

**ENGLISH**

**Class 9: C**

**Chapter 1: The Fun They Had**

**By Sir Dabin**

**Question 1:**

**Answer these questions in a few words or a couple of sentences each.**

1. How old are Margie and Tommy?

# Margie is eleven while Tommy is thirteen years old.

2. What did Margie write in her diary?

# Margie wrote in her diary, "Today Tommy found a real book!"

3. Had Margie ever seen a book before?

#No, Margie had never seen a book before.

4. What things about the book did she find strange?

# Margie found it strange that the words printed on a book stood still instead of moving the way they did on a screen. She also found it odd that the words on a page always remained the same as the first time they were read. Besides, the idea that someone would write a book about schools was itself strange for Margie.

5. What do you think a telebook is?

# A telebook is a book that can be read on screen. Words move on the screen for the readers to read.

6. Where was Margie's school? Did she have any classmates?

# Margie's school was in her home itself, right next to her bedroom.

No, she did not have any classmates.

7. What subjects did Margie and Tommy learn?

# Margie and Tommy learnt geography, history and arithmetic.

**Question 2:**

**Answer the following with reference to the story.**

1. "I wouldn't throw *it* away."

- (i) Who says these words?
- (ii) What does 'it' refer to?
- (iii) What is it being compared with by the speaker?

**# 1.**

- (i) Tommy says these words.
- (ii) 'It' refers to the television screen.
- (iii) Tommy is comparing the television screen with printed books of the earlier times.

2. "Sure *they* had a teacher, but it wasn't a *regular* teacher. It was a man."

- (i) Who does 'they' refer to?
- (ii) What does 'regular' mean here?
- (iii) What is it contrasted with?

**# 2.**

- (i) The word 'they' refers to the students who studied in the old kind of schools, centuries before the time the story is set in.
- (ii) Here, the term 'regular' refers to the mechanical teachers that Tommy and Margie have.
- (iii) The mechanical teacher is contrasted with the teacher of the earlier times, who was a man.

**Question 3:**

**Answer each of these questions in a short paragraph (about 30 words).**

1. What kind of teachers did Margie and Tommy have?

# Margie and Tommy had mechanical teachers with large black screens that flashed lessons and questions. These teachers had slots where the students had to put their homework and test papers.

2. Why did Margie's mother send for the County Inspector?

# Margie had been consistently failing to perform well in the geography tests given by her mechanical teacher. In order to find out the reason behind this, her mother sent for the County Inspector

3. What did he do?

# The County Inspector took apart the teacher and after examining it, assembled it again. He slowed up the geography sector of the teacher because it was 'geared up a little too quick' for an average ten-year old.

4. Why was Margie doing badly in geography? What did the Country Inspector do to help her?

# Margie was doing badly in geography because the geography sector of the mechanical teacher had been adjusted at a higher level.

In order to help her, the County Inspector slowed down this sector to an average ten-year level.

5. What had once happened to Tommy's teacher?

# Once, Tommy's teacher was taken away for nearly a month because its history sector had blanked out completely.

6. Did Margie have regular days and hours for school? If so, why?

# Yes, Margie had regular days and hours for school. The mechanical teacher always turned on at the same time every day except Saturdays and Sundays. This was because her mother believed that learning at regular hours helped little girls learn better.

7. How does Tommy describe the old kind of school?

# Tommy says that the old kind of school existed 'centuries ago'. They had a teacher, who was a man. This teacher taught in a special building, where all the kids assembled and learned the same things according to their respective ages.

8. How does he describe the old kind of teachers?

# Tommy says that the teacher of the old kind were men, who taught the students inside a special building. The teachers taught the children in groups and gave them homework and asked them questions.

**Question 4:**

**Answer each of these questions in two or three paragraphs (100 – 150 words)**

1. What are the main features of the mechanical teachers and the schoolrooms that Margie and Tommy have in the story?

# Margie and Tommy had mechanical teachers. These teachers were basically large black screens on which the lessons were shown and questions were asked. These teachers were adjusted according to the age and potential of the student concerned. They had a slot in which the students had to put their homework and test papers. The mechanical teacher immediately calculated the marks for the answers written in punch codes by the students. However, these teachers were prone to technical and mechanical failure and troubles.

Their schools were in their homes itself. In fact, Margie's school was right next to her bedroom. Students did not have classmates. They had regular days and hours for school. The mechanical teacher always turned on at the same time every day except Saturdays and Sundays.

2. Why did Margie hate school? Why did she think the old kind of school must have been fun?

# Margie hated school because it was not fun. She hated the large black screen and the way she had to insert the homework and test papers in the slot on the mechanical teacher. She disliked fact that she had to write her answers in a punch code. Besides, her hatred for school was amplified by her failure to fare well in the geography tests given by her mechanical teacher.

Margie imagined the old kind of school with kids from the entire neighbourhood coming together, laughing and shouting in the schoolyard. She imagined that they would sit together

in the classroom and go home together at the end of the day. They would learn the same things and could help one another with the homework. Also, the teachers were people, making the learning process more interactive. All these aspects made her believe that the old kind of school must have been fun.

3. Do you agree with Margie that schools today are more fun than the school in the story? Give reasons for your answer.

# Yes, I agree that schools today are more fun than the school in the story. Studying and answering questions seems to be a boring idea without the presence of classmates. Writing homework in punch codes and that too without anybody's help would be draining. Children develop a better understanding about each other and their surroundings when they go to a school and interact with others.

Human teachers are people are more understanding and accommodating than mechanical ones that are programmed to teach in a specific way. The excitement in waiting for the marks scored in exams is greater when one is sitting in a classroom with fellow students. It does not have the same effect when marks are calculated immediately after a test has been taken. Therefore, schools today are more fun than the school in the story as they are more interactive and promote a healthier way of learning.

## Unit 1: Communication Skills – I

## Assignment Solutions

## Multiple-Choice Questions (MCQs)

- Which of the following example is not a communication skill?
  - Laughing
  - Swimming
  - Asking question
  - Watching television
- If you don't agree with someone, what would you say?
  - You are wrong
  - I don't agree.
  - Stop talking rubbish.
  - None of these
- ..... refers to a process that puts thoughts in a framework of symbols or words.
  - Encoding
  - Receiver
  - Decoding
  - Feedback
- Post office, Internet, and radio are examples of .....
  - Sender
  - Message
  - Communication Channel
  - Feedback
- ..... implies that communication should contain all the information necessary to get the desirable response from the sender.
  - Clarity
  - Consideration
  - Conciseness
  - Completeness

## ANSWERS

1. b.      2. b.      3. a.      4. c.      5. d.

## Very Short Answer Questions

- What is the full form of SWOT?
 

Ans. The term SWOT stands for:

  - S- Strengths
  - W- Weaknesses
  - O- Opportunities
  - T- Threats.

- Define formal communication.

Ans. The communication held in a formal format or pattern that is acceptable in an organization or social setup is known as the formal communication.

- What is informal communication?

Ans. The communication carried out in a free and uninhibited manner between two agents, parties, or people who share a good rapport with each other is known as the informal communication.

- What is upward communication?

Ans. The communication that flows from a lower level to upper level of the organizational hierarchy is referred to as the upward communication.

- Define downward communication.

Ans. The communication that flows from upward to downward level of organizational hierarchy is referred to as the downward communication.

## Short Answer Questions-I

- Explain the importance of communication.

Ans. Good communication skills are prerequisites to one's personal, academic, and professional success. In an organizational context, communication involves conveying orders, instructions, and information to achieve the desired level of employees' performance.

- What is the role of communication in business?

Ans. Communication is an important tool to exchange ideas. In business, communication is used to exchange ideas between clients and vendors, so that they reach to a final conclusion. Communication also helps to strengthen the relationship among various professionals in the business domain by exchanging their experiences and opinions.

- Define an adverb.

Ans. An adverb is a word that modifies the meaning of a verb, an adjective, or another adverb. For example, in the sentence "You run quickly.", the word quickly is used to modify the verb, run, quickly will be an adverb.

## Short Answer Questions-II

- Explain different forms of non-verbal communication.

Ans. Non-verbal communication can be broadly categorized in two categories:

- **Written Communication:** Involves the use of emails, articles, reports, and memos. Written documents

need to be edited a number of times before they are conveyed to the intended individual whether within or outside the organization. Written communication may also be used for the purpose of informal communication, for example, mobile Short Message Service (SMS).

- **Visual Communication:** Involves the visual display of information, such as photos, formats, signs, codes, symbols, and designs. For example, television, DVDs, CDs, and other audiovisual aids of communication represent visual communication

## 2. What are the various objectives of communication?

Ans. The following are the objectives of communication:

- **Clarity:** Requires the use of a simple language for communication
- **Completeness:** Implies that communication should contain all the information necessary to get the desirable response from the sender
- **Conciseness:** Implies that the message should be free from superfluous details, which helps in saving the time of both, the sender and the receiver
- **Consideration:** Requires preparing the message keeping the recipient in mind
- **Correctness:** Implies that the message should state accurate facts and figures
- **Concreteness:** Implies that the message should be specific and to the point
- **Courtesy:** Constitutes one of the important elements of an effective business communication

## 3. What are the various types of communication?

Ans. The various types of communication can be explained as follows:

- On the basis of channel used:
  - Formal communication
  - Informal communication
- On the basis of direction:
  - Upward communication
  - Downward communication
  - Horizontal communication
  - Diagonal communication
- On the basis of means used:
  - Verbal communication
  - Non-verbal communication
  - Written communication
  - Visual communication

## 4. Explain different kinds of nouns with examples.

Ans. The different types of nouns are briefly explained as follows:

- **Common noun**  
For example, in the sentence, “The cat is sleeping on the floor”, the word ‘cat’ is a common noun.

- **Proper noun**

For example, in the sentence, “Mrinalini has gone to Kashmir”, the words ‘Mrinalini’ and ‘Kashmir’ are proper nouns.

- **Collective noun**

For example, in the sentence, “The committee has reached its decision”, the word ‘committee’ is a collective noun.

- **Abstract noun**

For example, in the sentence, “Beauty lies in the eyes of the beholder”, the word ‘beauty’ is an abstract noun.

- **Countable noun**

For example, in the sentence, “The oak tree lost three branches in the hurricane”, the words ‘oak tree’ and ‘branches’ are countable nouns.

- **Uncountable noun**

For example, in the sentence, “Oxygen is essential to human life”, the word ‘oxygen’ is an uncountable noun.

## 5. Write a short note on verb and its types with examples.

Ans. A verb is a word that tells about the action or affirms something about a person or a thing. It is the most important part of a sentence. Consider the following examples:

- Sachin plays football.
- He eats mango.

In the preceding examples, the words ‘plays’ and ‘eats’ are verbs as they show the action. Note that a verb has an important relation with time. It is through the verb used in a sentence that we can understand something has already happened, is happening now, or will happen in future.

## 6. Explain adverb with some examples

Ans. An adverb is a word that modifies the meaning of a verb, an adjective, or another adverb.

Consider the following examples:

- You run quickly.
- This is a very sweet apple.
- Ramesh reads quite clearly.

In the preceding examples, the words quickly, very, and quite are used to modify the verb, adjective, and adverb, respectively, so they are called adverbs.

## 7. What is a pronoun? Explain with example.

Ans. A pronoun is a word that can replace a noun or another pronoun. In other words, a pronoun is a word used instead of a noun. It helps in avoiding the repeated use of nouns. Consider the following examples:

- Tell him to come back soon.
- They are waiting for the train.

In the preceding sentences, ‘him’ and ‘they’ are pronouns.

8. Briefly explain interjection with examples.

Ans. An interjection is a word that is used to express sudden feeling or emotion. It is not grammatically related with any other words in the sentence. An interjection is usually followed by an exclamatory mark. Some common examples of interjections are Hi! Bravo! Cheers! Hurrah!, etc.

### Long Answer Questions

1. Describe the role of different elements of a communication cycle.

Ans. The following are the different elements of a communication cycle:

- **Sender:** Refers to a party or agent who sends the intended message to another party or agent. Sender is also referred to as a source in the process of communication.
- **Ideas or Message:** Refers to the subject matter that the sender wishes to convey to the receiver. It may be an opinion, attitude, feeling, view, order, or suggestion.
- **Encoding:** Refers to a process that puts the thoughts in a framework of symbols or words.
- **Communication Channel:** Refers to the channel responsible for the delivery of the message. For example post office, Internet, and radio.
- **Receiver:** Refers to a party or agent who receives the sent message. The receiver is also called the audience or destination.
- **Decoding:** Refers to the process of deciphering the received message and understanding its intended meaning.
- **Feedback:** Refers to the response of the receiver to the message of the sender. This part of the communication cycle establishes a two-way communication between the receiver and the sender.

