



**Arsh Vidya Kendra ,
Gurugram**

Summer

Holiday

Homework

Grade - IX

Enjoy

Your

Vacations

General Instructions:-

- **Every subject holiday homework do in separate notebook.**
- **Do neat and clean work.**

Subject – English

1) Read the passage given below:-

Have you ever failed at something somiserably that the thought of attempting to do it again was the last thing you wanted to do? If your answer is yes, then you are “nota robot.” Unlike robots, we human beings have feelings, emotions, and dreams. We are all meant to grow and stretch despite our circumstances and our limitations. Flourishing and trying to make our dreams come true is great when life is going our way. But what happens when it’s not? What happens when you fail despite all of your hard work? Do you stay down and accept the defeat or do you get up again and again until you are satisfied? If you have a tendency to persevere and keep going then you have what experts call, grit. Falling down or failing is one of the most agonizing, embarrassing, and scariest human experiences. But it is also one of the most educational, empowering, and essential parts of living a successful and fulfilling life. Did you know that perseverance (grit) is one of the seven qualities that have been described as the keys to personal success and betterment in society? The other six are: curiosity, gratitude, optimism, self-control, social intelligence, and zest. Thomas Edison is a model for grit for trying 1,000 plus times to invent the light bulb. If you are reading this with the lights on in your room, you know well he succeeded. When asked why he kept going despite his hundreds of failures, he merely stated that what he had been doing was not failure. There were hundreds of ways not to create a light bulb. This statement not only revealed his grit but also his optimism for looking at the bright side. Grit can be learned to help you become more successful. One of the techniques that helps is mindfulness. Mindfulness is a practice that helps the individual stay in the moment by bringing awareness of his or her experience without judgement. This practice has been used to quiet the noise of their fears and doubts. Through this simple practice of mindfulness, individuals have the ability to stop the self-sabotaging downward spiral of hopelessness, despair, and frustration. What did you do to overcome the negative and self-sabotaging feelings of failure? Reflect on what you did, and try to use those same powerful resources to help you today.

Answer the following questions, based on the passage above.

- A.** According to the passage, how does the author view the experience of failing?
- i)** Exclusively negative
 - ii)** Both positive and negative
 - iii)** Insignificant
 - iv)** Inevitable but inconsequential
- B.** What is the tone of the writer in the given lines from paragraph (2)? Rationalise your response in about 40 words.
Unlike robots, we human beings have feelings, emotions, and dreams. We are all meant to grow and stretch despite our circumstances and our limitations.
- C.** Complete the sentence appropriately.
An inference that can be made about the author's opinion on Thomas Edison's attitude towards failure is
- D.** The passage includes some words that are opposites of each other. From the sets (a)-(e) below, identify two sets of antonyms:
- i)** Agonising and Empowering
 - ii)** Mindfulness and Despair
 - iii)** Falling and Failin
 - iv)** Hopelessness and Optimism
 - v)** Grit and perseverance
 - vi)** Complete the sentence appropriately.

- E. The author's tone change when referring to the experience of falling down or falling from hopeful to
- F. Based on the reading of the passage, examine, in about 40 words, how Thomas Edison's attitude towards failure is analogous to a painter creating a masterpiece.
- G. What is the message conveyed by the author, in the following case?
If you are reading this with the lights on in your room, you know well he succeeded.
 - i) Thomas Edison's failures were insignificant.
 - ii) Reading with the lights on is a common occurrence.
 - iii) Thomas Edison's perseverance led to the successful invention of the light bulb.
 - iv) The author is assuming the reader has access to electricity.
- H. State whether the following passage displays an example of expository/informative /persuasive writing.

2) Read the passage given below:-

The choices we make on a daily basis—wearing a seatbelt, lifting heavy objects correctly or purposely staying out of any dangerous situation—can either ensure our safety or bring about potentially harmful circumstances. You and I need to make a decision that we are going to get our lives in order. Exercising self-control, self-discipline and establishing boundaries and borders in our lives are some of the most important things we can do. A life without discipline is one that's filled with carelessness. We can think it's kind of exciting to live life on the edge. We like the image of "Yeah! That's me! Living on the edge! Woo-hoo !" It's become a popular way to look at life. But if you see, even highways have lines, which provide margins for our safety while we're driving. If we go over one side, we'll go into the ditch. If we cross over the line in the middle, we could get killed. And we like those lines because they help to keep us safe. Sometimes we don't even realise how lines help to keep us safe. I'm not proud of this, but for the first 20 years of my life at work, I ignored my limits. I felt horrible, physically, most of the time. I used to tell myself "I know I have limits and that I've reached them, but I'm going to ignore them and see if or how long I can get by with it." I ran to doctors, trying to make myself feel better through pills, vitamins, natural stuff, and anything I could get my hands on. Some of the doctors would tell me, "It's just stress." That just made me mad. I thought stress meant you don't like what you do or can't handle life, and I love what I do. But I kept pushing myself, travelling, doing speaking engagements and so on— simply exhausting myself. Finally, I understood I was living an unsustainable life and needed to make some changes in my outlook and lifestyle. You and I don't have to be like everyone else or keep up with anyone else. Each of us needs to be exactly the way we are, and we don't have to apologize for it. We're not all alike and we need to find a comfort zone in which we can enjoy our lives instead of making ourselves sick with an overload of stress and pressure.

Answer the following questions, based on the passage above.

- A. What is the speaker's attitude towards setting boundaries and self-discipline?
 - i) Indifferent
 - ii) Enthusiastic
 - iii) Dismissive
 - iv) Critical
- B. What is the tone of the writer in the given lines from paragraph (4)? Rationalise your response in about 40 words.
I ran to doctors, trying to make myself feel better through pills, vitamins, natural stuff, and anything I could get my hands on.
- C. Complete the sentence appropriately.
Readers may perceive the speaker's realization as a demonstration of.....
- D. The passage includes some words that are similar to each other. From the sets (a)-(e) below, identify one set of synonyms:
 - i) dangerous and harmful
 - ii) self-control and self-discipline

- iii) pushing and exhausting
- iv) stress and pressure
- v) happy and elated

E. Complete the sentence appropriately.

Based on the speaker's comparison of living on the edge to driving on highways, one can infer that

F. How does the analogy of highways and lines serve to illustrate the consequences of crossing personal boundaries?

G. What is the central theme conveyed by the speaker's transformation towards the end of the passage?

- i) The necessity of change for personal well-being
- ii) The enjoyment of a carefree lifestyle
- iii) The importance of maintaining societal norms
- iv) The thrill of pushing personal limits

H. State whether the passage display an example of persuasive / expository / argumentative writing.

3) Read the passage given below:-

Fish keeping has benefits that make it an attractive hobby for millions of people. Aquariums can bring a bit of nature, a living ecosystem, into any home, including apartments that do not allow other pets. Like tending a furry animal, helping to maintain a fish tank can teach a child the responsibility of caring for other living creatures. As pets fish have distinct advantages: they are quiet, they do not chew or scratch the furniture, and with a few slow-release feeders in their tank, they can safely be left alone for a week or two. But it is likely the documented benefit to human health that has helped make aquariums so popular. Like petting a dog or cat, gazing at an aquarium at the end of a long, hard day can reduce stress and lower blood pressure. Likewise, research shows that people waiting to see a doctor or undergo medical procedure were less anxious after watching fish swimming in a tank. Watching fish also has a significant calming effect on children with attention deficit as well as on elderly people with Alzheimer's disease. Today, home aquariums have become popular as commercial fish breeding operations and air transport made transport have made them easy and affordable. More durable tanks and improved filtration system enabled hobbyists to sustain fish for longer periods. Today, home aquariums range from a child's goldfish bowl to elaborate tanks holding several hundred gallons of water and dozens of exotic fish. More adventurous hobbyists opt for saltwater tanks, which take more work and equipment to maintain a stable environment. Saltwater fish are more costly and more susceptible to changes in temperature and water quality than freshwater species. On the positive side, they are spectacularly colorful and turn a tank into a dramatic focal point. Modern aquariums have evolved far beyond the boring rectangular tank. Today's models come in almost any shape imaginable -round hexagonal, bow front, concave, free form and flat to hang on the wall. They have also become key elements in home and office decor. They are built on walls and incorporated into tables, lamps, desks and even bath tubs. Almost any object it seems can be turned into a fish tank. (approx.360 words)

Answer the following questions, based on the passage above.

A. What is the primary purpose of the passage?

- i) To provide a step-by-step guide on setting up a home aquarium.
- ii) To persuade the readers to consider Fish keeping as a rewarding hobby.
- iii) To discuss the history of commercial Fish breeding operations.
- iv) To compare the benefits of fresh water and saltwater aquariums.

B. Is the tone of the passage primarily positive, negative or neutral towards fish keeping? Provide examples to support your answer.

C. Complete the sentence appropriately.

From the line, 'Likewise, research shows that people waiting to see a doctor or undergo medical procedure were less anxious after watching fish swimming in a tank.' one can infer that

- D. The passage includes some words that are opposites of each other. From the sets (a)-(e) below, identify one set of antonyms:
- i) stress and calming
 - ii) concave and free
 - iii) easy and affordable
 - iv) positive and negative
 - v) happy and sad
- E. Complete the sentence appropriately.
The author's opinion on the future of fish keeping a hobby appears to be optimistic because
- F. What inference can be made about the impact of technological advancements on the popularity of home aquariums? Use details from the passage to justify your inference.
- G. What is meant by "exotic fish" in the passage?
- i) Fish species that are native to a particular region.
 - ii) Fish that are and difficult to find in pet store
 - iii) Fish with unique patterns and colours.
 - iv) Fish commonly found in home aquariums.
- H. State whether the following passage displays an example of informative/expository/persuasive writing.

4) Read the text given below:-

The words probiotics, prebiotics, and postbiotics may sound like variations of the same thing, but what a difference a prefix makes. The first is a category of health-promoting microbes. The latter two groups are types of beneficial molecules. But all three biotics are critical for supporting the community of microscopic organisms that live in the gastrointestinal tract, known as the gut microbiome. With both beneficial and harmful bacteria living in the human body, these diet-related factors — the biotics — help tip the balance in the positive direction. It is important to understand their differences, as you'll see, because each of these factors serves a distinct purpose, even as they work together.

