(g)$ sunlight $\rightarrow 2HCl$ (g)

4. A, B and C are three elements which undergo chemical reactions in the following way:

$A_2O_3 + 2B \rightarrow B2O + 2A$

$3 CSO_4 + 2B \rightarrow B_2(SO_4)_3 + 3C$

$3 CO+ {}_2A \rightarrow A_2O_3 +3C$
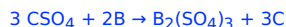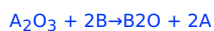
Answer the following

a) Which element is most reactive?

b) Which element is least reactive ?

Ans: a) The most reactive element is 'B'. It has displaced both 'A' and 'c' from their compounds.

b) The least reactive element is 'C' as it has been displaced by both 'A' and 'B' .

5. A water insoluble substance =X' on reacting with dilute H2SO4 released a colourless and odourless gas accompanied by brisk effervescence. When the gas was passedthrough water, the solution obtained turn blue litmus red . On bubbling the gas through lime water, it initially became milky and the milkiness disappeared when the gas was passed in excess. Identify the substance =X' and write the chemical equations of the reaction involved .

6. Ahmad took a magnesium ribbon (cleaned) and burned it on a flame. The white powder formed was taken in a test tube and water was added to it. He then tested the solution formed with red and blue litmus paper. What change was seen? Why?

Ans. Red litmus paper turned blue. Blue litmus paper remained blue. This is because the magnesium ribbon on burning in air forms the white magnesium oxide. Which dissolved in water, it forms magnesium hydroxide, which is basic in nature

7. Give one example of a combination reaction in which an element combines with a compound to give you a new compound.

Ans. $O_2 + 2SO_2 \rightarrow 2SO_3$ $8NH_3 + 3Cl_2 \rightarrow 6NH_4Cl$

Reaction worksheet

Write balanced equations for the following word equations.

1. Potassium chloride + Silver nitrate→Potassium nitrate + Silver chloride

2. Aluminum hydroxide + Sodium nitrate→ Aluminum nitrate + Sodium hydroxide

3. Iron metal + Copper(II) sulphate → Iron(ii) sulphate + copper metal

4. Aluminum metal + Copper(II) chloride →Aluminum chloride + copper metal

5. Potassium bromide→Potassium metal + Bromine

6. Calcium carbonate →Calcium oxide + Carbon dioxide gas

7. Zinc metal + Oxygen gas → Zinc oxide

8. Chlorine gas + Sodium metal →Sodium chloride

9. Aluminum sulphate + Barium chloride→Aluminum chloride + Barium sulphate

10. Sodium hydrogen carbonate → Sodium carbonate + Carbon dioxide + Water

Assertion And Reason Questions

DIRECTION : Mark the option which is most suitable :
(a) If both assertion and reason are true and reason is the correct explanation of assertion.
(b) If both assertion and reason are true but reason is not the correct explanation of assertion.
(c) If assertion is true but reason is false.
(d) If both assertion and reason are false.

Question : Assertion : Belgium and Spain has 'holding together' federation.
Reason : A big country divides power between constituent states and national government.
Answer : (a) Both assertion and reason are true and reason is the correct explanation of assertion.
The power of a large country is divided between constituent states and national government. The central government is more powerful than the states.

Question : Assertion : Coalition government is formed during dearth of coal in the country.

Reason : It helps in overcoming coal crisis.

Answer : (d) Both assertion and reason are false.

When no party is able to prove clear cut majority, several regional parties come together to form coalition government. It has no connection with scarcity of coal in the country.

Question : Assertion : A major step towards decentralization was taken in 1992 by amending the constitution.

Reason : Constitution was amended to make the third tier of democracy more powerful and effective.

Answer : (a) Both assertion and reason are true and reason is the correct explanation of assertion.

The constitution was amended in 1992 to make the third tier more powerful and effective. It includes steps like regular elections for local government bodies, reservation of seats for OBC, SC, ST and women and creation of State Election Commission. The reason thus justifies the assertion.

Very Short Questions for Class 10 Social Science Federalism

Question : What are the two main basis on which new states of India have been created?

Answer : The main basis on which new states have been created are Language and regional ethnicity.

Question : What is Panchayati Raj?