2. Explain an adjective and its different kinds with examples.

Ans. An adjective is a word used with a noun to describe the quality, quantity, characteristics, and nature of the noun that it qualifies. Adjectives can be further divided into different classes. The following are the different kinds of adjectives and their examples:

- Adjectives of quality. E.g. Ram is an honest man; Delhi is a large city.
- Adjectives of number. E.g. Ravi has two sisters; A hand has five fingers.
- Demonstrative adjectives. E.g. that boy is lazy; These apples are sweet.
- Interrogative adjectives. E.g. What kind of man is he?; Whose pen is this?

3. Explain the use of preposition with examples.

Ans. A preposition is a word that shows the relation of nouns, pronouns, and phrases with the other words in a sentence.

Consider the following examples:

- There is a fish in the bottle.
- The boy jumped into the river.

In the first example, the word 'in' shows the relation between a fish and a bottle, while in the second example, the word 'into' shows the relation between a boy and a river. Therefore, the words in and into are the prepositions in the given sentences. Some basic rules of using a preposition in a sentence are as follows:

- A preposition may have two or more objects. For example: The horse runs over hill and plain.
- A preposition is often used before its object, but sometimes it is used after the object.
- The prepositions for, from, in, and on are sometimes omitted before nouns of place or time. For example: You did it last Monday.
- Some words are used sometimes as adverbs and sometimes as prepositions.

4. Compare and contrast coordinating conjunction and subordinating conjunction.

Ans. A coordinating conjunction is a type of conjunction that joins two independent clauses of equal rank. It joins the elements of equal structure and importance. Some examples of coordinating conjunctions are 'and, but, for, or, nor, also, either-or, neither-nor'. For example: Mukesh sings and Nikhil swims. I like tea, but my brother likes coffee.

In the preceding examples, two independent statements or two statements of equal rank are joined by the words 'and' and 'but'. Therefore, the words 'and' and 'but' are coordinating conjunctions.

A subordinating conjunction is a type of conjunction that joins two statements or clauses in which one statement or clause is dependent on the other. Some examples of subordinating conjunctions are 'after, because, if, that, though, although, till, before, unless, as, when, where, and while'. For example: Sandeep plays football because he likes it. You will pass if you work hard.

In the first sentence, the clause or statement 'because he likes it' is dependent on the other statement or clause 'Sandeep plays football.' Again, in the second sentence, 'if you work hard' is dependent on 'you will pass.' Therefore, the words 'because' and 'if' are subordinating conjunctions.

5. What are the different ways to enhance the interpersonal skills of the employees of an organization? Explain.

Ans. For building good personal professional relations, you require good interpersonal skills for which, you need to have excellent communication skills. In an organizational context, communication involves conveying orders, instructions, and information to achieve the desired level of performance of employees. However small or big a



business may be, its success depends on the efficiency of its communication system, both within and outside the organization. Where proper communication results in clarity and shared understanding between managers and employees, inaccurate or ineffective communication may lead to conflicts within the organization and loss of goodwill outside it.

6. What is the role of non-verbal communication in the success of an organization? Explain with examples.

Ans. Non-verbal communication is the kind of communication that involves various characteristics, such as tone of the voice (inflections), smell, touch, and body motion. Such communication may involve symbols and sign languages that do not require words to be conveyed. In an organization, where there must be good communication among people, non-verbal communication increases clarity, interest and trust to one's way of presentation of thoughts. The following are some points that make non-verbal communication significant in any organization:

- It reinforces what has already been said.
- It can communicate ideas without using any words.
- It can add extra value to a verbal message.
- It can be used to emphasize a particular section of verbal information.

7. Explain in detail the principles and functions of business communication.

Ans. The following are the seven principles of business communication and their functions:

- **Clarity:** Requires the use of a simple language for communication.
- **Completeness:** Implies that communication should contain all the information necessary to get the desirable response from the sender. On the other hand, the sender should answer all the questions asked by the receiver and pay attention to all minute details.
- **Conciseness:** Implies that the message should be free from superfluous details, which helps in saving the time of both, the sender and the receiver.
- **Consideration:** Requires preparing the message keeping the recipient in mind. A sender, while sending the message should take into consideration the views, thoughts, background, mindset, and education level of the receiver and vice versa.
- **Correctness:** Implies that the message should state accurate facts and figures.

- **Concreteness:** Implies that the message should be specific and to the point. The details provided in the message should be definite and vivid.
- **Courtesy:** Constitutes one of the important elements of an effective business communication.

8. What is a paragraph? What are the elements that are essential to good paragraph writing?

Ans. A paragraph is a set of sentences focusing upon a single idea or train of thought. Ideally, a paragraph should be around 5-7 sentences containing the topic sentence, 3-5 supporting sentences and a concluding sentence. The following are the four elements that are essential to good paragraph writing:

- **Unity:** After introducing the main topic of the sentence, each subsequent sentence should elaborate and provide more detail to that topic, giving the paragraph unity.
- **Order:** The way sentences are organized in a paragraph is known as its order. For example, you can choose to write your ideas in the order of importance, chronological order, or another logical presentation.
- **Coherence:** It implies that every sentence in your paragraph should be logically connected to the sentence that precedes it. Coherence of ideas makes your work understandable.
- **Completeness:** A paragraph is called complete if all the sentences in it clearly and sufficiently support the main idea.

### Higher Order Thinking Skills (HOTS) Questions

1. Fill in the blanks using the given words:

Audience, sender, message, encoding, response, communication, feedback channel

Ans. In the communication process, the sender should know the types of audience and their desirable responses. It is very important for the sender to compose the message properly so that the receiver can easily understand the meaning of the message. While encoding the message, the type of target audience should also be kept in mind. The audience must receive the message without any interruption. The sender should also have a feedback channel to acknowledge the delivery of the message as well as to get receiver's response about the message.

NOTRE DAME HOLY CROSS HIGH SCHOOL, MOHARPARA

Class 9 Information Technology Part B Unit 6 Introduction to IT/ ITeS

Q1. What is IT?

Answer: Information Technology (IT) means creating, managing, storing and exchanging information. IT includes all types of technology used to deal with information, such as computer hardware and software technology, used for creating, storing and transferring information.

Q2. What is ITeS?

Answer: ITeS stands for Information Technology Enabled Services. It includes a wide variety of operations which uses information technology to improve the efficiency of an organization.

Q3. Difference between IT and ITeS.

Answer:

IT stands for Information Technology.

ITeS is for information technology enabled services.

IT is the study of the design, management, development, implementation, and support of computer-based information systems, typically about computer hardware and application software.

ITeS is part of IT. ITeS Self means IT with enabled services. ITeS is the study of outsourced service which has arisen due to involvement in various fields of IT such as banking and finance, BPO, call centres, etc

Q4. What is BPO?

Answer: BPO is business process outsourcing, which technically means giving your backend processes to another company (vendor) to perform on their behalf.

## Benefits of BPO:

**Financial Benefits:** BPO often provides a business process at lower costs. They save the results from one organisation and use it for another organisation in one way for another. This saves money.

**Flexibility:** BPO provides great flexibility to changing market and needs adjusts to the environment.

**Competitive advantage:** BPO allows organizations to focus on their main targets and takes the processes that are not core to them and do it very professionally, efficiently and qualitatively in a competitive environment.

## Risks of BPO

**Security breaches:** Organisations share regular and potential data with BPOs.

**Relationship challenges:** Organisations can face communication problems like what to share and what not to share with BPOs. Some critical information may be important to the BPOs to make a decision.

Q5. What is the role of BPO in the growth of Indian Economy?

**Answer:** The role played by BPOs in boosting India's economy shows that the IT and ITeS sector have been contributing largely to the economic growth of India. The growth in the contribution of BPOs to Gross Domestic Product has shown a steady rise from 1.2% to 5.4%. It is hence evident that the BPO industry is making an impact on the Indian economy.

Q6. Multiple Choice questions:

\_\_\_\_\_ includes all types of technology used to deal with information.

IT                      b. MRI                      c. None of these

**Answer:** a. IT

Computers works on the principal of input, \_\_\_\_\_ and output.

Memory              b. Processing              c. None of these

Answer: b. Processing

Q7. Give some examples of fields where ITeS are used.

Answer: Customer Relationship Management (voice and non-voice services), Medical Transcription, Back Office Support, Software development, IT help desk services, business transformations, Finance / Account etc.

Q8. Give examples of some BPO services.

Answer: Some BPO services are : Financial and Accounting services, Taxation and Insurance services, E-Publishing and Web Promotion, Multimedia and design services, Document management services, Software testing services, Health Care services etc.

Q9. What is BPM?

Answer: Business Process Management (BPM) is a process in which people use various methods to analyze, measure, improve and optimize the process. Sometimes people even end up discovering new business processes. The foremost aim of a BPM is to improve the corporate performance by managing the business processes.

School management system is a good example of BPM.

Q10. What are the life Cycle of BPM?

Answer:

Design: Break the process into multiple tasks.

Model: Model it using suitable BPM software.

Execute: Execute the processes or put a system in place.

Monitor: Monitor and analyze the system.

Optimize: Make change to the process to improve it.

Q11. What are the categories of BPM?

Answer: Categories of BPM are as follows:

Integration Centric BPM: An Integration Centric BPM is a fully integrated approach to building and promoting desktop and Internet applications. It is used when there is a need for BPM and the service-oriented architecture. It conveniently updates the applications and can also monitor the varying market conditions.

Human Centric BPM: It is an approach that focuses on the tasks, activities and human skills in process, to create other automated functions to support these human actions.

Document Centric BPM: It is a process that is inclined towards the document management. It has very little to do with people or processes. This type of BPM services are generally used for routing, collaborating or approving documents.

Q12. What are the structure of the IT-BPM industry?

Answer: The structure of the IT-BPM industries are as follows:

Sector the organization is serving.

Type as well as range of offering the organization provides.

Geographic spread of operations.

Revenues and size of operations.

Q13. What are MNCs. Give one example.

Answer: A Multinational Company (MNC) generally has offices and/or factories in different countries and a centralized head office where they coordinate global management.

Q14. What is Indian Service Providers?

Answer: Their headquarters are mostly in India and they operate in other countries. They have main focus on Indian customers.

Example: Reliance.

Q15. Multiple Choice Questions:

BPM stands for \_\_\_\_\_

Business Process Market

Business Process Management

None of these

Answer: b. Business Process Management.

\_\_\_\_\_ organizations cater the needs of their parent company only and do not serve external clients.

GIC

b. MNCs

c. ISPs

Answer: a. GIC (Global In-house Centers)

Q16. Write the uses of MRI machine.

Answer: MRI (Magnetic Resonance Imaging Machine) machine are used to give the digital impression of internal organs of the body by using strong magnetic fields and radio waves. The digital images are very helpful in the detection and treatment the diseases.

Q17. What is e-governance?

Answer: Electronic governance or e-governance is the application of information and communication technology (ICT) for delivering government services, exchange of information, communication transactions, integration of various stand-alone systems between government to citizen (G2C), government-to-business (G2B), government-to-government (G2G), government-to-employees (G2E) as well as back-office processes and interactions within the entire government framework.

Q18. How is ICT used in classroom?

Answer: There are many ways in which ICT is used in a classroom, such as:

Smart classes

Presentation with animation and text

Experimental videos

Simulations

Images as Teaching Learning materials

Desktop publishing for magazines, letters and newspapers.

Educational games.

Q19. Explain the contribution of IT in education.

Answer: Using IT the teachers can create interesting audio and visual presentations which will keep the students engaged and will give them a greater understanding of all the concepts. Using Information Technology, the whole classroom can be digitalised thus making both teaching and process of learning much easier.

Q20. Explain the use of IT in library.

Answer: IT makes library work easier, faster, cheaper and more effective. Helps to manage information overload as information retrieval is made easier in computerized systems. Computerization saves space and reduces paper.

Q21. Explain the significance of IT in business.

Answer: IT is used in business to prepare a budget, management, payroll preparation, financial decision making, stock management, online sale and purchase of things. We can see product details or the demonstration online, pay online and product will be delivered to our doorstep. The number of goods can also be managed by computers.

Q22. Briefly explain different ways in which IT is used in healthcare services.

Answer: IT used in healthcare sectors in many ways. Hospital Management System is used to maintain patient's records, patient's admissions, patient's billing, patient's discharge report etc. The computerized machines are used for ECG, EEG, MRI, Ultrasound and CT scan, Nowadays, robots are used for operations.

Use of IT in diagnosis: High tech machines are used to treat critical diseases. Diseases like cancer are treated with computer aided machines.

Computerized Axial Tomography (CAT) Machine: 3D images of different parts of the body can be taken by using this machine. These images are helpful in the diagnosis of many diseases.

MRI (Magnetic Resonance Imaging Machine): MRI machine are used to give the digital impression of internal organs of the body by using strong magnetic fields and radio waves. The digital images are very helpful in the detection and treatment the diseases.