Despite their importance for the gut microbiome, the health benefits of these 'biotics', which are present in certain foods or result from their metabolism, extend beyond the digestive tract. A growing body of scientific evidence has linked prebiotics, probiotics, and postbiotics, with improvements in metabolic diseases — including obesity and cholesterol abnormalities — depressive symptoms and poor sleep quality, among many other conditions. Besides promoting general gut health, consuming food rich in probiotics can improve irritable bowel syndrome and antibiotic-related diarrhea, prevent traveller's diarrhea, produce vitamins and increase nutrient absorption, and decrease the risk of common infections. In fact, when consumed regularly, probiotics have been found to reduce the occurrence of upper respiratory tract infections (like the common cold). Many different types of beneficial bacteria are considered probiotics. The most common ones include Lactobacillus and Bifidobacterium, of which there are dozens of strains. "You have to match what it is you're concerned about with the probiotic you should use," says Gregor Reid. Many different types of beneficial bacteria are considered probiotics. Some foods, such as yogurt, kefir, kimchee, and fermented soybeans and kombucha naturally contain probiotics. But here's where things get complicated: not all fermented foods or yogurts contain probiotics, Reid says. As a consumer, a good starting point is to look for the phrase "contains live and active cultures" on the label; it's even better if specific strains of bacteria are listed, because then you'll know you're getting the right stuff. Simply put, prebiotics are sources of food for those beneficial microbes — the probiotics. They are typically a form of carbohydrate or fiber that we don't have the enzymes to digest. As a result, they move through the digestive tract to the intestine, where beneficial bacteria

(probiotics) can feast on them. When you consume foods that are rich in probiotics and prebiotics, the microbes in your gut consume the undigestible prebiotic fiber and produce bioactive compounds called postbiotics. They are ultimately the endgame that we want — they affect how our gut operates and keeps the good bacteria there and the bad bacteria out.

Answer the following questions, based on the above passage:

- A.** Which of the following statements best describes the author's attitude towards probiotics?
- Probiotics, prebiotics and postbiotics are variations of the same thing, with just a difference of a prefix.
 - All fermented foods or yogurts naturally contain probiotics.
 - All three biotics are equally important to support microscopic organisms that live in the gut microbiome.
 - Only probiotics are important as they can improve irritable bowel syndrome and antibiotic-related diarrhea.
- B.** According to the writer, health benefits of all the 'biotics' extend beyond the digestive tract. Rationalise your response in about 40 words.
- C.** Complete the sentence appropriately.
To get the right probiotic and to match it with your body's requirements, it is important to see the label for
- D.** The passage includes some words that are opposites of each other from the sets (a) - (e) below, identify two sets of antonyms.
- increase and decrease
 - pro biotic and post biotic
 - beneficial and harmful
 - feast and fermented
 - consuming and digestive
- E.** Complete the sentence appropriately.
The author wants to stress the fact that there is not just one type of beneficial bacteria considered as probiotic, in fact, some probiotics have
- F.** Based on the reading of the passage, examine in about 40 words, the importance of prebiotics for the human gut and how they are related to probiotics.
- G.** As a consumer, if you want to pick a probiotic product, what is the most important thing to keep in mind? Pick the best answer.
- Any fermented product that contains probiotics.
 - Checking the label for specific strains of bacteria.
 - All products under "probiotics" section in a grocery store are safe to pick.
 - Checking the label which clearly says "probiotics" is sufficient.
- H.** "Despite their importance for the gut microbiome, the health benefits of these 'biotics', which are present in certain foods or result from their metabolism, extend beyond the digestive tract." As per this statement from the passage, how relevant are the 'biotics' for humans? Pick the best answer.
- Their relevance has been proven by Scientific evidence.
 - Not very relevant as more study is needed.
 - Their relevance cannot be generalised for everyone.
 - Only probiotics are relevant for humans.

5) The following passages have not been edited. There is one error in each line. Write the incorrect word and the correction in your answer sheet as given in the example.

Remember to underline the word that you have supplied.

- a)** Tina had going to the market
when she slips and
fall on a banana peel.
She is not looking at the road but her new sandals
which she have bought the previous day.

This causing the injury.
Now, she is recovered at home.
She has realising that
she shall be careful in future

- b)** I visit a suburban village
last year. I am amazed to see
that people keep the surroundings
clean. They are throwing the trash
in dustbins. There is no garbage
dumped anywhere. I learn a
lot during that trip. I still remembered it
- c)** Sudhir had always wanting
a blue bicycle. When he is gifted
one on his last birthday, he was thrill.
He smiling and
jumping with joy.
Then he thanking
his parents who was looking at him.
- d)** Coral reefs is diverse underwater
ecosystems hold together by calcium
carbonate structures. They were
secreted by corals. Colonies of animals built
coral reefs. These animals is found in marine water.
An individual coral is knew as a polyp.
It are a very small and simple organism.
Coral reefs looks beautiful
and is admired.
- e)** Ritu had writing a letter
to the editor of a newspaper before she sleep
yesterday. She deciding to draw attention to
increased in chain-snatching in her locality. Residents
had been complained about it for a long time.
However, two more incidents had occur
in the recent past. So, everyone were
alarmed. The residents has approached
the police too, but to no avail. So, many sign
the complaint letter in support.

Subject – Social Studies

CASE - BASED QUESTIONS

- 1) Democracy cannot get us everything and is not the solution to all problems. But it is clearly better than any other alternative that we know. It offers better chances of a good decision; it is likely to respect people's own wishes and allows different kinds of people to live together. Even when it fails to do some of these things, it allows a way of correcting its mistakes and offers more dignity to all citizens. That is why democracy is considered the best form of government. The most common form that democracy takes in our times is that of a representative democracy. You have already read about this in the previous classes. In the countries we call democracy, all the people do not rule. A majority is allowed to take decisions on behalf of all the people. Even the majority does not rule directly. The majority of people rule through their elected representatives.
 - a) What is the most common form of democracy now-a day?
 - b) How does democracy dignify its citizens?
 - c) Why is democracy considered as the best form of government?
- 2) Democracy is not a magical solution for all the problems. It has not ended poverty in our country and in other parts of the world. Democracy as a form of government only ensures that people take their own decisions. This does not guarantee that their decisions will be good. People can make mistakes. Involving the people in these decisions does lead to delays in decision making. It is also true that democracy leads to frequent changes in leadership. Sometimes this can set back big decisions and affect the government's efficiency.
 - a) Why does democracy lead to delay in decision making?
 - b) What type of problems can be created in democracy due to frequent change of leaders in democracy?
 - c) Democracy has not ended poverty in any part of the world, still it is considered as a best form of government. Why?
- 3) **Choose the correct answer :-**
 - A. Which of the following statements is not true for a democracy?
 - i) The final decision power must rest with elected representatives.
 - ii) It must be based on free and fair elections.
 - iii) Every citizen must have one vote, but each vote can have different value.
 - iv) The government must rule within limits set by constitutional law and citizens' rights.
 - B. Zimbabwe attained independence from White minority rule in
 - i) 1980
 - ii) 1990
 - iii) 2000
 - iv) 2010
 - C. Democracy is a form of government
 - i) ensures that people take their own decisions
 - ii) ensures that good decisions are taken
 - iii) ensures that timely decisions are taken
 - iv) ensures that everybody is satisfied
 - D. The most common form that democracy takes in our times is
 - i) Responsive government.
 - ii) Representative democracy
 - iii) Transparent democracy.
 - iv) Accountable government
 - E. In a modern democracy, involving a large number of people physically, is impossible because
 - i) All the citizen cannot give time and have no desire.
 - ii) All citizens are not skilled
 - iii) All people can't sit together and take decision.

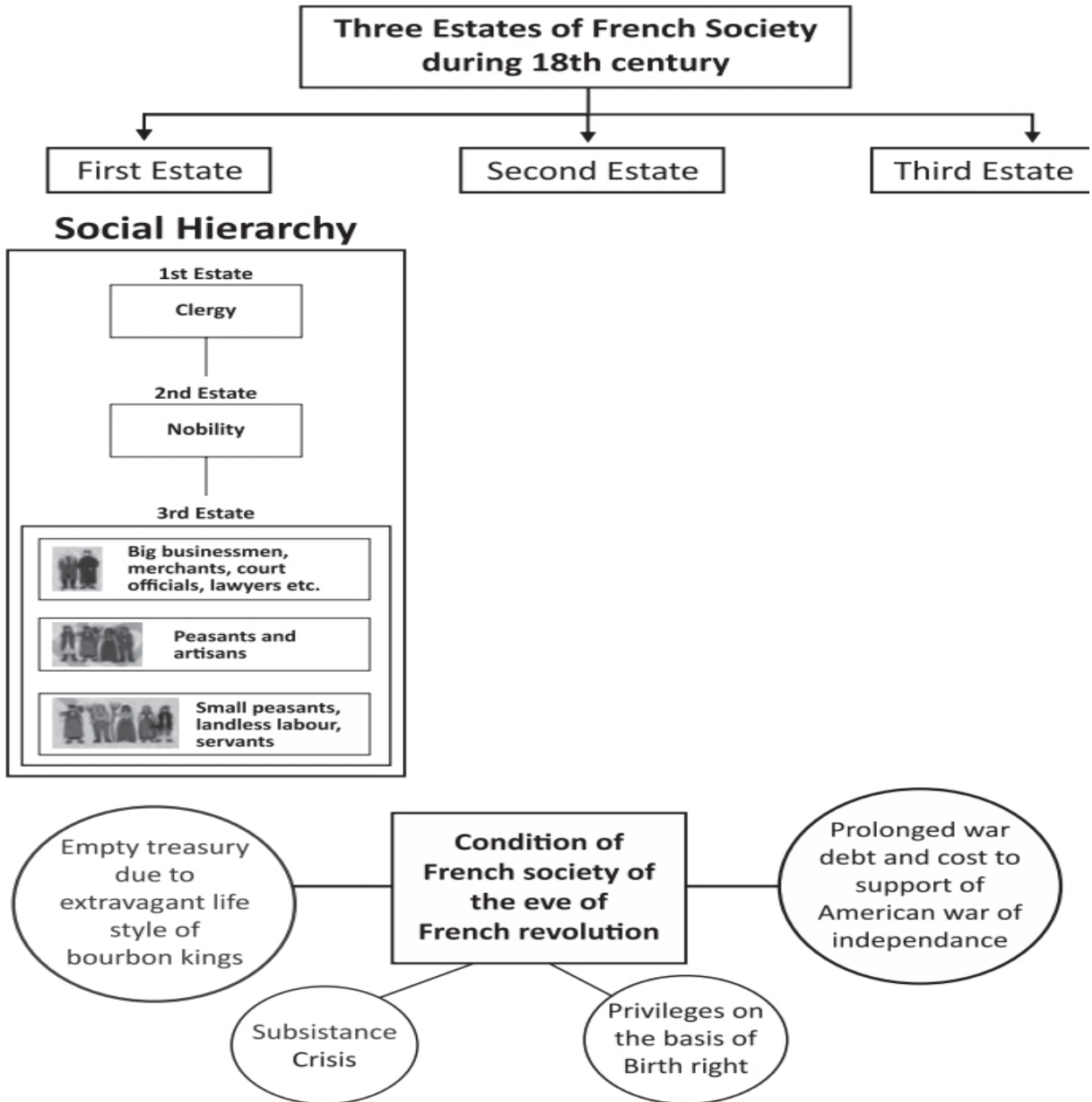
- iv) All of the above
- F. Which form of government can give guarantee that there will be no mistake by the government?
- i) Democracy
 - ii) Dictatorship
 - iii) Military
 - iv) None of these
- G. Democracy is considered as the best form of government, because it –
- i) Allows us to correct our mistakes
 - ii) Helps to protect our assets and property
 - iii) Gives chances to live in a comfortable and luxurious way
 - iv) Provides us tight security
- H. A democratic decision is
- i) a decision agreed upon by majority
 - ii) a decision that involves consultation and consent of those affected by the decision
 - iii) a decision taken by minority
 - iv) None of these
- I. Assertion: Democratic government is an accountable form of government.
Reason: It listens to the demands and tries to solve the problems of the people.
- i) Both the Assertion and the Reason are correct and the reason is the correct explanation of the assertion
 - ii) The Assertion and the Reason are correct but the reason is not the correct explanation of the assertion.
 - iii) The assertion is true but reason is false.
 - iv) Both assertion and reason are false
- J. Assertion: Popular government can be undemocratic and popular leader can be autocratic.
Reason: Democracy gives unlimited power to the leader.
- i) Both the Assertion and the Reason are correct and the reason is the correct explanation of the assertion
 - ii) The Assertion and the Reason are correct but the reason is not the correct explanation of the assertion.
 - iii) The assertion is true but reason is false.
 - iv) Both assertion and reason are false.
- K. What did this picture symbolize for?