Answer : Rural local government is popularly known as Panchayati Raj. Each village or group of villages in some states, has a gram panchayat.

Question : What are the objectives of the federal system?

Answer : Federal system has dual objectives to safeguard and promote unity of the country and accommodate regional diversity. It is based on mutual trust and agreement to live together.

Question : What is decentralization? What is the need for it?

Answer : Decentralization can be defined as systematic distribution of authority or power at every level of the government. In India it is the centre, the state and the village level.

Question : Which language was recognised as the national language by the Constitution of India?

Answer : No language was recognised as the national language by the Constitution of India.
Hindi was identified as the official language.

Question : What do you mean by 'holding together federation'?

Answer : Holding together federation is a federation where a large country decides to divide the powers between the Central Government and the governments of the states, e.g. India.The Central government tends to be more powerful than the states.

Social Science Class 10 Important Questions Economics Chapter 1 Development Class 10 Important Questions

Very Short Answer Questions (VSA) 1 Mark

Question 1.

Define the term National Income?

Answer:

National income is defined as the total value of all final goods and services produced with a country plus net income from transactions like (export and import) with other countries.

Question 2.

Define GDP. (2012)

Answer:

GDP or Gross Domestic Product is the total value of all final goods and services produced during a particular year in a country.

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Question 3.

What is the main criterion used by the World Bank in classifying different countries? (2012)

Answer:

The World Bank uses average income or per capita income as a criterion for classifying different countries.

Question 4.

Why is the total income of countries not used to make comparisons between them? (2012)

Answer:

The total income of countries is not used to make comparisons between them, because the population of different countries is different and does not give a clear picture if comparisons are made on this basis.

Question 5.

Literacy rate measures the proportion of literate population in which age group? (2012)

Answer:

The age group of 7 years and above.

Question 6.

Which state of India has the lowest infant mortality rate? (2013)

Answer:

Kerala

Question 7.

What is Human Development Index? (2013)

Answer:

Human Development Index is a composite index of achievements of a nation in terms of three important variables, namely—longevity, knowledge and standard of living, that determine the quality of life.

Question 8.

Name the report published by UNDP which compares countries based on the educational levels of the people, their health status and per capita income. (2013)

Answer:

Human Development Report

Question 9.

What term is used to describe the 'average number of years a person is expected to live at birth'? (2013)

Answer:

Life Expectancy

Question 10.

What is the advantage of per capita income? Mention any one. (2014)

Answer:

It helps to compare the development of countries as per capita income tells us whether people in one country are better off than others in a different country.

Question 11.

What do final goods and services mean? (2014)

Answer:

The various production activities in the primary, secondary and tertiary sector produce large number of goods and services for consumption and investment are final goods and services.

Question 12.

Why is sustainable development essential? Give one reason. (2015)

Answer:

Sustained development aims at economic development without damaging the environment and at the same time conserving for the future.

Question 12.
Why is sustainable development essential? Give one reason. (2015)

Answer:

Sustained development aims at economic development without damaging the environment and at the same time conserving for the future. Resources are to be used in such a way that they are not overexploited.

Question 13.
Why is per capita income of different countries calculated in dollars and not in their own currencies by the World Bank? (Board Question)

Answer:

Per capita income of different countries is calculated in dollars and not in their own currencies because the dollar has been the strongest and stablest currency since the end of the 2nd World War and it becomes easy to compare the per capita incomes of various countries when these are converted into a common currency, i.e., US dollar ($).

Question 14.

"What may be development for one may not be development for the other." Explain with a suitable example. (Board Question)

Answer:

Different persons have different notions of development because life situations of persons are different. For example, Construction of dams leads to generation of hydroelectricity, thus development. However many people have to be displaced from their villages, hence it may not be development for them.

Question 15.

What is meant by sustainability of development? (Board Question)

Answer:

This signifies that the level of economic development of a country should be maintained or sustained in all the years. Development in the present should not compromise with the needs of the future generations.