Electrocardiogram (ECG) Machine: Hearts pumps blood to different part of the body, this produces some electrical impulses. ECG machine records these electrical impulses and shows it in the form of graph.



Cardiac Screening Machine: The physiology of heart and the movements inside heart can be seen by using this machine. Many problems like thinning of veins can be diagnosed and treated using this machine.

Blood sugar testing devices: Now we can test the level of glucose in a person's blood where sample can be taken on a strip and tested on a machine.

Blood pressure measuring machine: Blood pressure can be checked from wrist band which can be worn on the wrist and a device attached shows blood pressure.

Q23. Write a short note on the following:

IT in Science and Engineering:

Answer: Science needs precision in calculations which are very complex. Scientists use Computer Aided Design (CAD) for drawing 3D objects and used Computer Aided Manufacturing (CAM) for showing result. The result can be drawn, designed and tested. Result can be printed on a paper or can be saved for future use. 3D visualization is possible because of computer. Complex scientific applications like rocket launching, Space exploration etc. are not possible with the use of computers. Robots are excellent gift of science and technology.

Q24. Multiple choice questions:

Which of the following shows the use of computer at home?

Watching movies            b. Treatment of diseases            c. None of these

Answer: a. Watching movies.

\_\_\_\_\_ machine is used to monitor the heartbeat.

MRI                            b. ECG                            c. None of these

Answer: b. ECG

ATM stands for \_\_\_\_\_

Automated Teller Machine

Automatic Transaction Machine

None of these

Answer: a. Automate Teller Machine

Which of the following scenarios can be overcome by using BPM?

Less errors            b. Time wastages            c. None of these

Answer: a. Less errors

Q25. What is LMS (Learning Management System)?

Answer: Learning Management System is a software-based platform where audio, video lectures and assignment is provided online in which, we can attend classes, takes exams and see the results while sitting at home. We can also participate in co-curricular activities online. Even parents can view or monitors our report online.

## Dukh ka Adhikar

निम्नलिखित प्रश्नों के उत्तर एक-दो पंक्तियों में दीजिए –

1. किसी व्यक्ति की पोशाक को देखकर हमें क्या पता चलता है?

उत्तर:- किसी व्यक्ति की पोशाक को देखकर हमें समाज में उसका दर्जा और अधिकार का पता चलता है तथा उसकी अमीरी-गरीबी श्रेणी का पता चलता है।

2. खरबूजे बेचनेवाली स्त्री से कोई खरबूजे क्यों नहीं खरीद रहा था?

उत्तर:- उसके बेटे की मृत्यु के कारण लोग उससे खरबूजे नहीं खरीद रहे थे।

3. उस स्त्री को देखकर लेखक को कैसा लगा?

उत्तर:- उस स्त्री को देखकर लेखक का मन व्यथित हो उठा। उनके मन में उसके प्रति सहानुभूति की भावना उत्पन्न हुई थी।

4. उस स्त्री के लड़के की मृत्यु का कारण क्या था?

उत्तर:- उस स्त्री का लड़का एक दिन मुँह-अंधेरे खेत में से बेलों से तरबूजे चुन रहा था की गीली मेड़ की तरावट में आराम करते साँप पर उसका पैर पड़ गया और साँप ने उस लड़के को डस लिया। ओझा के झाड़-फूँक आदि का उस पर कोई प्रभाव न पड़ा और उसकी मृत्यु हो गई।

5. बुढ़िया को कोई भी क्यों उधार नहीं देता?

उत्तर:- बुढ़िया का बेटा मर गया था इसलिए बुढ़िया को दिए उधार को लौटने की कोई संभावना नहीं थी। इस वजह से बुढ़िया को कोई उधार नहीं देता था।

• प्रश्न-अभ्यास (लिखित)

निम्नलिखित प्रश्नों के उत्तर (25-30 शब्दों में) लिखिए –

1. मनुष्य के जीवन में पोशाक का क्या महत्व है?

उत्तर:- मनुष्य के जीवन में पोशाक का बहुत महत्व है। पोशाकें ही व्यक्ति का समाज में अधिकार व दर्जा निश्चित करती हैं। पोशाकें व्यक्ति को ऊँच-नीच की श्रेणी में बाँट देती हैं। कई बार अच्छी पोशाकें व्यक्ति के भाग्य के बंद दरवाजे खोल देती हैं। सम्मान दिलाती हैं।

2. पोशाक हमारे लिए कब बंधन और अड़चन बन जाती है?

**उत्तर:-** जब हमारे सामने कभी ऐसी परिस्थिति आती है कि हमें किसी दुखी व्यक्ति के साथ सहानुभूति प्रकट करनी होती है, परन्तु उसे छोटा समझकर उससे बात करने में संकोच करते हैं। उसके साथ सहानुभूति तक प्रकट नहीं कर पाते हैं। हमारी पोशाक उसके समीप जाने में तब बंधन और अड़चन बन जाती है।

### 3. लेखक उस स्त्री के रोने का कारण क्यों नहीं जान पाया?

**उत्तर:-** वह स्त्री घुटनों में सिर गड़ाए फफक-फफककर रो रही थी। इसके बेटे की मृत्यु के कारण लोग इससे खरबूजे नहीं ले रहे थे। उसे बुरा-भला कह रहे थे। उस स्त्री को देखकर लेखक का मन व्यथित हो उठा। उनके मन में उसके प्रति सहानुभूति की भावना उत्पन्न हुई थी। परन्तु लेखक उस स्त्री के रोने का कारण इसलिए नहीं जान पाया क्योंकि उसकी पोशाक रुकावट बन गई थी।

### 4. भगवाना अपने परिवार का निर्वाह कैसे करता था?

**उत्तर:-** भगवाना शहर के पास डेढ़ बीघा भर ज़मीन में खरबूजों को बोककर परिवार का निर्वाह करता था। खरबूजों की डलियाँ बाज़ार में पहुँचाकर लड़का स्वयं सौदे के पास बैठ जाता था।

### 5. लड़के की मृत्यु के दूसरे ही दिन बुढ़िया खरबूजे बेचने क्यों चल पड़ी?

**उत्तर:-** बुढ़िया बेटे की मृत्यु का शोक तो प्रकट करना चाहती है परन्तु उसके घर की परिस्थिति उसे ऐसा करने नहीं दे रही थी। इसका सबसे बड़ा कारण है, धन का अभाव। उसके बेटे भगवाना के बच्चे भूख के मारे बिलबिला रहे थे। बहू बीमार थी। यदि उसके पास पैसे होते, तो वह कभी भी सूतक में सौदा बेचने बाज़ार नहीं जाती।

### 6. बुढ़िया के दुःख को देखकर लेखक को अपने पड़ोस की संभ्रांत महिला की याद क्यों आई?

**उत्तर:-** लेखक के पड़ोस में एक संभ्रांत महिला रहती थी। उसके पुत्र की भी मृत्यु हो गई थी और बुढ़िया के पुत्र की भी मृत्यु हो गई थी परन्तु दोनों के शोक मनाने का ढंग अलग-अलग था। धन के अभाव में बेटे की मृत्यु के अगले दिन ही वृद्धा को बाज़ार में खरबूजे बेचने आना पड़ता है। वह घर बैठ कर रो नहीं सकती थी। मानों उसे इस दुःख को मनाने का अधिकार ही न था। आस-पास के लोग उसकी मजबूरी को अनदेखा करते हुए, उस वृद्धा को बहुत भला-बुरा बोलते हैं। जबकि संभ्रांत महिला को असीमित समय था। अढ़ाई मास से पलंग पर थी, डॉक्टर सिरहाने बैठा रहता था। लेखक दोनों की तुलना करना चाहता था इसलिए उसे संभ्रांत महिला की याद आई।

### निम्नलिखित प्रश्नों के उत्तर (50-60 शब्दों में) लिखिए –

#### 1. बाज़ार के लोग खरबूजे बेचनेवाली स्त्री के बारे में क्या-क्या कह रहे थे? अपने शब्दों में लिखिए।

**उत्तर:-** धन के अभाव में बेटे की मृत्यु के अगले दिन ही वृद्धा को बाज़ार में खरबूजे बेचने आना पड़ता है। बाज़ार के लोग उसकी मजबूरी को अनदेखा करते हुए, उस वृद्धा को बहुत भला-बुरा बोलते हैं। कोई घृणा से थूककर बेहया कह रहा था, कोई उसकी नीयत को दोष दे रहा था, कोई रोटी के टुकड़े पर जान देने वाली कहता, कोई कहता इसके लिए रिश्तों का कोई मतलब नहीं है, परचून वाला कहता, यह धर्म ईमान

बिगाड़कर अंधेर मचा रही है, इसका खरबूजे बेचना सामाजिक अपराध है। इन दिनों कोई भी उसका सामान छूना नहीं चाहता था।

## 2. पास-पड़ोस की दुकानों से पूछने पर लेखक को क्या पता चला?

**उत्तर:-** पास-पड़ोस की दुकानों में पूछने पर लेखक को पता चला की। उसका २३ साल का जवान लड़का था। घर में उसकी बहू और पोता-पोती हैं। लड़का शहर के पास डेढ़ बीघा भर जमीन में कछियारी करके निर्वाह करता था। खरबूजों की डलिया बाज़ार में पहुँचाकर कभी लड़का स्वयं सौदे के पास बैठ जाता, कभी माँ बैठ जाती। परसों मुँह-अंधेरे खेत में से बेलों से तरबूजे चुन रहा था कि गीली मेड़ की तरावट में आराम करते साँप पर उसका पैर पड़ गया और साँप ने उस लड़के को डस लिया। ओझा के झाड़-फूँक आदि का उस पर कोई प्रभाव न पड़ा और उसकी मृत्यु हो गई।

## 3. लड़के को बचाने के लिए बुढ़िया माँ ने क्या-क्या उपाय किए?

**उत्तर:-** लड़के को बचाने के लिए बुढ़िया जो कुछ वह कर सकती थी उसने वह सब सभी उपाय किए। वह पागल सी हो गई। झाड़-फूँक करवाने के लिए ओझा को बुला लाई, साँप का विष निकल जाए इसके लिए नाग देवता की भी पूजा की, घर में जितना आटा अनाज था वह दान दक्षिणा में ओझा को दे दिया परन्तु दुर्भाग्य से लड़के को नहीं बचा पाई।

## 4. लेखक ने बुढ़िया के दुःख का अंदाज़ा कैसे लगाया?

**उत्तर:-** लेखक उस पुत्र-वियोगिनी के दुःख का अंदाज़ा लगाने के लिए पिछले साल अपने पड़ोस में पुत्र की मृत्यु से दुःखी माता की बात सोचने लगा। वह महिला अढ़ाई मास से पलंग पर थी, उसे १५-१५ मिनट बाद पुत्र-वियोग से मूर्छा आ जाती थी। डॉक्टर सिरहाने बैठा रहता था। शहर भर के लोगों के मन पुत्र-शोक से द्रवित हो उठे थे।

## 5. इस पाठ का शीर्षक 'दुःख का अधिकार कहाँ तक सार्थक है ? स्पष्ट कीजिए।

**उत्तर:-** इस कहानी में उस बुढ़िया के विषय में बताया गया है, जिसका बेटा मर गया है। धन के अभाव में बेटे की मृत्यु के अगले दिन ही वृद्धा को बाज़ार में खरबूजे बेचने आना पड़ता है। बाज़ार के लोग उसकी मजबूरी को अनदेखा करते हुए, उस वृद्धा को बहुत भला-बुरा बोलते हैं। कोई घृणा से थूककर बेहया कह रहा था,

कोई उसकी नीयत को दोष दे रहा था, कोई रोटी के टुकड़े पर जान देने वाली कहता, कोई कहता इसके लिए रिशतों का कोई मतलब नहीं है, परचून वाला कहता, यह धर्म ईमान बिगाड़कर अंधेर मचा रही है, इसका खरबूजे बेचना सामाजिक अपराध है। इन दिनों कोई भी उसका सामान छूना नहीं चाहता था। यदि उसके पास पैसे होते, तो वह कभी भी सूतक में सौदा बेचने बाज़ार नहीं जाती।

दूसरी ओर लेखक के पड़ोस में एक संभ्रांत महिला रहती थी जिसके बेटे की मृत्यु हो गई थी। उस महिला का पास शोक मनाने का असीमित समय था। अढ़ाई मास से पलंग पर थी, डॉक्टर सिरहाने बैठा रहता था। लेखक दोनों की तुलना करना चाहता था। इस कहानी से स्पष्ट है कि दुःख मनाने का अधिकार भी उनके पास

है, जिनके पास पैसा हो। निर्धन व्यक्ति अपने दुख को अपने मन में ही रख लेते हैं। वह इसे प्रकट नहीं कर पाते। इसलिए इस पाठ का शीर्षक दुःख का अधिकार सार्थक है।