Chapter - 1

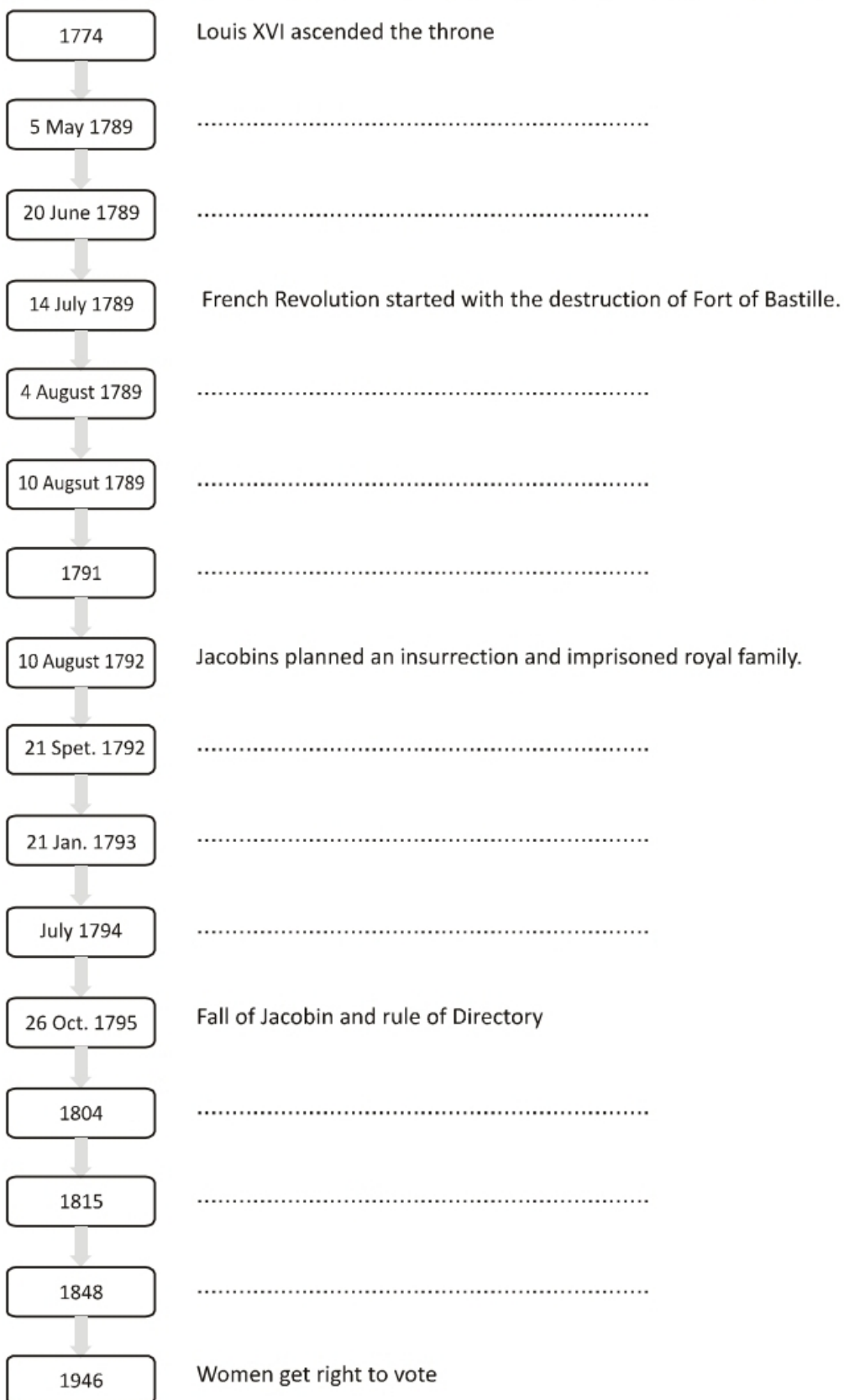
The French Revolution

Key Points to be Remember:-



Activity Sheet

French Revolution and subsequent events through the eyes of dates.



Subject - Computer

Project	<p>Roll no. - 1 to 8 Make a presentation on Artificial Intelligence with minimum 10 – 15 slides. Save the same in pen drive.</p> <p>Roll no. - 9 to 15 Make a presentation on Social Media with minimum 10 – 15 slides. Save the same in pen drive.</p> <p>Roll no. - 16 to 22 Make a presentation on Cyber Crime with minimum 10 – 15 slides. Save the same in pendrive.</p> <p>Learn the Chapter – 2 and Chapter – 3 full for FA – 2.</p> <p>Complete the worksheet that is attached given below in the computer notebook.</p>
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- 1) Your class teacher gave you a hard a collage and asked you to modify it using Photoshop or any other graphics software. To modify the collage using computer, you first need to make a soft copy of it. Which device do you think can be used for this?
 - a) Printer
 - b) Scanner
 - c) Photocopier
 - d) None of the above
- 2) What is the full form of RDMS?
 - a) Relative Database Management System
 - b) Recreate Database Management System
 - c) Relational Database Management System
 - d) Reparative Database Management System
- 3) Which of these secondary devices has the maximum data storage capacity?
 - a) Memory Stick
 - b) Floppy
 - c) CD-ROM
 - d) Blu-ray
- 4) Write the shortcut keys of the following according to Open Office:-
 - a) Styles & Formatting
 - b) Find & Replace
 - c) Default Formatting
 - d) Inserting a Table
- 5) Write the secondary name of the following:-
 - a) Open Office Text Document
 - b) Microsoft Excel
 - c) Microsoft Word
 - d) Text file
- 6) Differentiate between Application & System Software.
- 7) Differentiate between Primary & Secondary Storage Devices.
- 8) Define the term an Operating System

विषय - हिंदी

प्रश्न 1) वाक्य रूपांतरण के उदहारण:-

- 1) 'बिमारी के कारण मैं महाविद्यालय नहीं जा सका'। वाक्य को संयुक्त वाक्य में बदलिए -
 - i) मैं महाविद्यालय नहीं जा सका, बिमारी के कारण।
 - ii) मैं बिमार हो गया था, इसलिए महाविद्यालय नहीं जा सका।
 - iii) बिमारी के कारण मैं कई दिनों तक महाविद्यालय नहीं जा सका था।
 - iv) बिमारी के कारण मैं विद्यालय नहीं जा सका।
- 2) आपकी तरह कोई और नहीं लिखता'। वाक्य को मिश्र वाक्य में बदलिए -
 - i) आपके लिखने का अंदाज बहुत अच्छा हैं।
 - ii) आप बहुत अच्छा लिखते हैं।
 - iii) आपकी तरह कोई ओर लिख ही नहीं सकता ।
 - iv) जैसा आप लिखते हैं वैसा कोई और नहीं।
- 3) 'मैं चाहता था कि आज हिंदी पढ़ूँ'। वाक्य को सरल वाक्य में बदलिए -
 - i) जैसे ही मेरा मन किया कि आज हिंदी पढ़ूँ लाइट चली गई।
 - ii) मैं चाहता था कि मैं हिंदी पढ़ूँ।
 - iii) मैं आज हिंदी पढ़ना चाहता था।
 - iv) मेरा मन था कि आज हिंदी पढ़ूँ।
- 4) 'बदमाश लोगों से सभी दूर रहना चाहते हैं'। वाक्य को मिश्र वाक्य में बदलिए -
 - i) बदमाश लोगों से सभी दूर रहना चाहते हैं कोई बात नहीं करता।
 - ii) जो बदमाश होते हैं सभी उनसे दूर रहना चाहते हैं।
 - iii) सभी बदमाश लोगों से दूर रहते हैं।
 - iv) बदमाश लोगों से सभी दूर रहते हैं क्योंकि वे सभी से झगड़ा करते हैं।
- 5) 'जब से यहाँ वर्षा आया है तब से पानी बढ़ गया' । वाक्य का सम्बन्ध किससे है-
 - i) संयुक्त वाक्य से
 - ii) सरल वाक्य से
 - iii) मिश्र वाक्य से
 - iv) प्रश्न वाक्य से
- 6) 'जैसे ही चोरी हुआ पुलिस आ गए'। वाक्य को संयुक्त वाक्य में बदलिए -
 - i) जैसे ही पुलिस आए चोर भाग गए।
 - ii) पुलिस आए और चोर भाग गए।
 - iii) पुलिस आते ही चोर भाग गए।
 - iv) पुलिस आते ही चोरों को भागना पड़ा।
- 7) जबबढ़ेगी महँगाई तब-तब होंगे चुनाव जब-'। वाक्य को सरल वाक्य में बदलिए -
 - i) जैसे ही चुनाव होगा वैसे ही महँगाई बढ़ेगी।
 - ii) जबतब महँगाई बढ़ जायेगा यह सत्य है।-जब चुनाव होगा तब-