Question 16.
Define:

1. Infant mortality rate
2. Literacy rate
3. Net attendance ratio
4. BMI

Answer:

1. Infant mortality rate. It indicates the number of children that die before the age of 1 year as a proportion of 1000 live children bom in that particular year.
2. Literacy rate. It measures the proportion of literate population in the 7 and above age group.
3. Net Attendance ratio. It is the total number of children of age group 6 to 10 attending school as a percentage of total number of children in the same age group.
4. BMI stands for Body Mass Index. It is calculated by dividing the weight of a person in kilograms (kgs) by the square of his/her height in metres. It is an indicator of the level of nourishment in adults.

Question 17.

Literacy rate measures the proportion of literate population in which age group? (2017 D)

Answer:

The age group of 7 years and above.

Short Answer Questions (SA) 3 Marks

Question 18.

Why do we use averages? Are there any limitations to their use? Illustrate with your own examples related to development. (NCERT Question)

Answer:

1. Total income is not a useful measure for comparison between countries. Since countries have different populations, comparing total income does not tell what an average person is likely to earn. Hence, we use average income which is total income of the country divided by total population

Question 18.

Why do we use averages? Are there any limitations to their use? Illustrate with your own examples related to development. (NCERT Question)

Answer:

1. Total income is not a useful measure for comparison between countries. Since countries have different populations, comparing total income does not tell what an average person is likely to earn. Hence, we use average income which is total income of the country divided by total population.

2. The defect of average as a measure is that it does not show the distribution (dispersion) of income between the rich and the poor.

3. Two countries may have the same average income but in one country almost every family may enjoy more or less the same kind of income, whereas in the other, some may

be very rich and others very poor. The disparity between rich and poor is an important feature that the average measure (per capita income) does not consider. Example: In terms of development, we can take the example of India, where the metro towns are full of high-rise buildings and shopping malls while some villages have not yet been provided with a basic necessity like electricity.

Question 19.

What is per capita income? Mention any two limitations of per capita income as an indicator of development. (2012)

Answer:

The total income of a country divided by its total population gives the Per Capita Income.

Money cannot buy all the goods and services that are needed to live well. So income by itself is not a completely adequate indicator of material goods and services that citizens are able to use. For example, money can not buy a pollution-free environment or ensure that one gets unadulterated medicines, unless one can afford to shift to a community that already has all these things.

Question 21.

On the basis of which three indicators of HDI 2004 Sri Lanka has better rank than India? (2014)

Question 21.

On the basis of which three indicators of HDI 2004 Sri Lanka has better rank than India? (2014)

Answer:

Three indicators of HDI 2004 in which Sri Lanka has better rank than India:

1. Per capita income—The per capita income of Sri Lanka in US dollars was 4,390 US dollars while that of India was 3,139 US dollars.
2. Life expectancy at birth—The life expectancy at birth for Sri Lanka was 74, higher than that of India at 64.
3. Gross enrolment ratio for three levels—Sri Lanka had Gross Enrolment ratio of 69 while that of India was 60.

Question 22.

'Conflicting goals can also be developmental goals'. Elaborate with examples. (2014)

Answer:

All persons do not have the same notion of development or progress. Each one of them seeks different things. The seek things that are most important for them, i.e., that which can fulfil their aspirations or desires. In fact at times two persons or groups of persons may seek things which are conflicting.

A girl expects as much freedom and opportunity as her brother and that he also shares in the household work. Her brother may not like this.

To get more electricity, industrialists may want more dams. But this may submerge the land and disrupt the lives of people who are displaced, such as tribals. They might resent this and may prefer small check dams or tanks to irrigate their land.

10.Light (Reflection and Refraction)

1. Ray of Light : A line drawn in the direction of propagation of light is called a ray of light.

2. Beam of Light : A group of rays of light emitted by a source of light is called a beam of light. A light beam is of three types.

(i) Parallel beam : A group of light rays parallel to each other is known as parallel beam of light. 7.

(ii) Divergent beam : A group of light rays spreading out from a source of light is called divergent beam of light.

(iii) Convergent beam : A group of light rays meeting at a point is called convergent beam 8. of light.

3. Reflection of Light : There are some surfaces which have ability to send the light back in the same medium when light strikes it. This 9. phenomena of sending the light back in the same medium by a surface is called reflection of light.

(i) The incident ray, the reflected ray and the normal at the point of incidence, all lie in a same plane.

(ii) The angle of incidence is always equal to the angle of reflection, $\angle i = \angle r$.