**निम्नलिखित के आशय स्पष्ट कीजिए –**

**1. जैसे वायु की लहरें कटी हुई पतंग को सहसा भूमि पर नहीं गिर जाने देतीं उसी तरह खास परिस्थितियों में हमारी पोशाक हमें झूक सकने से रोके रहती है।**

**उत्तर:-** प्रस्तुत कहानी समाज में फैले अंधविश्वासों और अमीर-गरीबी के भेदभाव को उजागर करती है। यह कहानी अमीरों के अमानवीय व्यवहार और गरीबों की विवशता को दर्शाती है। मनुष्यों की पोशाकें उन्हें विभिन्न श्रेणियों में बाँट देती हैं। प्रायः पोशाक ही समाज में मनुष्य का अधिकार और उसका दर्जा निश्चित करती है। वह हमारे लिए अनेक बंद दरवाज़े खोल देती है, परंतु कभी ऐसी भी परिस्थिति आ जाती है कि हम ज़रा नीचे झुककर समाज की निचली श्रेणियों की अनुभूति को समझना चाहते हैं। उस समय यह पोशाक ही बंधन और अड़चन बन जाती है। जैसे वायु की लहरें कटी हुई पतंग को सहसा भूमि पर नहीं गिर जाने देतीं, उसी तरह खास परिस्थितियों में हमारी पोशाक हमें झूक सकने से रोके रहती है।

**2. इनके लिए बेटा-बेटी, खसम-लुगाई, धर्म-ईमान सब रोटी का टुकड़ा है।**

**उत्तर:-** समाज में रहते हुए प्रत्येक व्यक्ति को नियमों, कानूनों व परंपराओं का पालन करना पड़ता है। दैनिक आवश्यकताओं से अधिक महत्व जीवन मूल्यों को दिया जाता है। यह वाक्य गरीबों पर एक बड़ा व्यंग्य है। गरीबों को अपनी भूख के लिए पैसा कमाने रोज़ ही जाना पड़ता है चाहे घर में मृत्यु ही क्यों न हो गई हो। परन्तु कहने वाले उनसे सहानुभूति न रखकर यह कहते हैं कि रोटी ही इनका ईमान है, रिश्ते-नाते इनके लिए कुछ भी नहीं है।

**3. शोक करने, गम मनाने के लिए भी सहूलियत चाहिए और... दुःखी होने का भी एक अधिकार होता है।**

**उत्तर:-** यह व्यंग्य अमीरी पर है क्योंकि समाज में अमीर लोगों के पास दुख मनाने का समय और सुविधा दोनों होती हैं। इसके लिए वह दुःख मनाने का दिखावा भी कर पाता है और उसे अपना अधिकार समझता है। शोक करने, गम मनाने के लिए सहूलियत चाहिए। दुःख में मातम सभी मनाना चाहते हैं चाहे वह अमीर हो या गरीब। परंतु गरीब विवश होता है। वह रोज़ी रोटी कमाने की उलझन में ही लगा रहता है। उसके पास दुःख मनाने का न तो समय होता है और न ही सुविधा होती है। इस प्रकार गरीबों को रोटी की चिंता उसे दुःख मनाने के अधिकार से भी वंचित कर देती है।

**• भाषा अध्ययन**

**1. निम्नांकित शब्द-समूहों को पढ़ो और समझो –**

क) कड़, घा, पतङ्ग, चञ्चल, ठण्डा, सम्बन्ध।

ख) कंधा, पतंग, चंचल, ठंडा, संबंध।

ग) अक्षुण्ण, समिमलित, दुअत्री, चवत्री, अन्न।

घ) संशय, संसद, संरचना, संवाद, संहार।

ड) अंधेरा, बाँट, मुँह, ईंट, महिलाएँ, में, मैं।

ध्यान दो कि ङ्, ज्, ण्, न्, म् ये पाँचों पंचमाक्षर कहलाते हैं। इनके लिखने की विधियाँ तुमने ऊपर देखीं – इसी रूप में या अनुस्वार के रूप में। इन्हें दोनों में से किसी भी तरीके से लिखा जा सकता है और दोनों ही शुद्ध हैं। हाँ, एक पंचमाक्षर जब दो बार आए तो अनुस्वार का प्रयोग नहीं होगा, जैसे – अम्मा, अन्न आदि। इसी प्रकार इनके बाद यदि अंतस्थ य, र, य, व और ऊष्म श, ष, स, ह आदि हों तो अनुस्वार का प्रयोग होगा,

परंतु उसका उच्चारण पंचम वर्णों में से किसी भी एक वर्ण की भाँति हो सकता है ; जैसे – संशय, संरचना में ‘न्’, संवाद में ‘म्’ और संहार में ‘ङ्’। (◌) यह चिह्न है अनुस्वार का और (◌) यह चिह्न है अनुनासिका का। इन्हें क्रमशः बिंदु और चंद्र-बिंदु भी कहते हैं। दोनों के प्रयोग और उच्चारण में अंतर है। अनुस्वार का प्रयोग व्यंजन के साथ होता है अनुनासिका का स्वर के साथ।

उत्तर:- निम्नांकित शब्द -समूहों को पढ़ो और समझो –

क) कङ्, घा, पतङ्, ग, चञ्चल, ठण्डा, सम्बन्ध।

ख) कंधा, पतंग, चंचल, ठंडा, संबंध।

ग) अक्षुण्ण, समिमलित, दुअत्री, चवत्री, अन्न।

घ) संशय, संसद, संरचना, संवाद, संहार।

ड) अंधेरा, बाँट, मुँह, ईंट, महिलाएँ, में, मैं।

ध्यान दो कि ङ्, ज्, ण्, न्, म् ये पाँचों पंचमाक्षर कहलाते हैं। इनके लिखने की विधियाँ तुमने ऊपर देखीं – इसी रूप में या अनुस्वार के रूप में। इन्हें दोनों में से किसी भी तरीके से लिखा जा सकता है और दोनों ही शुद्ध हैं। हाँ, एक पंचमाक्षर जब दो बार आए तो अनुस्वार का प्रयोग नहीं होगा, जैसे – अम्मा, अन्न आदि। इसी प्रकार इनके बाद यदि अंतस्थ य, र, य, व और ऊष्म श, ष, स, ह आदि हों तो अनुस्वार का प्रयोग होगा, परंतु उसका उच्चारण पंचम वर्णों में से किसी भी एक वर्ण की भाँति हो सकता है ; जैसे – संशय, संरचना में ‘न्’, संवाद में ‘म्’ और संहार में ‘ङ्’। (◌)

यह चिह्न है अनुस्वार का और (◌) यह चिह्न है अनुनासिका का। इन्हें क्रमशः बिंदु और चंद्र-बिंदु भी कहते हैं। दोनों के प्रयोग और उच्चारण में अंतर है। अनुस्वार का प्रयोग व्यंजन के साथ होता है अनुनासिका का स्वर के साथ।

2. निम्नलिखित शब्दों के पर्याय लिखिए –

उत्तर:-

ईमान	धर्म, विश्वास
बदन	शरीर, काया
अंदाज़ा	अनुमान, आकलन
बेचैनी	व्याकुलता, अकुलाहट
गम	दुःख, पीड़ा

दर्जा	श्रेणी, पदवी
ज़मीन	पृथ्वी, धरा
ज़माना	युग, काल
बरकत	लाभ, इज़ाफ़ा

### 3. निम्नलिखित उदाहरण के अनुसार पाठ में आए शब्द-युग्मों को छाँटकर लिखिए – उदाहरण : बेटा-बेटी

उत्तर:- खसम – लुगाई, पोता-पोती, झाड़ना-फूँकना,  
छत्री – ककना, दुअत्री-चवत्री।

### 4. पाठ के संदर्भ के अनुसार निम्नलिखित वाक्यांशों की व्याख्या कीजिए – बंद दरवाज़े खोल देना, निर्वाह करना, भूख से बिलबिलाना, कोई चारा न होना, शोक से द्रवित हो जाना।

उत्तर:- • बंद दरवाज़े खोल देना – प्रगति में बाधक तत्व हटने से बंद दरवाज़े खुल जाते हैं।

• निर्वाह करना – परिवार का भरण-पोषण करना।

• भूख से बिलबिलाना – बहुत तेज भूख लगना।

• कोई चारा न होना – कोई और उपाय न होना।

• शोक से द्रवित हो जाना – दूसरों का दुःख देखकर भावुक हो जाना।

### 5. निम्नलिखित शब्द-युग्मों और शब्द-समूहों को अपने वाक्यों में प्रयोग कीजिए –

क) छत्री-ककना अढ़ाई-मास पास-पड़ोस

दुअत्री-चवत्री मुँह-अँधेरे झाड़ना-फूँकना

ख) फफक-फफककर बिलख-बिलखकर

तड़प-तड़पकर लिपट-लिपटकर

उत्तर:- क)

1. छत्री-ककना – गरीब माँ ने अपना छत्री-ककना बेचकर बच्चों को पढ़ाया-लिखाया।

2. अढ़ाई-मास – वह विदेश में अढ़ाई – मास के लिए गया है।

3. पास-पड़ोस – पास-पड़ोस के साथ मिल-जुलकर रहना चाहिए, वे ही सुख-दुःख के सच्चे साथी होते हैं।

4. दुअत्री-चवत्री – आजकल दुअत्री-चवत्री का कोई मोल नहीं है।

5. मुँह-अँधेरे – वह मुँह-अँधेरे उठ कर काम ढूँढने चला जाता है।

6. झाड़-फूँकना – आज के जमाने में भी कई लोग झाँड़ने-फूँकने पर विश्वास करते हैं।

ख)

1. फफक-फफककर – भूख के मारे गरीब बच्चे फफक-फफककर रो रहे थे।

2. तड़प-तड़पकर – अंधविश्वास और इलाज न करने के कारण साँप के काटे जाने पर गाँव के लोग तड़प-तड़पकर मर जाते हैं।

3. बिलख-बिलखकर – बेटे की मृत्यु पर वह बिलख-बिलखकर रो रही थी।

4. लिपट-लिपटकर – बहुत दिनों बाद मिलने पर दोनों सहेलियाँ लिपट-लिपटकर मिलीं।



6. निम्नलिखित वाक्य संरचनाओं को ध्यान से पढ़िए और इस प्रकार के कुछ और वाक्य बनाइए :

(क)

- लड़के सुबह उठते ही भूख से बिलबिलाने लगे।
- उसके लिए तो बजाज की दुकान से कपड़ा लाना ही होगा।
- चाहे उसके लिए माँ के हाथों के छत्री-ककना ही क्यों न बिक जाएँ।

(ख)

- अरे जैसी नीयत होती है, अल्ला भी वैसी ही बरकत देता है।
- भगवाना जो एक दफे चुप हुआ तो फिर न बोला।

उत्तर:- (क)

- छोटा बच्चा नींद से उठते ही भूख से बिलबिलाने लगा।
- आज उसके जन्मदिन का उपहार लाना ही होगा।
- माँ मोहन को पढ़ाना चाहती थीं, चाहे उसके लिए उसके हाथों के छत्री-ककना ही क्यों न बिक जाएँ।

(ख)

- अरे जो जैसा करता है, वैसा ही भरता है।
- बीमार रामू जो एक दफे चुप हुआ तो फिर न बोला।

Class IX

ECONOMICS

Chapter 2: People as Resource

Page:27

Answer 1: The people of the country are its valuable resources, if they are healthy, educated and skilled.

No economic activity is possible without human resource. It works as labour, management and entrepreneur in all the economic activities and as such it is indispensable factor of production.

Answer 2: Human resource is different from other resources on the following basis:

- (a) Human resource is living, active and sensitive factor of production.
- (b) Human resource extracts work and activates other factors.
- (c) Human resource works as labour, management and entrepreneur.

Similar Question

- How is human resource different from other factors of production? Explain it in three points

Answer 3: Education is an important factor for the development of human resource.

\*Education -general, technical and medical improves the level of understanding.

\*It also adds to the capacity of human stock to produce more. It increases the mental efficiency of the people.

Education can play an effective role in raising production from its low level. General and technical education develops the efficiency among the labourers to use highly advanced techniques of production for the optimum use of the existing resources.

Education builds healthy human capital to handle the pressure of challenging jobs.

Answer 4: Health is the basic constituent of human capacity. Human element is an essential.

\*In spite of all technological development human resource is still an indispensable factor of production.

\*The economic growth can be achieved at faster rate, if we are healthy and competent enough.

\*As the old proverb goes, 'a sound mind live in a sound body', so physical health leads to mental soundness.

\*Both combined together increase the productivity and efficiency of human resource.

Answer 5: Health plays crucial part in individual's working life:

- (a) It helps a person to fight illness.
- (b) It creates well being of human life.
- (c) It adds to the quality of life of an individual.
- (d) It adds value to the human resources of the country.