- iii) चुनाव आने से ही महँगाई बढ़ जाएगी।
- iv) जबतब महँगाई बढ़ जाएंगे।-जब चुनाव आएंगे तब-
- 8) कक्षा में प्रथम आने वाले छात्र को ईनाम दिया गया।'। वाक्य को मिश्र वाक्य में बदलिए -
- जो छात्र कक्षा में प्रथम आया था उसे ईनाम दिया गया।
 - कक्षा में प्रथम आने वाले छात्र को हमेशा ईनाम दिया जाता है।
 - छात्र को ईनाम दिया गया कक्षा में प्रथम आने पर।
 - जो कक्षा में प्रथम आता है उस छात्र को ईनाम दिया जाता है।
- 9) बादल आकर भी न बरसे।'। वाक्य को संयुक्त वाक्य में बदलिए -
- बदल आये तो सही वर्षा न हुई।
 - जैसे ही बदल आए वैसे ही वर्षा हुई।
 - बदल आए परन्तु वर्षा न हुई।
 - उपरोक्त कोई नहीं
- 10)सूर्योदय होने पर उजाला आ गया।'। वाक्य को संयुक्त वाक्य में बदलिए -
- सूर्योदय हुआ और उजाला आ गया।
 - सूर्योदय होने पर हमेशा ही उजाला आ जाता है।
 - सूर्योदय होने पर उजाला आ गया।
 - जैसे ही सूर्योदय हुआ वैसे ही उजाला आ गया।
- 11)'आप आ कर सो जाए' । वाक्य को संयुक्त वाक्य में बदलिए -
- क्योंकि आप गए हैं तो आप सो सकते हैं।
 - आप आ कर सोने चले जाएँ।
 - आ कर हमेशा सो जाए।
 - आप आएँगे और सोएँगे।
- 12)'वह पटना जा कर काम करने लगे हैं।'। वाक्य को मिश्र वाक्य में बदलिए -
- क्योंकि वह पटना जा कर काम करने लगे हैं।
 - वह पटना इसीलिए गए थे क्योंकि वह काम करना चाहते थे।
 - वह पटना गए ताकि वह काम कर सकें।
 - जब से वह पटना गए तब से काम करने लगे हैं।
- 13)'रोहन ने नकल करने वाले छात्र को पकड़ लिया।'। वाक्य को संयुक्त वाक्य में बदलिए ।
- छात्र नकल कर रहा था, रोहन ने पकड़ लिया।
 - रोहन ने नकल करने वाले छात्र को पकड़ कर सजा दी।
 - रोहन ने छात्र को पकड़ा क्योंकि वह नकल कर रहा था।
 - इन में से कोई नहीं
- 14)'सूरज के डूबते ही अँधेरा हो गया।'। वाक्य को मिश्र वाक्य में बदलिए -
- जैसे ही सूरज डूबा वैसे ही अँधेरा हो गया।
 - सूरज डूबा और उजाला दूर हो गया।

- iii) क्योंकि सूरज डूब गया था उजाला को दूर होना ही था।
- iv) उपरोक्त कोई नहीं
- 15) परीक्षाएँ समाप्त होते ही हम पंजाब गए। वाक्य को संयुक्त वाक्य में बदलिए -
- i) क्योंकि परीक्षाएँ समाप्त हो गई थी इसलिए हम पंजाब जाएंगे।
- ii) परीक्षाएँ समाप्त हुई नहीं कि हम पंजाब गए।
- iii) परीक्षाएँ समाप्त हुई और हम पंजाब चले गए।
- iv) जैसे ही परीक्षाएँ समाप्त हुई वैसे ही हम पंजाब आ गए।
- 16) 'सोहन ने टॉस जीता इसलिए खुश हो गया।' वाक्य को सरल वाक्य में बदलिए -
- i) सोहन ने टॉस जीता था इसलिए खुश हो रहा था।
- ii) सोहन खुश हो गया क्योंकि उसने टॉस जीता था।
- iii) टॉस जीतते ही सोहन खुश हो गया।
- iv) सोहन ने टॉस जीता इसलिए सोहन की खुशी का कोई ठिकाना न था।
- 17) 'मैं अकेला था और दस वयक्तियों ने मुझे पीटा।' वाक्य को मिश्र वाक्य में बदलिए।
- i) मैं अकेला था जिस कारण दस वयक्तियों ने मुझे पीटा।
- ii) जब मैं अकेला था तब मुझे दस वयक्तियों ने पीटा।
- iii) मैं अकेला था और दस वयक्तियों ने मुझे पीटा और लूट लिया।
- iv) क्योंकि मैं अकेला था इसलिए दस वयक्तियों ने मुझे पीटा और लूट लिया।
- 18) 'जैसे ही साँप दिखाई दिया वैसे ही लोग डर गए।' वाक्य को संयुक्त वाक्य में बदलिए ।
- i) साँप दिखाई दिया और लोग डर गए।
- ii) जैसे ही साँप को लोगों ने देखा वैसे ही लोग डर गए।
- iii) क्योंकि साँप दिखाई दिया था इसलिए लोग डर गए थे।
- iv) लोग डर गए क्योंकि उन्होंने साँप को देखा था।
- 19) जब वर्षा शुरू हुई तब अमित चला गया।' वाक्य को संयुक्त वाक्य में बदलिए -
- i) वर्षा शुरू हुई और अमित चल गया।
- ii) जैसे ही वर्षा शुरू हुई वैसे ही अमित चल गया।
- iii) वर्षा के शुरू होते ही तब अमित चल गया।
- iv) उपरोक्त कोई नहीं

प्रश्न 2) सूचना लेखन तैयार कीजिये:-

- 1) आप केंद्रीय विद्यालय जलवायु विहार दिल्ली की सांस्कृतिक इकाई के सचिव प्रत्युषप्रत्यूषा हैं। आपके / विद्यालय में स्वतंत्रता दिवस की पूर्व संध्या पर देशभक्ति पूर्ण कविताओं का पाठ किया जाना है जिसमें शहर के प्रसिद्ध कवि पधार रहे हैं। इसमें छात्रछात्राओं के अभिभावक भी सादर आमंत्रित हैं। इस संबंध - में एक सूचना आलेखन कीजिए।
- 2) गांधी जयंती के अवसर पर आपके विद्यालय ने स्वच्छता अभियान चलाने का निर्णय लिया है। इसके लिए सामने वाली बस्ती में साफ़जागरूकता -सफ़ाई करने के अलावा लोगों में स्वच्छता के प्रति जन-

फैलाए जाने का निश्चय किया गया है। इसकी सूचना देते हुए एक सूचना आलेख तैयार कीजिए। आप अपने विद्यालय के हेड ब्वाय जयंत

- 3) आप टैगोर अपार्टमेंट टैगोर गार्डन दिल्ली के आर०डब्ल्यू०ए० के सचिव हैं। गांधी जयंती के शुभ अवसर पर आरडब्ल्यू०ए० के सदस्यों ने डॉक्टरों की देखरेख में रक्तदान शिविर का आयोजन किया है। इच्छुक व्यक्ति रक्तदान हेतु सादर आमंत्रित हैं। इस संबंध में सूचना आलेख तैयार कीजिए।
- 4) आपके विद्यालय में पुस्तक प्रदर्शनी का आयोजन किया जा रहा है जिसमें हर तरह की पुस्तकों पर 25% छूट दी जाएगी। ये पुस्तकें विभिन्न विषयों से संबंधित होंगी। इस संबंध में एक सूचना आलेख तैयार कीजिए। आप दसवींबी के छात्र गौतम शर्मा हैं।

प्रश्न 3) लघु कथाएँ (नैतिक शिक्षा के साथ) प्रेरणादायक कहानियाँ (कोई चार)।

प्रश्न 4) नीचे दिए गये काव्यांश को पढ़कर उनसे संबंधित प्रश्नों का उत्तर दीजिये:-

- 1) रहिमन धागा प्रेम का, मत तोड़ो चटकाय।
टूटे से फिर ना मिले, मिले गाँठ परि जाय॥
रहिमन निज मन की बिथा, मन ही राखो गोय।
सुनि अठिलैहें लोग सब, बाँटि न लैहें कोय॥
- i) रहीम जी किसको तोड़ने को मना कर रहे हैं?
ii) रहीम जी अपने मन के दुख को प्रकट करने से क्यों मना कर रहे?
iii) प्रस्तुत पद्यांश में बिथा शब्द का क्या अर्थ है?
iv) प्रस्तुत पद्यांश में अठिलैहें शब्द का क्या अर्थ है?
- 2) एके साधे सब सधे, सब साधे सब जाय।
रहिमन मूलहिं सींचिबो, फूल फले अघाय।
धनि रहीम जल पंक को लघु जिय पिअत अघाय।
उदधि बड़ाई कौन है, जगत पिआसो जाय॥
- i) रहीम जी के अनुसार किसको सींचने से फूल और फल तृप्त हो जाते हैं?
ii) प्रस्तुत पद्यांश में रहीम जी जल पंक की तुलना किससे कर रहे हैं?
iii) प्रस्तुत पद्यांश में पंक शब्द का क्या अर्थ है?
iv) उदधि किसका पर्यायवाची है?
- 3) नाद रीझि तन देत मृग, नर धन हेत समेत।
ते रहीम पशु से अधिक, रीझेहु कछू न देत॥
बिगरी बात बने नहीं, लाख करो किन कोय।
रहिमन फाटे दूध को, मथे न माखन होय॥
- i) प्रस्तुत पद्यांश में रहीम जी मृग की तुलना किससे कर रहे हैं?
ii) प्रस्तुत पद्यांश में रहीम जी बात बिगड़ने की तुलना किससे कर रहे हैं?
iii) प्रस्तुत पद्यांश में रीझि शब्द का क्या अर्थ है?
iv) प्रस्तुत पद्यांश में "किन" शब्द का क्या अर्थ है?