4. Image : When light rays meet or appear to meet after reflection from a mirror,then it is called an image.

1. Real Image : It is a kind of image which is formed by actual intersection of light rays after reflection.

2. Virtual Image : It is a kind of image which is formed by producing the reflected rays backward after reflection.

5. Plane Mirror : Plane mirror is a piece of glass whose one side is polished by using silver paint, which is covered by a coating of red paint to protect the silver layer.

6. Spherical Mirrors : It is part of hollow glass sphere whose one surface is polished.

There are two types of spherical mirror.

(i) Concave Mirror : It is a spherical mirror whose outer surface is polished and inner or concave side is reflecting surface.

(ii) Convex Mirror : It is a spherical mirror whose inner is polished and outer side or convex side is the reflecting surface.

Principal Focus :

A point on the principal axis of a spherical mirror where the rays of light parallel to the principal axis meet or appear to meet after reflection from the mirror.

Focal Length :

The distance between the pole (P) and principal focus(F) of a spherical mirror is called the focal length of the mirror. It is denoted by f.

Uses of Concave Mirror :

(i) It is used as a shaving mirror because when it is placed close to the face, it forms a large image.

(ii) It is used in solar heating devices like solar cooker, because it converges Sun's rays over a small area to produce high temperature.

(iii) It is used for security checking purposes.

10. Uses of Convex Mirror :

(i) It is used as rear view mirror in automobiles because it gives erect image as well as diminished due to which Pt has wider field of view.

(ii) It is also used in street lights.

11. Mirror Formula :

It is a relation between distance of object, distance ofimage from the pole ofthe mirror and it's focal length, i.e., relation between 'u', 'v and It is given by

$$\frac{1}{f} = \frac{1}{u} + \frac{1}{v}$$

12. Magnification : It is defined as the ratio of height of image to the height of the object. It is denoted by letter m.

$$m = \frac{\text{height of image (I)}}{\text{height of object (O)}}$$

13. Refraction of Light : The bending of ray of light when it passes from one medium to another is called refraction of light.

Laws of Refraction :

(i) The incident ray, the refracted ray and the normal at the point of incidence all lie in the same plane.

(ii) When a ray of light undergoes refraction then the ratio of sine of angle of incidence to the sine of angle of refraction is constant.

14. The Refractive Index : The refractive index of medium 2 with respect to medium is given by the ratio of the speed of light in medium 1 and the speed of light in medium 2. This is usually represented by the symbol n_{21}. This can be expressed in an equation form as

$$n_{21} = \frac{\text{Speed of light in medium 1}}{\text{Speed of light in medium 2}} = \frac{v_1}{v_2}$$

15. Refraction by spherical lenses : Lens is a transparent medium which is formed by joining two pieces of spherical glass. There are two types of lenses.

(i) Convex Lens : It is a lens which is thicker at the centre and thinner at the edges.

(ii) Concave Lens : It is a lens which is thinner at the centre and thicker at the edges.

16. Terms related to a lens

Optical Centre of Lens : It is the centre of the lens through which light can pass without any deviation.

Principal Axis : It is the line passing through optical centre and is perpendicular to the line joining its edges.

Principal Focus : It is a point on the principal axis where all light rays which are parallel to principal axis either converge or appear to diverge from, after refraction.

17. Lens formula :

$$\frac{1}{f} = \frac{1}{v} - \frac{1}{u}$$

18. Magnification : Magnification, $m = h_2/h_1$

Ratio of height of image to the height of object.

It is also given by v/u i.e., Ratio of distance of image to the distance of object.

$$\therefore \frac{h_2}{h_1} = \frac{v}{u}$$

19. Power of a lens : A beam of light parallel to principal axis either gets converged or diverged after refraction by a lens. Some lenses converge the beam of light to a small extent and some lenses converge it to a large extent. This ability of lens to converge or diverge a beam of light is known as the power of lens.

Si unit of power of lens is dioptre : One dioptre is the power of a lens whose focal length is 1 m.

Power of a combination of two or more lenses :

If two or more lenses are placed together to form a combined lens then the power of this combined lens is equal to the sum of the powers of individual lenses.
$P = P_1 + P_2 + P_3 + \ldots\ldots$