Answer 6: Following activities are undertaken in the primary, secondary and tertiary sectors:

- (a) Primary Sector . Farming, mining, fishing, foresting, animal husbandry, flower cultivation etc.
- (b) Secondary Sector. Construction work, manufacturing, tailoring, working in industry like working in match factory etc.
- (c) Tertiary Sector, Banking, transportation, insurance, communication, financing, courier, astronaut etc.

Answer 7: Economic activities: Activities performed to earn livelihood and having economic motive are termed as economic activities. These activities are concerned with the production, exchange and distribution of goods and services. The engagement of people in business, profession and employment are economic activities. These activities are rewarded in monetary terms.

Non-economic activities: Activities performed to satisfy emotional and psychological needs and having no economic motive behind them are known as non-economic activities. These activities may be social, cultural, religious, educational and charitable.

Answer 8: Women are paid low as compared to men.

\*The major reason for this is that women have meagre education and low skill formation.

\*Also, in unorganized sector there is a general bias towards women workers who are not highly educated and skilled.

\*Physical and emotional weakness, non suitability for hazardous work and social restrictions also add up to the reason that women are employed in low paid work.

Answer 9: Unemployment is a situation, wherein the able bodies persons, willing to work are not able to find a job that earns them living.

\*According to this definition those, who are permanently incapable and mentally retarded cannot perform any job, so they should be excluded from the list of unemployed.

\*There may be still others, who may not be willing to perform any job and thus they can also not be treated as unemployed.

\*In other words, usual status of unemployment refers to the number of persons who are willing to work for major part of the year i, e., 183 days and more but do not get work.

Answer 10: Unemployment is a situation in which a person is willing to work at prevailing wages, but does not get any job.

Disguised unemployment: It is a situation, wherein marginal physical productivity of labour is zero.

\*In other words, where more people are put in a job than actually required are called disguised unemployed.

\*It is invisible and found among wage earners, mostly in agriculture.

Seasonal unemployment: Getting employment only for the part of the year in certain sectors, such as agriculture is known as seasonal employment.

\*It is not a regular source of earning and the person has to find an alternate job for all season time.

Answer 11: A large number of matriculates, grad graduates and even engineers are unemployed. Rate of unemployment is higher among graduy and post -graduate as compared to matriculate. Educated unemployment is a peculiar problem in India due to following reasons:

\*They feel themselves burden on their family and are stressed.

\*Their skill and power are not being used by Nation, which otherwise may increase national income.

\*It creates dissatisfaction amongst the youth that education in India does not provide enough opportunity for utilization of their talent.

\*It also puts a question mark on the education system in India that it is not able to produce employable human resources in the economy.

\*It also causes the skilled labour to leave the country and join employment in developed country whii results in the outflow of domestic talent a foreign country.

Answer 12: India can build the msxi employment opportunity in the service sector. Land has its limitations. It can't be increased. Industry requires vast resources, which we cannot easily afford. We have got large population, which needs to be properly educated and developed into professionally qualified and skilled work force. Such people will have intery market and can be absorbed in any country.

Answer 13: Education, which claims to add to the productivity of the people proves to be curse, when these educated people do not find a job. The following measures are suggested to solve the problem of educated unemployed.

Answer 14: Yes, we can imagine some bill villagers, which initiatially had no job opportunity but later came up with many.

\*It was made possible by providing education to village people.

\*Educated people got absorbed in teaching profession.

\* Girls were trained in stitching and tailoring job emerged.

\*The village boy qualified as agro-engineer, revolutionised the cultivation. It increased production and marketing for the surplus production also absorbed some people. All these jobs could be created by improving the quality of human resource.

Answer 15: We shall consider Human Capital as the best because:

\*Land, being fixed cannot be expanded. \*Physical capital is itself man-made.

It requires vast resources and cannot be increased beyond certain limit.

\*Human capital can be developed to any extent and its return can be multiplied many times.

\*Physical capital is generated, managed and controlled by human capital.

\*Human capital not only works for himself but also activates other sources.

\*Human capital is an indispensable factor of production.

Class 9

History

Section I: Page 25:

II. Socialism in Europe and the Russian Revolution

Page 48:

Answer 1: SOCIAL CONDITIONS: 85% of Russia's population was agriculturist. The industry was existent, but rarely in which most of was privately owned. Workers were divided on the basis of their occupation. They mainly migrated to cities for employment in factories. The peasant community was deeply religious but did not care much about the nobility. They believed that land must be divided amongst themselves.

ECONOMIC CONDITION :Russia was going through bad period economically. Pricet of essential good rises while real wages decrease d by 2% leading to the famous St. Petersburg strike.This strike started a series of events that are together known as the 1905 Revolution. During this revolution, there were strikes all over the cou country, universities close closed down, and various professionals and workers established the Union of unions, demanding the establishment of a constituent assembly.

POLITICAL CONDITION : POLITICAL Parties were illegal before 1914 . The Russian social Democratic workers Party was founded in 1898 by socialists who respected Maary's ideas. In 1903,this party was divided into two groups Mensheviks and Bolsheviks. The Bolsheviks. Who were in majority, were led by Lenin who is regarded as the greatest thinker socialism after Marx.

Answer 2: The working population in Russia was different from other countries in Europe before 1917 because not all Russian workers migrated from the villages to work in the industrial sector. Some of them continued to live in villages and went to work daily, to the towns. They were a divided group, socially and professionally, and this showed in their dress and manners too. Metal workers were the "aristocrats" of the working class because their occupation demanded more training and skill. Nevertheless, the working population was United on one front strikes against work conditions and employer tyranny.

Answer 3: The Tsar first dismissed the initial two Dumas and then packed the parliament with the conservatives. During the First world War, the Tsar took decisions without consulting the Duma. Large scale casualties of Russian soldiers in the war further alienated the people from the Tsar Burning of crops and buildings the retreating Russian armies created a huge shortage of food in Russia. All of these led to the collapse of the Tsarist autocracy in 1917.

Answer 4: February Revolution :

\*22<sup>nd</sup> February: Factory lockout on the right bank took place.

\*25<sup>th</sup> February : Duma was dissolved

\*27<sup>th</sup> February :Police Headquarters ransacked Regiments the workers.

\*2<sup>nd</sup> March : The Tsar abdicated his power. The Soviet ai Duma leaders formed a Provisional Government for Russia.

The February Revolution had no political party at its forefront. It was led by the people themselves. Petrograd had brought down the monarchy, and thus, gained a significant place in Soviet history. Trade Unions grew in number.

#### OCTOBER REVOLUTION

\*16<sup>th</sup> October: A Military Revolutionary committee was appointed by Soviet.

\*24<sup>th</sup> October: The uprising against provisional government begins Military Revolutionary Committee controls the city by night and ministers surrender. The Bolshevik gained power.

The October Revolution was primarily led by Lenin and his subordinates. Trotsky and involved the masses who supported these leaders. It marked the beginning of Lenin's rule over the Soviet, with the Bolsheviks under his guidance.

Answer 5: The main changes which were brought about by the Bolsheviks immediately after the October Revolution.

\*Banks and Industries were nationalised.

\*Land was declared social property thereby allowing peasants to seize it from the nobility.

\*In urban areas, houses were partitioned according to family requirements.

\*Old aristocratic titles were banned, and new uniforms were designed for the army and the officials.

\*New uniforms were introduced for the army and the officials.

Answer 6: \*(a) KULAKS: \*Wealth peasants who Stalin believed were hoarding the grains to gain more profit.

\*When the towns faced acute shortage of grains, Kulaks, were, through to be responsible behind it.

\*Stalin thought it was necessary to eliminate them so that farms could be modernised.

(b) THE DUMA:

Answer: In 1905, Tsar allowed the creation of an elected consultative Parliament or Duma. The Tsar dismissed the first Duma within 75 days and re-elected the second Duma within three months. Tsar did not want anyone to question his authority or undermine and reduce his powers. Tsar changed the voting laws and packed the Third Duma with conservative politicians. Liberals and revolutionaries were kept out.

(c) WOMEN WORKERS BETWEEN 1900 AND 1930

Answer:

\*Their wages were less than the wages of men.

\*They formed 31% of the factory workforce.

(d) THE LIBERALS

Answer: They considered all religions as equal.

gr\*They believe only men who have property had the right to vote

\*They wanted an elected form of Parliamentary governance.

#### STALIN'S COLLECTIVISATION PROGRAMME

\*He began this prog

ram programme in 1929.

\*He believed this program would help in improving grain supply

all peasants were forced to cultivate in collective forms called Kol-hoz.

\*On the contrary, this worsened the food supply situation. L



(Class – IX)

( Sub – Bengali )

“ছুটি”

-রবীন্দ্রনাথ ঠাকুর

১) “মাথায় চট করিয়া একটা নতুন ভাবোদয় হইল” – ক) কার লেখা, কোন গল্পের অন্তর্গত? খ) কার মাথায় কিসের ভাবোদয় হয়? তার পরিণাম কি হয়?

**উত্তর :** ক) আলোচ্য অংশটি বিশ্বকবি রবীন্দ্রনাথ ঠাকুরের ‘ছুটি’ নামক ছোট গল্পের অন্তর্গত।

খ) বালকদের সর্দার ফটিক চক্রবর্তীর মাথায় চট করে একটি ভাবোদয় হয়।

গ) নদীর ধারে একটা প্রকাণ্ড শালকাঠের গুঁড়ি মাস্তুলে পরিণত হওয়ার জন্য পড়েছিল। স্থির হল সেটাকে সকলে মিলে গড়িয়ে নিয়ে যাবে। যে ব্যক্তির কাঠ আবশ্যিককালে কতখানি বিস্ময় বিরক্তি বোধ করবে এটা ভেবে ফটিক এবং তার সঙ্গী সাথীদের আনন্দ হয়। কিন্তু খেলা আরম্ভ হওয়ার আগেই ফটিকের ছোট ভাই মাখন গম্ভীরভাবে সেই শাল কাঠের গুঁড়িতে এসে বসে। ফটিক শাসনের সুরে ধমক দিলেও মাখন তা থেকে নড়ে না। তখন ফটিক ঠিক করে যে মাখন শুদ্ধ গুঁড়টিকে গড়ালে খেলার মোজা আরো বৃদ্ধি পাবে। সেই মতো সকলে মিলে মাখন শুদ্ধ গুঁড়িটি গড়াতেই বিপত্তি বাঁধে। মাখন ভূমিসাৎ হয়, পরে উঠে সে ফটিকের উপর ঝাঁপিয়ে পড়ে। তারপর কাঁদতে কাঁদতে বাড়ি গিয়ে নালিশ জানায় মায়ের কাছে।

২) “পার্শ্বি ও গৌরবের ন্যায় ইহার আনুষঙ্গিক যে বিপদের সম্ভাবনা আছে, তা তাহার কিংবা আর কাহারও মনে উদয় হয় নাই” – ক) তাহার বলতে কাকে বোঝানো হয়েছে? খ) কাহারও বলতে কাদের বোঝানো হয়েছে? গ) আলোচ্য অংশের তাৎপর্য কী?

**উত্তর :** ক) কবিগুরু রবীন্দ্রনাথ ঠাকুর রচিত “ছুটি” নামক ছোটগল্পে ‘তাহার’ বলতে ফটিক চক্রবর্তীর ছোট ভাই মাখন চক্রবর্তীকে বোঝানো হয়েছে।

খ) এখানে ‘কাহারও’ বলতে ফটিক ও তার বন্ধুদের কথা বলা হয়েছে।

গ) বালকদের সর্দার ফটিক নদীর ধারে পড়ে থাকা একটা শাল কাঠের গুঁড়িকে ঠেলে নদীর জলে ফেলে দেওয়ার খেলায় মাতে। ঠিক সেই সময় তার ছোটো ভাই মাখন এসে গুঁড়িটির উপর বসে। ফটিক তাকে উঠে যাওয়ার জন্য বলা সত্যেও মাখন উঠতে রাজি হয়না। মাখন ভাবে, না উঠাতে তার গৌরব আছে। কিন্তু গৌরবের সঙ্গে যে বিপদের সম্ভাবনা আছে তা সে ভাবতে পারেনি। তাই ছেলের দল যখন মাখন

শুদ্ধ শাল কাঠের গুঁড়িটি গড়াতে আরম্ভ করে, তখন মাখন ভূমিসাৎ হয় এবং আহত হয়। সে উঠে এসে দাদা ফটিকের উপর ঝাঁপিয়ে পড়ে। তারপর কাঁদতে কাঁদতে বাড়ির পথ ধরে এবং মাকে গিয়ে ফটিকের বিরুদ্ধে নালিশ জানায়।

৩) “বিধবা এই প্রস্তাবে সহজেই সম্মত হইলেন” - ক) বিধবা বলতে কাকে বোঝানো হয়েছে? খ) প্রস্তাবটি কি ছিল? গ) তার সম্মত হওয়ার কারণ কী?