Subject – Maths

- 1) Using only addition, add eight 8s to get the number 1,000.
- 2) In reply to an inquiry about the animals on his farm, the farmer says: "I only ever keep sheep, goats and horses. In fact, at the moment they are all sheep bar three, all goats bar four and all horses bar five." How many does he have of each animal?
- 3) One brother says of his younger brother: "Two years ago, I was three times as old as my brother was. In three years time, I will be twice as old as my brother." How old are they each now?
- 4) I add six to eleven, and get five. Why is this correct?
- 5) Old Granny Adams left half her money to her granddaughter and half that amount to her grandson. She left a sixth to her brother, and the remainder, \$1,000, to the dogs' home. How much did she leave altogether?
- 6) If a hen and a half lay an egg and a half in a day and a half, how many eggs will half a dozen hens lay in half a dozen days?
- 7) My twin lives at the reverse of my house number. The difference between our house numbers ends in two. What are the lowest possible numbers of our house numbers?
- 8) A small number of cards has been lost from a complete pack. If I deal among four people, three cards remain. If I deal among three people, two remain and if I deal among five people, two cards remain. How many cards are there?
- 9) I have a calculator that can display 10 digits. How many different 10-digit numbers can I type using just the 0–9 keys once each, and moving from one keypress to the next using the knight's move in chess? (In chess, the knight moves in an L shape: one square up and two across, two squares down and one across, two squares up and one across, and other like combinations.)
- 10) Mrs. Jones was very proud of her apple tree. One autumn, after harvesting her apples, she called her three sons together. "Here are 150 apples," she said. "I want you to take them to the market tomorrow and sell them for me." She gave Paul 15 apples, Nick 50 and Ben 85. "Your job," added Mrs. Jones, "is to sell the apples in such a way that each of you brings home the same amount of money." How do they do it?
- 11) The distance between A and B is 650 km. A person travelled from A to B at 60 km/hr and started at 9 am and another person travelled from B to A at 70 km/hr and started at same time. Then at what time they meet together?
- 12) If a person travelled at 56 km/hr instead of 48 km/hr, he would have travelled 40 km more in same time. Find the actual distance travelled by him?
- 13) The distance between A and B is 490 km. A person travelled from 'A' to 'B' in 40 km/hr and started at 9 am, after one hour another person travelled from 'B' to 'A' at 50 km/hr. Then what time they meet together?
- 14) A train crosses a man, who is running in the same direction of train at the speed of 2m/sec. in 10 seconds. The same train crosses a tunnel in 54 seconds. If speed of train is 72 km/h then what is the length of tunnel?
- 15) Raghav can beat Suresh by 100m in a race of 1 km and they run at speed of 10m/sec and 8 m/sec respectively. If Suresh increases his speed by 7m/sec then by how much time he will beat Raghav in the same race of 1km?
- 16) Speed of a train is 90 km/h. It crosses a platform and a pole in 36 seconds and 6 seconds respectively. Find the length of platform.
- 17) A man covers half of total distance with 12 km/h and another half distance with 24km/h. Find his average speed.
- 18) The sides of a triangle are in a ratio of 25:14:12 and its perimeter is 510 m. The greatest side of the triangle.
- 19) The area of a triangular sign board of sides 5 cm, 12 cm and 13 cm.

- 20) Two trains X and Y cross each other in 48 sec, when both are running in same direction. If length of train X is 160 m and speed of train X and train Y are 54 km/h and 72 km/h respectively then find the length of train Y.
- 21) In an examination, 80 % students passed in chemistry, 70 % in physics while 15 % of the total students failed in both the subjects. If 325 students passed in both the subjects, what was the total number of students that appeared in the examination?
- 22) Two students appeared in the exam. One of the students scored 6 marks more than the other and his marks were 52 % of the total sum of the marks of both the students. What were the marks scored by the weaker student?
- 23) A does a work in 10 days and B does the same work in 15 days. In how many days they together will do the same work?
- 24) A man can do a job in 15 days. His father takes 20 days and his son finishes it in 25 days. How long will they take to complete the job if they all work together?
- 25) 12 men complete a work in 9 days. After they have worked for 6 days, 6 more men join them. How many days will they take to complete the remaining work?
- 26) The average weight of 3 person P, Q, R is 84 kg. Another person who is S joins the group and now the present average of the group becomes 80 kg. If another person T, whose weight is 3 kg more than that of S, replaces P then the average weight of Q, R, S, and T becomes 78 kg. Find the weight of P.
- 27) Average marks obtained by Raju in 3 papers is 52 and in the fourth paper, he scored 60 marks. Find the new average of marks scored by Raju.
- 28) If we choose four numbers, the average of the first three will be 16 and that of last three is 15. If the last number is 18, the first number will be
- 29) In a throw of a coin, the probability of getting a head is?
- 30) Two cards are drawn at random from a pack of 52 cards. What is the probability that either both are black or both are queens?
- 31) A sum of Rs 12,500 amounts to Rs 15,500 in 4 years at the rate of simple interest. What is the rate of interest?
- 32) What is the present worth of Rs 132 due in 2 years at 5% simple interest per annum?
- 33) The largest four digit number exactly divisible by 88 is?
- 34) On dividing a number by 68, we get 269 as quotient and 0 as remainder. On dividing the same number by 67, what will be the remainder?
- 35) A salesman travels a distance of 50 km in 2 hours and 30 minutes. How much faster, in kilometres per hour, on an average, must he travel to make such a trip in $\frac{5}{6}$ hour less time?
- 36) A can complete a journey in 10 hours. He travels first half of the journey at the rate of 21 km/hr and second half at the rate of 24 km/hr. Find the total journey in km.
- 37) The distance between two cities A and B is 330 km. A train starts from A at 8 am and travels towards B at 60 km/hr. Another train starts from B at 9 am and travels towards A at 75 km/hr. At what time do they meet?
- 38) A and B walk around a circular track. They start at 8 am from the same point in the opposite directions. A and B walk at a speed of 2 rounds per hour and 3 rounds per hour respectively. How many times shall they cross each before 9:30 am?
- 39) Two cars P and Q start at the same time from A and B which are 120 km apart. If the two cars travel in opposite directions, they meet after one hour and if they travel in the same direction (from A towards B), then P meets Q after 6 hours. What is the speed of car P?
- 40) A train M leaves Meerut at 5 am and reaches Delhi at 9 am. Another train leaves Delhi at 7 am and reaches Meerut at 10:30 am. At what time do the two trains cross each other?
- 41) By selling 45 lemons for Rs 40, a man loses 20%. How many should he sell for Rs 24 to gain 20% in the transaction?
- 42) The marked price of a watch was Rs 720. A man bought the same for Rs. 550.80 after getting two successive discounts, the first being 10%. What was the second discount rate?

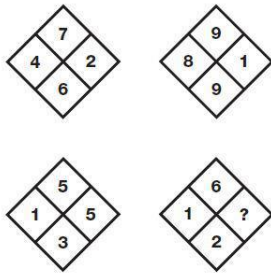
- 43)** A shopkeeper purchased 150 identical pieces of calculators at the rate of Rs 250 each. He spent an amount of Rs. 2500 on transport and packaging. He fixed the labeled price of each calculator at Rs 320. However, he decided to give a discount of 5% on the labeled price. What is the percentage profit earned by him?
- 44)** A shopkeeper sold an article offering a discount of 5% and earned a profit of 23.5%. What would have been the percentage of profit earned if no discount was offered?
- 45)** Find the volume and surface area of a cuboid 16m long, 14 m broad and 7 m high.
- 46)** Find the number of bricks, each measuring 24 cm×12 cm × 8 cm, required to construct a wall 24 m long, 8m high and 60 cm thick if 10% of the wall is filled with mortar?
- 47)** The rules for sudoku are simple. A 9×9 square must be filled in with numbers from 1-9 with no repeated numbers in each line, horizontally or vertically. To challenge you more, there are 3×3 squares marked out in the grid, and each of these squares can't have any repeat numbers either.

	3			1			6	
7	5			3			4	8
		6	9	8	4	3		
		3				8		
9	1	2				6	7	4
		4				5		
		1	6	7	5	2		
6	8			9			1	5
	9			4			3	

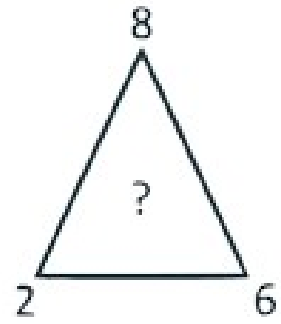
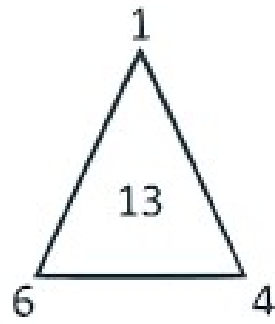
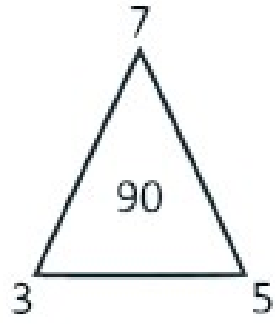
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			7			3	5	
					6			1
1			9	2				
2		5	4					
	6			8			2	
					2	5		7
				6	7			8
7			5					
	1	6			8			

- 49)** Find the missing number:-



50) Find the missing number:-



Subject – Science

Q 1) Read the passage carefully and answer the following questions:-

All living Organisms are made up of cells and these cells perform all the functions essential for the survival of the Organism eg. Respiration, digestion, excretion etc. In Unicellular organisms, a single cell carries out all these functions and in multicellular organisms different group of cells carry out different functions.

Cells were first discovered by Robert Hooke in 1665. He observed the cells in a cork slice with the help of a primitive microscope. Leeuwenhoek (1674), with the improved microscope, discovered the free living cells in pond water for the first time. It was Robert Brown in 1831 who discovered the nucleus in the cell. Purkinje in 1839 coined the term 'protoplasm' for the fluid substance of the cell.

- 1) Who discovered the cell?
 - a) Robert Hooke
 - b) Leeuwenhoek
 - c) Robert Brown
 - d) T. Schwann
- 2) Who discovered the nucleus in the cell?
 - a) Robert Hooke
 - b) Leeuwenhoek
 - c) Robert Brown
 - d) T. Schwann
- 3) Who coined the term 'Protoplasm'?
 - a) Robert Hooke
 - b) Leeuwenhoek
 - c) Robert Brown
 - d) Purkinje
- 4) What is protoplasm?
 - a) Unit of life
 - b) Cell organelle
 - c) Fluid substance of the cell.
 - d) Cytoplasm
- 5) Which of these statement is true about the cell?
 - a) All organism are made up of cell
 - b) Cell is the basic unit of life
 - c) Cell is responsible for different metabolic functions
 - d) All above

Q 2) Read the passage carefully and answer the following questions:-

The cell theory, that all the plants and animals are composed of cells and that the cell is the basic unit of life, was presented by two biologists, German zoologist Schleiden (1838) and British zoologist Schwann (1839). The cell theory was further expanded by Virchow (1855) by suggesting that all cells arise from pre-existing cells. With the discovery of the electron microscope in 1940, it was possible to observe and understand the complex structure of the cell and its various organelles.

- 1) Theodore Schwann was a _____
 - a) British zoologist
 - b) German zoologist
 - c) British botanist
 - d) German botanist
- 2) Matthias Schleiden was a _____
 - a) German zoologist
 - b) British zoologist
 - c) German botanist
 - d) British botanist
- 3) Which of these scientists formulated the cell theory?

- a) Schleiden and Schwann
 - b) Rudolf Virchow
 - c) Robert Koch
 - d) Antony Von Leeuwenhoek
- 4) Which scientist was the first to explain that new cells arise from pre-existing cells?
- a) Antony Von Leeuwenhoek
 - b) Matthias Schleiden
 - c) Rudolph Virchow
 - d) Theodore Schwann
- 5) Which of these scientists did not contribute to the cell theory?
- a) Robert Koch
 - b) Matthias Schleiden
 - c) Theodore Schwann
 - d) Rudolph Virchow

Q 3) Read the passage carefully and answer the following questions:-

Plasma membrane or Cell membrane is the outermost covering of the cell that separates the contents of the cell from its external environment. The plasma membrane is flexible and is made up of organic molecules called lipids and proteins. The flexibility of the cell membrane also enables the cell to engulf in food and other material from its external environment. Such processes are known as endocytosis. The plasma membrane allows or permits the entry and exit of some materials in and out of the cell. It also prevents movement of some other materials. The cell membrane, therefore, is called a selectively permeable membrane.

Some substances like carbon dioxide or oxygen can move across the cell membrane by a process called diffusion. There is spontaneous movement of a substance from a region of high concentration to a region where its concentration is low. Similar thing happens in cells – some substance like CO₂ (carbon dioxide is cellular waste and requires to be excreted out by the cell) accumulates in high concentrations inside the cell. In the cell's external environment, the concentration of CO₂ is low as compared to that inside the cell. As soon as there is a difference of concentration of CO₂ inside and outside a cell, CO₂ moves out of the cell, from a region of high concentration, to a region of low concentration outside the cell by the process of diffusion.

Water obeys the law of diffusion. The movement of water molecules through such a selectively permeable membrane is called osmosis. The movement of water across the plasma membrane is also affected by the amount of substance dissolved in water. Thus, osmosis is the net diffusion of water across a selectively permeable membrane toward a higher solute concentration.

- 1) The plasma membrane is made up of _____
- a) Proteins
 - b) Lipids
 - c) Proteins and Lipids (Lipoproteins)
 - d) none of above
- 2) Which of the following substance is known as cellular waste?
- a) Oxygen
 - b) Nitrogen
 - c) Carbon dioxide
 - d) None of above
- 3) The movement of a substance from the region of higher concentration to the region where its concentration is lower is called as _____
- a) Osmosis
 - b) Diffusion
 - c) Excretion of CO₂ (carbon dioxide)
 - d) All above
- 4) Why cell membrane is known as selectively permeable membrane?
- 5) What is mean by diffusion?

6) Define Osmosis.

Q 4) Read the passage carefully and answer the following questions:-

Plant cells, in addition to the plasma membrane, have another rigid outer covering called the cell wall. The cell wall lies outside the plasma membrane. The plant cell wall is mainly composed of cellulose. Cellulose is a complex substance and provides structural strength to plants. When a living plant cell loses water through osmosis there is shrinkage or contraction of the contents of the cell away from the cell wall. This phenomenon is known as plasmolysis.

1) Which of the following is the main constituent of cell wall?

- a) Proteins
- b) Lipids
- c) Lipoproteins
- d) Cellulose

2) Which of the following is outer most covering of the plant cell?

- a) Cell membrane
- b) Plasma membrane
- c) Cell wall
- d) Cellulose

3) Choose the correct set of statements from the following.

Statement 1 – Cell wall lies outside the plasma membrane.

Statement 2 – Cell wall is mainly composed of cellulose.

Statement 3 – Cellulose is a complex substance and provides structural strength to plants.

Statement 4 – Cell wall lies outside the plasma membrane.

- a) Statement 1 & 3
- b) Statement 1 & 2
- c) Statement 3 & 4
- d) All statement are correct

4) What is mean by plasmolysis?

5) What is the reason behind structural strength of plant cell?

Q 5) Read the passage carefully and answer the following questions:-

Every cell has a membrane around it to keep its own contents separate from the external environment. Large and complex cells, including cells from multicellular organisms, need a lot of chemical activities to support their complicated structure and function. To keep these activities of different kinds separate from each other, these cells use membrane-bound little structures within themselves. The cytoplasm is the jelly like fluid content inside the plasma membrane which contains many specialised cell organelles. Such as Endoplasmic Reticulum, Golgi apparatus, Lysosomes, Ribosomes, Nucleus, Chloroplast, Mitochondria and Plastids. Each of these organelles performs a specific function for the cell. Some of these organelles are visible only with an electron microscope. They are important because they carry out some very crucial functions in cells.

1) Identify the statement which is true for cells.

Statement 1 – Some cell organelles are visible only with an electron microscope.

Statement 2 – Cytoplasm is jelly like fluid present inside the cell.

Statement 3 – Cell organelles perform all the functions in cell.

Statement 4 – Every cell has a membrane around it to keep its own contents separate from the external environment.

- a) Statement 1 & 3
- b) Statement 2 & 4
- c) Statement 1 & 4
- d) All statement are true.

2) A suitable term for the various components of cells is _____

- a) tissue
- b) cell organelles
- c) chromosomes

- d) genes
- 3) The jelly-like fluid substance present in cells is called _____
 - a) Protoplasm
 - b) Chromosome
 - c) Chloroplast
 - d) Cytoplasm
- 4) What are cell organelles?
- 5) Enlist the any five cell organelles.

Q 6) Read the passage carefully and answer the following questions:-

The endoplasmic reticulum is a large network of membrane-bound tubes and sheets. It looks like long tubules or round or oblong bags (vesicles). It is discovered by Porter and Thompson. The ER membrane is similar in structure to the plasma membrane. There are two types of ER– rough endoplasmic reticulum (RER) and smooth endoplasmic reticulum (SER). RER looks rough under a microscope because it has particles called ribosomes attached to its surface. The ribosomes, which are present in all active cells, are the sites of protein manufacture. The manufactured proteins are then sent to various places in the cell depending on need, using the ER. The SER helps in the manufacture of fat molecules, or lipids, important for cell function. Some of these proteins and lipids help in building the cell membrane. This process is known as membrane biogenesis. Some other proteins and lipids function as enzymes and hormones. Although the ER varies greatly in appearance in different cells, it always forms a network system.

- 1) Who discovered endoplasmic reticulum?
 - a) Porter and Thompson
 - b) Robert Brown
 - c) Robert Hooke
 - d) Koshland
- 2) Which are the components of endoplasmic reticulum _____
 - a) Cisternae, tubules and vesicles.
 - b) Cisternae, chromatids and vacuoles
 - c) Both a and b
 - d) None of the above
- 3) Endoplasmic reticulum membrane which is associated with ribosomes is called _____
 - a) ER lumen
 - b) Smooth endoplasmic reticulum
 - c) Rough endoplasmic reticulum
 - d) Endosome
- 4) Enlist the types of Endoplasmic Reticulum.
- 5) Define membrane biogenesis?

Q 7) Read the passage carefully and answer the following questions:-

The Golgi apparatus, first described by Camilo Golgi, consists of a system of membrane-bound vesicles (flattened sacs) arranged approximately parallel to each other in stacks called cisterns. These membranes often have connections with the membranes of ER and therefore constitute another portion of a complex cellular membrane system. The material synthesised near the ER is packaged and dispatched to various targets inside and outside the cell through the Golgi apparatus. Its functions include the storage, modification and packaging of products in vesicles. In some cases, complex sugars may be made from simple sugars in the Golgi apparatus. The Golgi apparatus is also involved in the formation of lysosomes

- 1) Who discovered endoplasmic reticulum?
 - a) Porter and Thompson
 - b) Robert Brown
 - c) Robert Hooke
 - d) Camilo Golgi

- 2) A system of membrane-bound flattened sacs arranged approximately parallel to each other in stacks are called as _____
 - a) Cisterns
 - b) Vesicles
 - c) Golgi complex
 - d) Vacuoles
- 3) Membrane bound flattened sacs is termed as _____
 - a) Cisterns
 - b) Vesicles
 - c) Golgi complex
 - d) Vacuoles
- 4) Enlist the function of Golgi apparatus.
- 5) Name the cell organelles which is involved in the formation of lysosomes?

Q 8) Read the passage carefully and answer the following questions:-

Mitochondrial disease: The DNA within mitochondria is more susceptible to damage than the rest of the genome. This is because free radicals, which can cause damage to DNA, are produced during ATP synthesis. Also, mitochondria lack the same protective mechanisms found in the nucleus of the cell.