**উত্তর :** ক) কবিগুরু রবীন্দ্রনাথ ঠাকুর রচিত “ছুটি” নামক ছোটগল্পে ‘বিধবা’ বলতে ফটিকের মাকে বোঝানো হয়েছে। ফটিকের বাবা বেশ কিছুদিন আগে মারা গেছেন। তাই ফটিক ও মাখনকে নিয়ে বিধবা গ্রামের বাড়িতে থাকতেন।

খ) প্রস্তাবটি ছিল ফটিকের মামা বিশ্বম্ভর বাবুর। ভগিনীর কাছ থেকে অর্থাৎ ফটিকের মায়ের কাছ থেকে ফটিকের পড়াশোনায় অমনোযোগী হওয়া, পড়াশোনা না করা, মাকে জ্বালাতন করা প্রভৃতির কথা শুনে বিশ্বম্ভরবাবু প্রস্তাব করেন যে ফটিককে তিনি কলকাতায় নিয়ে গিয়ে নিজের কাছে রেখে লেখাপড়া শেখাবেন - এই প্রস্তাবে বিধবা সহজেই সম্মত হন।

গ) ফটিকের মায়ের ভয় ছিল যে দুরন্ত ফটিক কোনোদিন না জানি কী বিপদ ঘটিয়ে ফেলে। কোন দিন হয়তো মাখনকে জলে ফেলে দেবে কিংবা মেরে মাথা ফাটিয়ে দেবে কী অন্য কোন দুর্ঘটনা ঘটিয়ে বসে, তাই ফটিকের কলকাতা যাওয়ায় বিধবা সহজেই সম্মতি দেন।

৪) “মামি এই অনাবশ্যক পরিবার বৃদ্ধিতে মনে মনে যে বিশেষ সন্তুষ্ট হইয়াছিলেন তাহা বলিতে পারি না” - ক) কার কোন গল্পের অন্তর্গত? ‘মামি’ বলতে কাকে বোঝানো হয়েছে? খ) অনাবশ্যক পরিবার বৃদ্ধি বলতে কী বোঝানো হয়েছে? গ) তার অসন্তোষ প্রকাশের কারণ কী?

**উত্তর :** ক) আলোচ্য অংশটি বিশ্বকবি রবীন্দ্রনাথ ঠাকুর বিরচিত “ছুটি” নামক ছোটগল্পের অন্তর্গত।

এখানে ‘মামি’ বলতে কলকাতাবাসী মামা বিশ্বম্ভর বাবুর স্ত্রীকে বোঝানো হয়েছে। বিশ্বম্ভরবাবু সম্পর্কে ফটিকের মামা - সেই সূত্রে তার স্ত্রী ফটিকের মামি হন।

খ) ‘অনাবশ্যক পরিবার বৃদ্ধি’ বলতে অকারণে পরিবারের সদস্য সংখ্যা বাড়ানোর কথা বোঝানো হয়েছে। ফটিকের মামা মামির পরামর্শ ছাড়াই ভাগিনা ফটিককে নিজের কাছে রেখে লেখাপড়া শেখানোর জন্য কলকাতায় নিয়ে এলেন। এখানে মামির সংসারে ফটিকের আগমনকেই অনাবশ্যক পরিবার বৃদ্ধি বলা হয়েছে।

গ) মামী তার পরিবারে ফটিকের অন্তর্ভুক্তিকে ভালো চোখে দেখেনি কারণ উটকো ঝামেলা পোহাতে তিনি রাজি নন। তাছাড়া এমনিতেই তাদের তিনটি ছেলে - তাদের নিয়ে ফটিকের মামি নিজের মতো করে সংসার চালান। তাই অকারণ সদস্য বৃদ্ধি তিনি ভাল মনে নিতে পারেননি। তাই বিশ্বম্ভরবাবুকে তার কাশভঞ্জনহীন মানুষ বলেই মনে হয়েছে। যদিও মুখে তিনি কিছু বলেননি - কিন্তু পাকে প্রকারে তিনি বুঝিয়ে দিয়েছেন যে তিনি খুশি নন।

৫) “মা, এখন আমার ছুটি হয়েছে - মা, এখন আমি বাড়ি যাচ্ছি” - ক) আলোচ্য অংশটির বক্তা কে? খ) কাকে উদ্দেশ্য করে কখন বলেছে? আলোচ্য অংশটির তাৎপর্য বিশ্লেষণ করো।

**উত্তর :** ক) আলোচ্য অংশটির বক্তা কবিগুরু রবীন্দ্রনাথ ঠাকুর রচিত “ছুটি” নামক ছোটগল্পের কেন্দ্রীয় চরিত্র ফটিক।

খ) সে একথা তার স্নেহময়ী মাকে উদ্দেশ্য করে বলেছে। তার অসুস্থতার সংবাদ পেয়ে তার মা কলকাতায় আসে - এবং ফটিকের বিছানার উপর ঝাঁপিয়ে পড়ে ফটিককে ‘বাপধন ফটিক’ বলে ডাক দেন। ফটিক প্রচলিত জ্বরের ঘোরে বলে ওঠে যে তার বাড়ি যাবার সময় হয়েছে - সে বাড়ি যাচ্ছে - এ প্রসঙ্গে বক্তার এই উক্তি।

গ) আসলে ফটিকের জ্বর অত্যন্ত বেড়ে যাওয়ায় সে প্রলাপের ঘোরে অনেক কথাই বলে। নৌকার জল মাপা, ছুটির কথা, আরো অনেক কিছু। মনের অবচেতন স্থরে যে কথা বহুদিন ধরে বলেছিল, প্রলাপের ঘোরে সেই সমস্ত কথা বেরিয়ে আসে। ছুটির যে আশঙ্কা বারবার তার মনে হয়েছে, তাই যেন মৃত্যুর মধ্য দিয়ে চিরছুটির দেশে যাত্রা করে বুঝিয়ে দিল - সে চিরদিনের জন্য তার বাড়িতে চলে যাচ্ছে।

৬) “মাস্টার যখন তাকে মার আরম্ভ করিত, তখন ভারাক্রান্ত গর্ধবের মতো সে নীরবে সহ্য করিত” - ক) কার কোন রচনার অন্তর্গত? খ) প্রসঙ্গটি আলোচনা করো। গ) আলোচ্য অংশের তাৎপর্য কী?

**উত্তর :** ক) আলোচ্য অংশটি কবিগুরু রবীন্দ্রনাথ ঠাকুরের “ছুটি” নামক ছোটগল্পের অন্তর্গত।

খ) মামার বাড়িতে ফটিকের অবস্থা ছিল দুঃসহ। স্কুলে তার মত নির্বোধ বালক আর কেউ ছিলনা। মাস্টারমশাই তাকে পড়া জিজ্ঞাসা করলে সে হাঁ করে চেয়ে থাকত এবং মাস্টার তাকে মার আরম্ভ করলে ভারাক্রান্ত গাধার মত নীরবে সে মার সহ্য করত - এই প্রসঙ্গেই এই উক্তি।

গ) ফটিকের মামা বিশ্বম্ভরবাবু ফটিককে কলকাতায় নিয়ে এলেন এবং কথামতো স্কুলে ভর্তি করিয়ে দিলেন। কিন্তু মামার বাড়িতে ফটিকের অবস্থা ছিল দুঃসহ। পড়াশোনায় তার মন বসে না - কেবল অত্যাচারীণী মায়ের কথা মনে পড়তো। ক্লাসে পড়াশোনা না পারার জন্য মাস্টারমশাই তাকে মারতে আরম্ভ করলে সে নিরবে তা সহ্য করতো। ভারবাহী গর্ধভ যেমন শত মার সত্ত্বেও বোঝা সমেত গাড়ি টেনে নিয়ে যেতে অপারগ হয় - ফটিকের অবস্থাও তেমনই হতো।

৭) “তখন তাহার মানসিক উন্নতির প্রতি মামির এতটা যত্নবাল্ল্য তাহার অত্যন্ত নিষ্ঠুর অবিচার বলিয়া মনে হইত” - ক) কার কোন রচনার অন্তর্গত? খ) আলোচ্য অংশটির প্রসঙ্গ নির্দেশ করো। গ) বক্তব্যটির তাৎপর্য বিশ্লেষণ করো।

**উত্তর :** ক) আলোচ্য অংশটি বিশ্বকবি রবীন্দ্রনাথ ঠাকুরের “ছুটি” নামক ছোটগল্পের অন্তর্গত।

খ) মামার বাড়িতে ফটিকের অবস্থান একটি মূর্তমান দূর্গ্রহ রূপে প্রতিভাত। এটাই ফটিকের সবচেয়ে বাজত। তার মামি তাকে যখন কোন কাজ করতে বলত, তখন সে তার চেয়ে বেশি করে ফেলত। কিন্তু তার মামি যখন বলতেন, থাক থাক চের হয়েছে - তখন তার মন ভেঙে যেত - এটাকে মামির দুর্ব্যবহার বলে মনে হতো তার।

গ) আসলে আমার বাড়িতে ফটিক এই বয়সে নিজেকে ঠিকমতো খাপ খাইয়ে নিতে পারিনি। নিজেকে অনাবশ্যক বলে মনে হচ্ছিল। সাধারণভাবে এই বয়সে মাতৃভবন ছাড়া আর কোন পরিচিত স্থান বালকের পক্ষে নরক বলে বোধ হয়। তাই ফটিকের অনাবশ্যক মানসিক উন্নতির প্রতি মামির যত্ন বাহুল্য তার অত্যন্ত নিষ্ঠুর বলে মনে হতো।

\*\*\*\*

Prabal Sarkar

## HINDI (B) SPARSH

### CLASS-9

#### Chapter-2

### पाठ-एवरेस्त: मेरी शिखर यात्रा (बचेंद्रि पाल )

मौखिक :

प्रश्नों के उत्तर एक-दो पंक्तियों में लिजिए -

- 1) उत्तर :-अग्रिम दल का नेत्रित्व प्रेमचंद कर रहे थे ।
- 2) उत्तर :- "सागरमाथा" का तात्पर्य है-समुद्र का माथा अर्थ सबसे ऊँचा स्थान ।हिमालय के सबसे ऊँचा पर्वत को सागरमाथा कहना पुरी तरह कहना उचित था। इसलिए लेखिका को ये नाम अच्छा लगा ।
- 3) उत्तर :-लेखिका को एक बड़े भारी बर्फ का बड़ा चक्करदार बर्फीली आकृति ध्वज जैसा लगा ।
- 4) उत्तर :- हिमस्खलन से चार शेरपा कुलियां घायल हुए और एक की मृत्यु हो गई ।
- 5) उत्तर : कर्नल खुल्लर ने कहा कि ऐसे साहसिक अभियानों में होने वाली मृत्यु को सहज भाव से स्वीकार करना चाहिए ।
- 6) उत्तर :- जलवायु अनुकूल न होने के कारण रसोइ सहायक की मौत हो गई ।
- 7) उत्तर:- कैप -चार 29 अप्रैल ,1984 को 7900 मीटर पर ' साउथ कोल' में लगाया गया ।
- 8) उत्तर :-बचेंद्रि पाल ने शेरपा कुली को अपना परिचय यह कहकर दिया कि वह बिल्कुल ही नौसिखिया है और एवरेस्ट उसका पहला अभियान है ।
- 9) उत्तर :- कर्नल खुल्लर ने बधाई देते हुए कहा कि " मैं तुम्हारी इस अनुठी उपलब्धि के लिये तुम्हारे माता-पिता को बधाई देना चाहूंगा और देश को तुम पर गर्व है और अब तुम ऐसे संसार में वापस जाओगी,जो तुम्हारे अपने पीछे छोड़े हुए संसार से एकदम भिन्न होगा" ।

.....