However, the majority of mitochondrial diseases are due to mutations in nuclear DNA that affect products that end up in the mitochondria.. As a general rule, cells that need the largest amounts of energy, such as heart muscle cells and nerves, are affected the most by faulty mitochondria.

Diseases that generate different symptoms but are due to the same mutation are referred to as genocopies. Conversely, diseases that have the same symptoms but are caused by mutations in different genes are called phenocopies. Leigh syndrome, which can be caused by several different mutations. Although symptoms of a mitochondrial disease vary greatly, they might include:

Over recent years, researchers have investigated a link between mitochondria dysfunction and aging. There are a number of theories surrounding aging, and the mitochondrial free radical theory of aging has become popular over the last decade or so. The theory is that reactive oxygen species (ROS) are produced in mitochondria, as a by-product of energy production. These highly charged particles damage DNA, fats, and proteins. Because of the damage caused by ROS, the functional parts of mitochondria are damaged. When the mitochondria can no longer function so well, more ROS are produced, worsening the damage further. Although correlations between mitochondrial activity and aging have been found, not all scientists have reached the same conclusions. Their exact role in the aging process is still unknown.

- 1) Which is the most common phenomenon of mitochondrial diseases?
 - a) Due to Damage of Mitochondrial membrane
 - b) Due to Mutation in Mitochondrial DNA
 - c) Due to Mutation in Nuclear DNA
 - d) Lack of Oxygen
- 2) How do free radicals affect mitochondria?
 - a) Make More Radicals
 - b) Causes damage to DNA
 - c) Dehydrate the cell
 - d) Does not harm at all
- 3) Name the cell(s) which uses maximum amount of energy?
 - a) Heart muscle Cells
 - b) Nerve cell
 - c) Epithelial cells
 - d) Both A and B
- 4) Leigh syndrome is an example of genocopy or phenocopy.
 - a) Phenocopy
 - b) Genocopy

- c) Both A and B
 - d) Genotype
- 5) What is the difference between nuclear DNA and Mitochondrial DNA?
- a) Mitochondrial DNA is Linear
 - b) Nuclear DNA is Circular
 - c) Mitochondrial DNA is Circular
 - d) No Difference

Q 9) Read the passage carefully and answer the following questions:-

Neurons: Neuron is a nerve cell that is the basic building block of the nervous system. Neurons are similar to other cells in the human body in a number of ways, but there is one key difference between neurons and other cells. Neurons are specialized to transmit information throughout the body. These highly specialized nerve cells are responsible for communicating information in both chemical and electrical forms.

There are three basic parts of a neuron: the dendrites, the cell body, and the axon. However, all neurons vary somewhat in size, shape, and characteristics depending on the function and role of the neuron. Some neurons have few dendritic branches, while others are highly branched in order to receive a great deal of information. Some neurons have short axons, while others can be quite long. The longest axon in the human body extends from the bottom of the spine to the big toe and averages a length of approximately three feet!

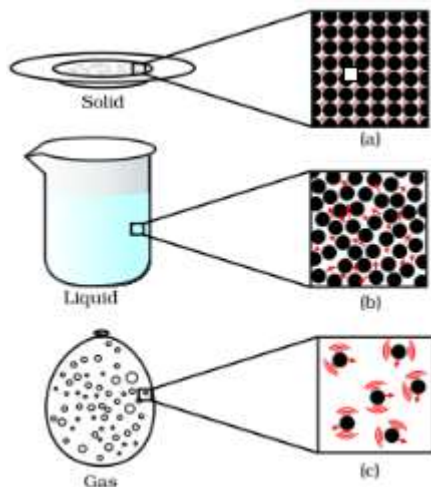
Action Potentials How do neurons transmit and receive information? In order for neurons to communicate, they need to transmit information both within the neuron and from one neuron to the next. This process utilizes both electrical signals as well as chemical messengers. The dendrites of neurons receive information from sensory receptors or other neurons. This information is then passed down to the cell body and on to the axon. Once the information has arrived at the axon, it travels down the length of the axon in the form of an electrical signal known as an action potential.

- 1) In what ways other body cells are similar to neurons?
 - a) Both have dendrites
 - b) Both have nucleus
 - c) Both transmit Impulse
 - d) Both are Dead
- 2) Neuron transmit information in form of
 - a) Electrical Signals
 - b) Chemical signals
 - c) Both A and B
 - d) None of the Above
- 3) In which part of neuron information transmits in the form of electrical signals?
 - a) Dendrite
 - b) Cyton
 - c) Axon
 - d) Axon Terminal
- 4) Which part of a neuron receives messages from the cell?
 - a) dendrites
 - b) soma
 - c) axon
 - d) neuron cell
- 5) Longest Cell of Body is
 - a) Heart cell
 - b) Nerve Cell
 - c) White Blood Cell
 - d) Bone Cell

Chemistry

Q 10) Read the passage carefully and answer the following questions:-

Gases are highly compressible as compared to solids and liquids. The liquefied petroleum gas (LPG) cylinder that we get in our home for cooking or the oxygen supplied to hospitals in cylinders is compressed gas. Compressed natural gas (CNG) is used as fuel these days in vehicles. The liquid takes up the shape of the container in which they are kept. Liquids flow and change shape, so they are not rigid but can be called fluid. Solids and liquids can diffuse into liquids. The aquatic animals can breathe underwater. The rate of diffusion of liquids is greater than solid.



- 1) Why Compressed natural gas (CNG) is used as fuel these days in vehicles?
 - a) due to its high compressibility
 - b) large volumes of a gas can be compressed into a small cylinder
 - c) transported easily
 - d) all of these
- 2) Liquids have no fixed _____ but have a fixed _____ .
 - a) shape, volume
 - b) volume, shape
 - c) shape, size
 - d) size, shape
- 3) The aquatic animals can breathe underwater due to
 - a) the presence of dissolved carbon dioxide in water
 - b) the presence of dissolved oxygen in the water
 - c) the presence of dissolved Nitrogen in the water
 - d) all of these
- 4) The rate of diffusion of liquids is greater than solid due to
 - a) liquid particles move freely
 - b) liquid have greater space between each other
 - c) both (a) and (b)
 - d) none of these
- 5) The property of flow is unique to fluids. Which one of the following statements is correct?
 - a) Only gases behave like fluids
 - b) Gases and solids behave like fluids
 - c) Gases and liquids behave like fluids
 - d) Only liquids are fluids

Q 11) Read the passage carefully and answer the following questions:-

In an experimental activity, crushed ice was taken in a beaker. A thermometer is fitted in such a way that its bulb was thoroughly surrounded by ice. The beaker is now slowly heated and temperature was regularly noted. Temperature rises gradually as the heating is continued and becomes constant when ice starts changing into liquid.

- 1) What name is associated with conversion of ice into water?
 - a) Evaporation
 - b) Sublimation
 - c) Freezing
 - d) Fusion of Solid
- 2) What specific name is given to the constant temperature?
 - a) latent heat of fusion
 - b) Boiling Point
 - c) Melting Point
 - d) Condensation point
- 3) The heat added to the system at constant temperature is called
 - a) specific heat
 - b) latent heat
 - c) residual heat
 - d) none of the above
- 4) Where does the heat energy go when the temperature does not rise?
 - a) It makes the molecular motion of the liquid faster
 - b) It raises the temperature of the beaker only.
 - c) It is utilised for bringing out the complete change of state
 - d) It slows down the molecular motion

Q 12) Read the passage carefully and answer the following questions:-

A hot air balloon has three major parts: the basket, the burner, and the envelope. The basket is where passengers ride. The basket is usually made of wicker. This ensures that it will be comfortable and add little extra weight. The burner is positioned above the passenger's heads. The envelope is the colourful fabric balloon that holds the hot air. The pilot can control the up-and-down movements of the hot air balloon.

- 1) What keeps a hot air balloon flying?
- 2) How the balloon's pilot can control the balloon's altitude?
- 3) Using the passage as a guide, it can be inferred that which of the following statements is not true?
 - a) Air goes up and out the top of a chimney when you light a fire.
 - b) Cool air collects about the ceiling when you open a refrigerator.
 - c) Smoke from a candle rises after you blow out the flame.
 - d) Cold air coming from an air conditioning vent settles about the floor
- 4) According to the author, wicker is I. Comfortable II. light weight III. Durable
 - a) I only
 - b) I and II only
 - c) II and III only
 - d) I , II and III

Q 13) Read the passage carefully and answer the following questions:-

Temperature can be expressed in three important scales. These are Celsius scale ($^{\circ}\text{C}$), Fahrenheit scale ($^{\circ}\text{F}$) and Kelvin scale (K). Kelvin scale is often used to express temperature in scientific data. Temperature in any one scale can be easily converted into another scale by using the following equations. If x is the temperature on Celsius scale , then $x^{\circ}\text{C} = (x+273) \text{ K}$ and $x^{\circ}\text{C} = [(9/5)x + 32]^{\circ}\text{F}$

- 1) What is the boiling point of water in Kelvin scale?
- 2) If $x^{\circ}\text{C} = x^{\circ}\text{F}$, what is the value of x?
- 3) Freezing point of water is
 - a) 0 K
 - b) 0°F
 - c) 273 K
 - d) 273°F

- 4) If temperature of certain oil is 65°C , what is the corresponding temperature on Kelvin scale?
- 330 K
 - 155 K
 - 298 K
 - 338 K

Q 14) Read the passage carefully and answer the following questions:-

An ice cube weighing 100 g and having volume V is taken out of the freezer at -10°C and placed in a glass beaker. The beaker is slowly heated till the temperature becomes 25°C .

- If we measure the temperature of the content of beaker and plot it in a function of time, how will the graph appear?
- At what stage, the temperature will become constant for some time although heating is continued?
- The heat absorbed at the constant temperature during the process is called
 - Heat capacity
 - melting point
 - heat of absorption
 - latent heat of fusion
- Once the ice cubes completely get converted into water, the volume of water will be
 - equal to V
 - more than V
 - equal to $2V$
 - less than V

Q 15) Read the passage carefully and answer the following questions:-

100 ml of water was placed in four vessels A, B, C, D. Vessel C, A and D are of same size, B is smaller. Vessel C is covered and C and D are placed under the fan as shown A B C D Placed under fan

- In how many beakers, water will escape into atmosphere as vapours?
- What name is given to the process of escaping of water from liquid to vapour state?
- After one hour from the beginning of the experiment the water level will fall to the maximum in which beaker?
 - C
 - A
 - D
 - Both in A and D
- What happens in beaker C?

Q 16) Read the passage carefully and answer the following questions:-

In certain investigatory project 150 ml of water is taken in each of the four beakers A, B, C and D. Beaker A and B are maintained at temperature 25°C while C and D are maintained at temperature 65°C . Four crystals of copper sulphate of approximately same mass (say 2g) are taken and two of them are ground into powder form. Now, crystals are added in beaker A and C while powdered form of the salt are added in beaker B and D respectively.

- In which beaker the intermixing will be the quickest?
 - C
 - D
 - A
 - B
- Rate of intermixing will be:
 - Same in A and C
 - Same in A and B
 - Quicker in B than in A
 - Slower in C as compared to that in A

- 3) Colour of solution after intermixing is:
- Greenish
 - Bluish
 - Pinkish
 - Violet
- 4) Phenomenon responsible for intermixing is called
- Diffusion of solid into liquid
 - Diffusion of liquid into solid
 - Sedimentation
 - Freezing
- 5) Which of the following evidence is not provided by the experimental activity?
- Particles of matter are in a state of motion.
 - Particle motion increases with rise in temperature
 - Particles of matter are stationary
 - There are empty spaces between the molecules.

Q 17) Read the passage carefully and answer the following questions:-

Suspension is the heterogeneous mixture of two or more substances. In suspension, particles are suspended throughout in bulk and can be seen by naked eyes. In suspensions, particles of solute do not dissolve rather are suspended. Particles of suspension are large enough to scatter rays of light and path of ray is visible through a suspension. The examples of suspension are mixture of chalk and water, muddy water, mixture of flour and water, milk of magnesia etc.

- Which of the following statement is not true about suspensions?
 - Suspensions are heterogeneous mixture
 - Suspensions show Tyndall effect
 - Suspension is stable.
 - The size of particles of suspension is greater than 1000 nm
- Suspensions can be separated by
 - Filtration
 - Centrifugation
 - Distillation
 - All the above
- Suspension is able to scatter the rays of light because
 - Solute particles are large
 - Solute particles are insoluble
 - Solute particles settle at the bottom
 - None of the above
- Which of the following is not an example of suspension?
 - Mixture of Sulphur and iron fillings
 - Mixture of sand and water
 - Mixture of dust particles and air
 - Mixture of ink and water
- The particles of suspension settle down due to
 - Impurity
 - Gravity
 - Filtration
 - All the above

Q 18) Read the passage carefully and answer the following questions:-

When two or more elements chemically combined in a fixed ratio by mass, the obtained product is known as a compound. Compounds can be defined as a substance consisting of two or more different types of elements in a fixed ratio of its constituent atoms. When the elements combine, some individual property of the elements are lost and the newly formed compound has new properties. The compounds can be classified into two types molecular compounds and salts. In

molecular compounds the atoms find each other through covalent bonds whereas ionic compounds are held together with ionic bonds.

- 1) Which of the following is not a compound?
 - a) Potassium permanganate
 - b) Sand
 - c) Water
 - d) Air
- 2) Which of the following is not true about the compounds?
 - a) Compounds are of two types
 - b) Compounds have either covalent bonds or ionic bonds
 - c) Compounds have same properties as their constituent elements
 - d) The atoms are present in fixed ratio in a compound
- 3) Which of the following is not a pure substance?
 - a) Elements
 - b) Compounds
 - c) Mixtures
 - d) All the above substances are pure
- 4) Pick the odd one out
 - a) Sodium
 - b) Silver
 - c) Silicon
 - d) Sugar
- 5) The compounds can be made by _____.
 - a) Physical process only
 - b) Chemical process only
 - c) Both physical and chemical process
 - d) Neither physical nor chemical process

Q 19) Read the passage carefully and answer the following questions:-

A solution which can dissolve more of the solute at a given temperature is called unsaturated solution. However, a solution which cannot dissolve any more of the solute is called saturated solution. The amount of solute that can dissolve in 100 g of the solvent at a given temperature is called solubility of the substance.

- 1) A 30 % solution of X at 298 K is marked as saturated solution of X. What is the solubility of X at 298 K?
- 2) What name is given to the solution which contains more solute than that required to prepare saturated solution at that temperature?
- 3) Which of the following method is not suitable for making an unsaturated solution a saturated one?
 - a) The solution is made to reach saturation point.
 - b) By lowering the temperature of the solution
 - c) By adding more solvent
 - d) By adding more solute

Q 20) Read the passage carefully and answer the following questions:-

A child wanted to separate the mixture of dyes constituting a sample of ink. He marked a line by the ink on the filter paper and placed the filter paper in a glass containing water as shown in figure. The filter paper was removed when the water moved near the top of the filter paper.

- 1) Identify the technique used by the child.
 - a) Sedimentation
 - b) Filtration
 - c) Chromatography
 - d) Distillation
- 2) What would you expect to see, if the ink contains three different coloured components?

- a) We will not see any band on the filter paper.
 - b) We would see three bands on the filter paper at various lengths.
 - c) We would see infinite bands on the filter paper. We would see single band on the filter paper.
- 3) Give one application where you can use this technique.
- a) To separate salt from sand
 - b) To separate wheat from husk
 - c) To separate oil from water
 - d) To separate drugs from blood.
- 4) For the separation of what kind of substances is the above process used ?
- a) For the separation of insoluble substances
 - b) For the separation of single solute that dissolves in single solvent.
 - c) For the separation of those solutes that dissolve in the same solvent.
 - d) For the separation of those solutes that dissolve in the different solvents.
- 5) What is chromatography ?
- a) It is an agricultural method to separate grains
 - b) A method to separate magnetic impurities from non-magnetic impurities
 - c) The process of separating the suspended particles of an insoluble substance
 - d) Method of separating and identifying various components in a mixture, which are present in small trace quantities.

Q 21) Read the passage carefully and answer the following questions:-

A Chemistry teacher explained the different types of separation of mixtures with the help of given adjoined chart. Now, in a practical test, students were provided with give samples and they were asked to separate the samples applying suitable separation methods. Now the students have to select the correct methods of separation.

- 1) Fine mud particles suspended in water.
 - a) Winnowing
 - b) Sedimentation and Decantation
 - c) Using a magnet
 - d) Chlorination
- 2) Oil from water.
 - a) Sedimentation and Decantation
 - b) Separating funnel
 - c) Filtration
 - d) Winnowing
- 3) Sodium chloride from its solution in water.
 - a) Filtration
 - b) Separating funnel
 - c) Sedimentation and Decantation
 - d) Evaporation
- 4) Camphor from salt.
 - a) Filtration
 - b) Separating funnel
 - c) Sedimentation
 - d) Sublimation
- 5) Cream from milk
 - a) Separating funnel
 - b) Sedimentation
 - c) Filtration
 - d) Centrifugation

Q 22) Read the passage carefully and answer the following questions:-

In the given below activity, on heating the solution, water evaporates, and we get back the ink dye in the watch glass. The different substance has a different boiling point. We use this property to

separate the components of the mixture. Here, the boiling point of ink is much higher than that of water. On heating the ink solution, water evaporates while ink dye remains in the china dish.

- 1) Name the process shown in the diagram.
 - a) Boiling
 - b) Filtration
 - c) Crystallisation
 - d) Distillation
- 2) Which type of substance can be separated by this method ?
 - a) Any solvent from its non-volatile solute.
 - b) The volatile solvent from its non-volatile solute.
 - c) The non-volatile solvent from its non-volatile solute.
 - d) The volatile solvent from its volatile solute.
- 3) What can we interpret about the nature of ink ?
 - a) We cannot separate components of ink
 - b) Ink is pure substance
 - c) Ink is not a mixture
 - d) Ink is a mixture of dyes in water.
- 4) Name the component which gets evaporated.
 - a) Heating leads to the evaporation of water.
 - b) Heating leads to the evaporation of dyes.
 - c) Heating leads to the filtration of water.
 - d) Heating leads to the distillation of dyes.
- 5) Define the process shown in the diagram
 - a) It is the process of conversion of a liquid into its vapours.
 - b) It is a process of separating insoluble component by filtering the solution
 - c) It is a process that separates a pure solid in the form of its crystals
 - d) It is a technique to separate two miscible liquids

Q 23) Read the passage carefully and answer the following questions:-

We take some ammonium chloride in a china dish and place the china dish on a tripod stand (see Figure). The china dish is covered with an inverted glass funnel. A loose cotton plug is put in the upper, open end of the funnel to prevent the ammonium chloride vapours from escaping into the atmosphere. The china dish is heated by using a burner. On heating, ammonium chloride changes into white vapours. These vapours rise up and get converted into solid ammonium chloride on coming in contact with the cold, inner walls of the funnel (see Figure). In this way, ammonium chloride collects on the inner sides of the funnel in the form of a sublimate and can be removed.

- 1) What name is given to the phenomenon which takes place?
 - a) condensation
 - b) evaporation
 - c) sublimation
 - d) vaporization
- 2) One of the following does not undergo sublimation. This one is :
 - a) iodine
 - b) sodium chloride
 - c) ammonium chloride
 - d) camphor
- 3) The conversion of a solid into vapours without passing through the liquid state is called
 - a) vaporisation
 - b) sublimation
 - c) fusion
 - d) freezing
- 4) When heat is constantly supplied by a burner to boiling water, then the temperature of water during vaporisation :

- a) rises very slowly
 - b) first rises and then becomes constant
 - c) rises rapidly until steam is produced
 - d) does not rise at all
- 5) During summer days, water kept in an earthen pot (pitcher) becomes cool because of the phenomenon of :
- a) diffusion
 - b) osmosis
 - c) transpiration
 - d) evaporation

Project Work:–

Use your creativity and Prepare a model (Cover your models in plastic sheets and make them hangable with your names on it, so that it can be placed on wall.)

Roll No. 1 to 4: Plant Cell

Roll No. 5 to 8: Animal cell

Roll No. 9 to 12: Mitochondria

Roll No. 13 to 16: Plastid

Roll No. 17 to 22: Nucleus/DNA