**लिखित :- (25-30 words)**

**Q.1) नजदीक से एवरेस्ट को देखकर लेखिका को कैसा लगा ?**

**अथवा**

**लेखिका किसे देखकर भौचक्की रह गई और देर तक निहारती रही ?**

**उत्तर :-** नजदीक से एवरेस्ट को देखकर लेखिका भौचक्की रह गई थी। लेखिका को वहा से एवरेस्ट और अन्य श्रेणियों दिख रही थी। वह ऊँची चोटियों से घिरी टेढ़ी मेढ़ी नदी को निहार रही थी।

---

।

**Q.2) डॉ. मीनू मेहता ने क्या जानकारी दी ?**

**उत्तर :-** डॉ. मीनू ने लेखिका को अल्युमिनियम की सीढ़ियों से अस्थायी पुलो का निर्माण करने ,लट्टों और रस्सियों का उपयोग करने ,बर्फ कि आड़ी-तिरछी दीवारो पर रस्सियों को बांधने तथा अग्रिम दल के अभियान की कार्यों की विस्तृत जानकारी दी ।

---

**Q.3) तेनजिंग ने लेखिका की तारीफ में क्या कहा?**

**उत्तर:-** तेनजिंग ने लेखिका को तारीफ में ये शब्द कहे –“ तुम एक पक्की पर्वतीय लड़की लगती हो । तुम्हें तो शिखर पर पहले ही प्रयास में पहुंच जाना चाहिए ”।

---

**Q.4) लेखिका को किनके साथ चढ़ाई करनी थी ?**

**उत्तर :-** लेखिका के अभियान – दल में यों तो लोपसांग ,तशारिंग ,एन.डी. शेरपा आदि अनेक सदस्य थे। किंतु उन्हें जिन साथियों के संग यात्रा करनी थी,वे थे-की, जय और मीनू ।

---

**Q.5) लोपसांग ने तम्बु का रास्ता कैसे साफ किया ?**

**उत्तर :-** लोपसांग ने तम्बु का रास्ता साफ करने के लिए स्विस् छुरी से काटना शुरू किया । फिर उन्होंने बड़े-बड़े हिमपिंडो को हटाया । उसके बाद उन्होंने बर्फ की खुदाई की ताकि बेचेद्री जी को निकाला जा सके ।

---

**Q.5 ) साउथ कोल कैम्प पहुंचकर लेखिका ने अगले दिन की महत्वपूर्ण चढ़ाई की तैयारी कैसे शुरू की?**

**उत्तर:-** 'साउथ कोल' कैम्प पहुंचकर लेखिका ने अगले दिन की चढ़ाई की तैयारी शुरू कर दी । उसने खाना ,कुकिंग गैस तथा कुछ ऑक्सीजन सिलिंडर इकट्ठे किए और उसके बाद चाय के लिए पानी गरम करने लग गई ।

(ख) निम्नलिखित प्रश्नों के उत्तर (50-60 शब्दों में) लिखिए :-

---

**1) उपनेता प्रेमचंद ने किन स्थितियों से अवगत कराया? (C.B.S.E)**

**उत्तर :-** उपनेता प्रेमचंद ने लेखिका को हिमपात के खतरों से अवगत कराया और बताया कि उनके अग्रिम दल ने 'कैंप एक' तक का रस्ता साफ कर दिया गया है। यह कैंप हिमपात के ठीक ऊपर है। पुल बनाकर, रस्सिया बांधकर तथा झंडियों से रास्ता चिह्नित कर दिया गया है। उन्होंने यह भी बताया कि ग्लेशियर बर्फ की नदी पर रस्ता बना दिया गया है किंतु हिमपात और अधिक हो गया तो रास्ता बनाने का काम फिर से करना पड़ सकता है।

---

**2. हिमपात किस तरह होता है और उससे क्या-क्या परिवर्तन आते हैं ?**

**उत्तर :-** बर्फ के खंडों का अव्यवस्थित ढंग से गिरना ही हिमपात कहा जाता है। ग्लेशियर के बहने से बर्फ में हलचल मच जाती है और इस कारण बर्फ की बड़ी-बड़ी चट्टानें तत्काल गिर जाती हैं। अन्य कारणों से भी अचानक खतरनाक स्थिति उत्पन्न हो जाती है। इससे धरातल पर बड़ी चौड़ी दरारें पड़ जाती हैं।

---

**3.) लेखिका के तम्बू में गिरे बर्फ पिंड का वर्णन किस तरह किया गया है ? (C.B.S.E)**

**अथवा**

**लेखिका के साथ हुए हादसे का वर्णन अपने शब्दों में करें।**

**उत्तर :-** लेखिका रात 12.30 बजे अपने तम्बू में गहरी नींद में सो रही थी तभी एक सख्त चीज़ उसके सिर के पिछले हिस्से से टकराई और वह जाग गई। वह ल्होत्से ग्लेशियर से टूट कर कैंप के ऊपर आ गिरा था। उसमें अनेक हिमखंडों का पुंज था। वह अत्यन्त तेज गति से और गर्जना के साथ गिर के कैंप को नष्ट कर दिया था। इससे चोट तो सभी को लगी पर मृत्यु किसी की भी नहीं हुई।

---

**4. लेखिका को देखकर 'की' हक्का-बक्का क्यों रह गया ? (C.B.S.E)**

**उत्तर :-** जय बचेन्द्रि का पर्वतरोही साथी था। उसे भी लेखिका के साथ पर्वत-शिखर पर जाना था परंतु वह सामान ढोने के कारण पीछे रह गया था। इतनी बर्फाली हवा में नीचे उतरना जोखिम भरा था। फिर भी लेखिका उसके लिए चाय-जूस लेकर रास्ते में लिवाने के लिए पहुँची। जय को कल्पना नहीं थी कि बचेन्द्रि उसकी चिंता करेगी और उसे लिवाने के लिए आएँगी। इसलिए लेखिका को देखकर 'की' हक्का-बक्का रह गया था।

---

**5) एवरेस्ट पर चढ़े के लिए कुल कितने कैम्प बनाए गए? उनका वर्ण कीजिए ।**

**उत्तर:- एवरेस्ट पर चढ़े के लिए कुल 6 कैम्प बनाए गए थे ।**

1. **बेस कैम्प** – यह मुख्य कैम्प था । यह कैम्प शेरपालैंड में लगाया गया और पर्वतीय दल के नेता कर्नल खुल्लर यहीं रहकर एक-एक गतिविधि का संचालन कर रहे थे ।
2. **कैम्प-एक** = यह कैम्प 6000 मीटर की ऊँचाई पर बनाया गया। यहाँ हिमपात से सामान उठाकर कैम्प तक लाए जाने का अभ्यास भी किया गया ।
3. **कैम्प-तीन** = इसे ल्होत्से पहाड़ियों के आँगन स्थित था। यहीं पे लेखिका और उसके साथी सोते समय एक हिमखंड उन पर आ गिरा था ।
4. **कैम्प-चार** = यह समुद्र –तट से 7900 मीटर की ऊँचाई पर स्थित था । यहीं से साउथ कैम्प और शिखर कैम्प के लिए चढ़ाई की गई ।
5. **साउथ कोल कैम्प** – यहीं से अंतिम दिन की चढ़ाई शुरू हुई ।
6. **शिखर कैम्प** – यह अंतिम कैम्प था जो एवरेस्ट के ठीक नीचे स्थित था । चोटी पर चढ़ाई से पहले यहीं आराम करके चायान किया गया ।

---

**6.) चढ़ाई के समय एवरेस्ट की चोटी की स्थिति कैसी थी ? (C.B.S.E)**

**उत्तर :-** जब बर्चेद्री पाल एवरेस्ट की चोटी पर पहुँची तो तेज़ हवा के कारण बर्फ़ चारों ओर उड़ रही थी । एवरेस्ट की चोटी शंकु के आकार की थी और वहाँ इतनी जगह भी नहीं थी कि दो व्यक्ति एक साथ जा सकें । चारों ओर हजारों मीटर लम्बी सीधी ढलान थी । अतः वहाँ अपने आपको स्थिर खड़ा करना बहुत कठिन था और उन्होंने बर्फ़ के फावड़े से बर्फ़ तोड़कर अपने टिकने योग्य स्थान बनाया ।

---

**7.) सम्मिलित अभियान में सहयोग एवं सहायता की भावना का परिचय बर्चेद्री के किस कार्य से मिलता है ? (C.B.S.E)**

**उत्तर :-** जब बर्चेद्री अपने दल के सदस्यों के साथ साउथ कोल कैम्प पहुँची तो केवल वह अपने लिए नहीं सोच रही थी बल्कि अपने दल के प्रत्येक सदस्य के लिए सोच रही थी । लेखिका ने अपने साथियों के लिए चाय और जुस लेने के लिए तेज़ बर्फ़ीली हवा में भी नीचे उतरकर जोखिम भरा काम किया । इस व्यवहार से कार्य में उसके सहयोग और सहायता की भावना का परिचय मिलता है ।

---



(ग) निम्नलिखित के आशय स्पष्ट कीजिए :-

1. एवरेस्ट जैसे महान अभियान में खतरों को और कभी-कभी तो मृत्यु भी आदमी को सहज भाव से स्वीकार करनी चाहिए ।

उत्तर :- एवरेस्ट की सर्वोच्च चोटी पर चढ़ना एक महान अभियान है । इसमें पग-पग जान का खतरा होता है । अतः यदि ऐसा कठिन कार्य करते हुए मृत्यु भी हो जाए तो उसे सहज घटना के रूप में लेना चाहिए । बहुत हाय-तौबा नहीं मचानी चाहिए ।

---

2. **उत्तर :-** इस कथन का आशय है कि हिमपात के कारण बर्फ के खंडों के दबाव से कई बार धरती के धरातल पर दरार पड़ जाती है । यह दरार इतनी गहरी और चौड़ी हो जाती है कि धरती फट के खाई-सी बन जाती है और यह बहुत खतरनाक होते हैं। यह विचार आते ही मन में बहुत डर लगता है । इससे भी भयानक यह जानकारी थी कि जितने समय तक ये पर्वतारोही और कुली चढ़ाई अभियान पर रहेंगे, हिमपात होता रहेगा और बर्फ गिरने कि भयानक घटनाएँ होती रहेंगी । यह हिमपात पर्वतारोहियों के शरीर को छूता है ।
- 

3. **उत्तर :-** जब बचेन्द्रि पाल हिमालय की चोटी पर सफलतापूर्वक पहुँच गई तो उसने घुतने के बल बैठकर बर्फ को माथे से छुआ । बिना सिर झुकाए हुए ही अपने थैले से दुर्गा माँ का चित्र और हनुमान चालीसा निकाला । उसने इन्हें एक लाल कपड़े में लपेटा । थोड़ी सी पूजा की । फिर इस चित्र तथा हनुमान चालीसा को बर्फ में दबा दिया । उस समय उसे बहुत आनंद मिला । उसने प्रसन्नतापूर्वक अपने माता-पिता को याद किया ।
- 

**भाषा-अध्ययन**

**1. निम्नलिखित शब्दों की व्याख्या पाठ का संदर्भ देकर कीजिए ।**

**उत्तर:- निहारा है-** प्रसन्नतापूर्वक देखा है ।

( जब बचेन्द्रि पाल ने हिमालय की शोभा पर मुग्ध होकर उसे प्रशंसा से भाव से देखा तो उसके लिए 'निहारना' शब्द का प्रयोग किया ।

**धसकना** - नीचे को धसना । ( जब धरती का कुछ हिस्सा नीचे की ओर दब जाता है तो उसे धसकना कहते हैं ।

**खिसकना** : अपनी जगह से हटकर परे चले जाना ।

हिमपात आने पर कभी-कभी बड़े-बड़े हिमखंड खिसक जाते हैं ।

**सागरमाथा** - संसार का सबसे ऊँचा स्थान ।

जिस स्थान से बर्चेद्री पाल ने हिमालय की चढ़ाई आरंभ की, वह समुद्र तल का सर्वोच्च स्थान है। इसलिए उसे समुद्र का माथा कहा गया है ।

**जायजा लेना**- जाच -परख करना ।

बर्चेद्री पाल के अभियान दल के पहुँचने से पहले एक अग्रिम दल जाता था । वह सारी परिस्थिति का जायजा लेता था ।

**नौसिखिया**- नया-नया, अनजान।

तेनजिंग के सामने बर्चेद्री पाल ने स्वयं को नौसिखिया पर्वतारोही कहा ।

---

## 2. निम्नलिखित पंक्तियों में उचित विराम चिन्हों का प्रयोग कीजिए ।

(क) उत्तर:- उन्होंने कहा-" तुम एक पक्की पर्वतीय लड़की लगती हो। तुम्हें तो शिखर पर पहुँचे ही प्रयास में पहुँच जाना चाहिए ।"

(ख) उत्तर:- क्या तुम भयभीत थीं ?

ग) उत्तर:- तुमने इतनी बड़ी जोखिम क्यों ली, बर्चेद्री ।

---

3. उत्तर- **टेढ़ी-मेढ़ी**- बर्फ की नदी टेढ़ी-मेढ़ी थी।

**हक्का -बक्का** = जय बर्चेद्री को आया देखकर हक्का-बक्का रह गया ।

**गहरे-चौड़े**= बर्फ गिरने के कारण धरती पर गहरे-चौड़े गड्ढे पड़ गए ।

**इधर -उधर** = पर्वत -चोटी के इधर-उधर ढलाने ही थी ।

**आस-पास** = पर्वत पर आस पास कोई पेड़ नहीं था ।

**लम्बे -चौड़े**= रास्ते के दोनों ओर लम्बे -चौड़े पर्वत थे ।

---

4. विलोम शब्द :-

नियामित - अनियामित

विख्यात - कुख्यात

आरोही- अवरोही

निश्चित - अनिश्चित

सुंदर- असुंदर

---

5. उपसर्ग :

वास-सुवास, निवास

व्यवस्थित - अव्यवस्थित

कूल- प्रतिकूल , अनुकूल

गति- प्रगति , दुर्गति

रोहन- आरोहन

---

**Other important questions (100-200 words)**

- 1.) हिमालय की यात्रा में किन-किन मार्गदर्शकों ने बचेद्री पाल को सहयोग दिया?
- 2.) अंगदोरजी और ल्हाटू कौन थे ? इनमें से किसकी किस विशेषता ने आपको प्रभावित किया?
- 3.) एवरेस्ट की चोटी पर पहुंचकर बचेद्री पाल ने क्या किया ?
- 4.) प्लूम अर्थात् भारी बर्फ का बड़ा फूल कैसे बंता है ?
- 5) .तेनज़िंग से मिलने पर लेखिका ने अपना परिचय कैसे दिया और तेनज़िंग ने उनकी तारीफ में क्या कहा?
- 6) बेस कैम्प में बचेद्री की मुलाकात किससे हुई ? उसने लेखिका का उत्साहवर्धन कैसे किया ?
- 7) कैम्प तीन की घटना क्या थी ? उसका क्या प्रभाव पड़ा ?



## CLASS-IX-A, SCIENCE- CH-8 MOTION

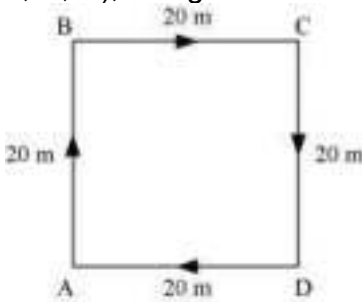
### SOLUTION BY SIR SUJIT

#### Page No 100:

**Question 1:** An object has moved through a distance. Can it have zero displacement? If yes, support your Ans: with an example.

**ANS:** Yes. An object that has moved through a distance can have zero displacement. Displacement is the shortest measurable distance between the initial and the final position of an object. An object which has covered a distance can have zero displacement, if it comes back to its starting point, i.e., the initial position.

Consider the following situation. A man is walking in a square park of length 20 m (as shown in the following figure). He starts walking from point A and after moving along all the corners of the park (point B, C, D), he again comes back to the same point, i.e., A.



In this case, the total distance covered by the man is  $20\text{ m} + 20\text{ m} + 20\text{ m} + 20\text{ m} = 80\text{ m}$ . However, his displacement is zero because the shortest distance between his initial and final position is zero.

**Question 2:** A farmer moves along the boundary of a square field of side 10 m in 40 s. What will be the magnitude of displacement of the farmer at the end of 2 minutes 20 seconds?

**ANS:** The farmer takes 40 s to cover  $4 \times 10 = 40\text{ m}$ .

In 2 min and 20 s (140 s), he will cover a distance  $= \frac{40}{40} \times 140 = 140\text{ m}$

Therefore, the farmer completes  $\frac{140}{40} = 3.5$  rounds (3 complete rounds and a half round) of the field in 2 min and 20 s.

That means, after 2 min 20 s, the farmer will be at the opposite end of the starting point.

Now, there can be two extreme cases.

**Case I:** Starting point is a corner point of the field.

In this case, the farmer will be at the diagonally opposite corner of the field after 2 min 20 s.

Therefore, the displacement will be equal to the diagonal of the field.

Hence, the displacement will be  $\sqrt{10^2 + 10^2} = 14.14\text{ m}$

**Case II:** Starting point is the middle point of any side of the field.

In this case the farmer will be at the middle point of the opposite side of the field after 2 min 20 s.

Therefore, the displacement will be equal to the side of the field, i.e., 10 m.

For any other starting point, the displacement will be between 14.1 m and 10 m.

### Question 3:

Which of the following is true for displacement?

(a) It cannot be zero.

(b) Its magnitude is greater than the distance travelled by the object.

**ANS:**(a) Not true: Displacement can become zero when the initial and final position of the object is the same.

(b) Not true: Displacement is the shortest measurable distance between the initial and final positions of an object. It cannot be greater than the magnitude of the distance travelled by an object. However, sometimes, it may be equal to the distance travelled by the object.

### Page No 102:

**Question 1:** Distinguish between speed and velocity.

**ANS:**

Speed	Velocity
Speed is the distance travelled by an object in a given interval of time. It does not have any direction.	Velocity is the displacement of an object in a given interval of time. It has a unique direction.
Speed is given by the relation: $\text{Speed} = \frac{\text{Distance travelled}}{\text{Time taken}}$	Velocity is given by the relation: $\text{Velocity} = \frac{\text{Displacement}}{\text{Time interval}}$
The speed of an object can never be negative. At the most, it can become zero. This is because distance travelled can never be negative.	The velocity of an object can be negative, positive, or equal to zero. This is because displacement can take any of these three values.

**Question 2:** Under what condition(s) is the magnitude of average velocity of an object equal to its average speed?

**ANS:**

$$\text{Average speed} = \frac{\text{Total distance covered}}{\text{Total time taken}}$$

$$\text{Average velocity} = \frac{\text{Displacement}}{\text{Total time taken}}$$

If the total distance covered by an object is the same as its displacement, then its average speed would be equal to its average velocity.

**Question 3:** What does the odometer of an automobile measure?

**ANS:** The odometer of an automobile measures the distance covered by an automobile.

**Question 4:** What does the path of an object look like when it is in uniform motion?

**ANS:** An object having uniform motion has a straight line path.

**Question 5:** During an experiment, a signal from a spaceship reached the ground station in five minutes. What was the distance of the spaceship from the ground station? The signal travels at the speed of light, that is,  $3 \times 10^8 \text{ m s}^{-1}$ .

**ANS:** Time taken by the signal to reach the ground station from the spaceship

$$= 5 \text{ min} = 5 \times 60 = 300 \text{ s}$$

$$\text{Speed of the signal} = 3 \times 10^8 \text{ m/s}$$

$$\text{Speed} = \frac{\text{Distance travelled}}{\text{Time taken}}$$

$$\therefore \text{Distance travelled} = \text{Speed} \times \text{Time taken} = 3 \times 10^8 \times 300 = 9 \times 10^{10} \text{ m}$$

Hence, the distance of the spaceship from the ground station is  $9 \times 10^{10} \text{ m}$ .

### Page No 103:

**Question 1:** When will you say a body is in (i) uniform acceleration? (ii) non-uniform acceleration?

**ANS:**

(i) A body is said to have uniform acceleration if it travels in a straight path in such a way that its velocity changes at a uniform rate, i.e., the velocity of a body increases or decreases by equal amounts in an equal interval of time.

(ii) A body is said to have non-uniform acceleration if it travels in a straight path in such a way that its velocity changes at a non-uniform rate, i.e., the velocity of a body increases or decreases in unequal amounts in an equal interval of time.

**Question 2:** A bus decreases its speed from  $80 \text{ km h}^{-1}$  to  $60 \text{ km h}^{-1}$  in 5 s. Find the acceleration of the bus.

**ANS:** Initial speed of the bus,  $u = 80 \text{ km/h}$   $= 80 \times \frac{5}{18} = 22.22 \text{ m/s}$

Final speed of the bus,  $v = 60 \text{ km/h}$   $= 60 \times \frac{5}{18} = 16.66 \text{ m/s}$

Time take to decrease the speed,  $t = 5 \text{ s}$

$$\text{Acceleration, } a = \frac{v-u}{t} = \frac{16.66-22.22}{5} = -1.112 \text{ m/s}^2$$

Here, the negative sign of acceleration indicates that the velocity of the car is decreasing.

**Question 3:** A train starting from a railway station and moving with uniform acceleration attains a speed  $40 \text{ km h}^{-1}$  in 10 minutes. Find its acceleration.

**ANS:** Initial velocity of the train,  $u = 0$  (since the train is initially at rest)

Final velocity of the train,  $v = 40 \text{ km/h}$   $= 40 \times \frac{5}{18} = 11.11 \text{ m/s}$

Time taken,  $t = 10 \text{ min} = 10 \times 60 = 600 \text{ s}$

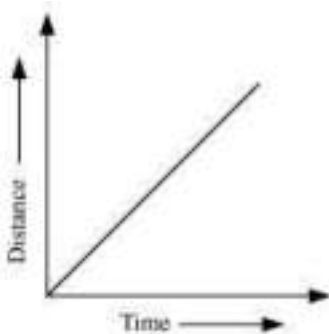
$$\text{Acceleration, } a = \frac{v-u}{t} = \frac{11.11-0}{600} = 0.0185 \text{ m/s}^2$$

Hence, the acceleration of the train is  $0.0185 \text{ m/s}^2$ .

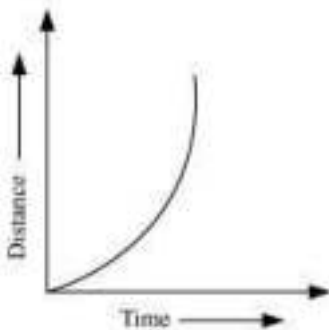
### Page No 107:

**Question 1:** What is the nature of the distance–time graphs for uniform and non-uniform motion of an object?

**ANS:** The distance–time graph for uniform motion of an object is a straight line (as shown in the following figure).



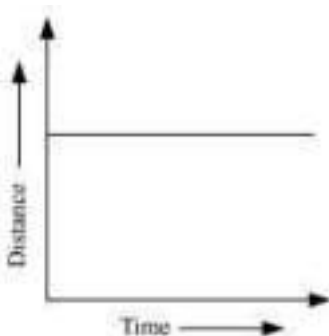
The distance–time graph for non-uniform motion of an object is a curved line (as shown in the given figure).



**Question 2:** What can you say about the motion of an object whose distance–time graph is a straight line parallel to the time axis?

**ANS:**

When an object is at rest, its distance–time graph is a straight line parallel to the time axis.

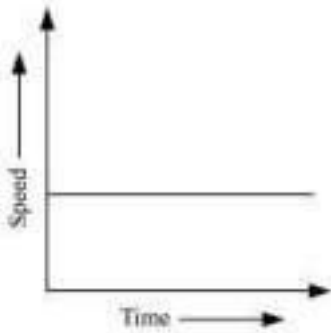




A straight line parallel to the x-axis in a distance–time graph indicates that with a change in time, there is no change in the position of the object. Thus, the object is at rest.

**Question 3:** What can you say about the motion of an object if its speed–time graph is a straight line parallel to the time axis?

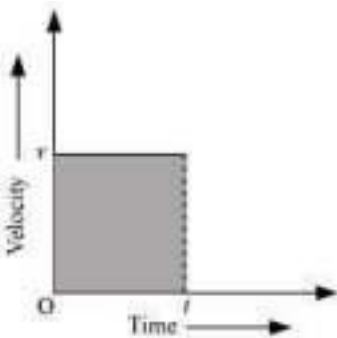
**ANS:** Object is moving uniformly.



A straight line parallel to the time axis in a speed–time graph indicates that with a change in time, there is no change in the speed of the object. This indicates the uniform motion of the object.

**Question 4:** What is the quantity which is measured by the area occupied below the velocity–time graph?

**ANS:** Distance



The graph shows the velocity–time graph of a uniformly moving body.

Let the velocity of the body at time ( $t$ ) be  $v$ .

Area of the shaded region = length  $\times$  breath

Where,

Length =  $t$

Breath =  $v$

Area =  $vt$  = velocity  $\times$  time ...( $i$ )

We know,

Velocity =  $\frac{\text{Displacement}}{\text{Time}}$     Velocity =  $\frac{\text{Displacement}}{\text{Time}}$

$\therefore$  Displacement = Velocity  $\times$  Time...( $ii$ )

From equations (i) and (ii),

Area = Displacement

Hence, the area occupied below the velocity–time graph measures the displacement covered by the body.

### Page No 109:

**Question 1:** A bus starting from rest moves with a uniform acceleration of  $0.1 \text{ m s}^{-2}$  for 2 minutes. Find (a) the speed acquired, (b) the distance travelled.

**ANS:**(a) 12 m/s (b) 720 m

(a) Initial speed of the bus,  $u = 0$  (since the bus is initially at rest)

Acceleration,  $a = 0.1 \text{ m/s}^2$

Time taken,  $t = 2 \text{ minutes} = 120 \text{ s}$

Let  $v$  be the final speed acquired by the bus.

$$\therefore a = \frac{v - u}{t}$$

$$0.1 = \frac{v - 0}{120}$$

$$\therefore v = 12 \text{ m/s}$$

(b) According to the third equation of motion:

$$v^2 - u^2 = 2as$$

Where,  $s$  is the distance covered by the bus

$$(12)^2 - (0)^2 = 2(0.1) s$$

$$s = 720 \text{ m}$$

Speed acquired by the bus is 12 m/s.

Distance travelled by the bus is 720 m.

**Question 2:** A train is travelling at a speed of  $90 \text{ km h}^{-1}$ . Brakes are applied so as to produce a uniform acceleration of  $-0.5 \text{ m s}^{-2}$ . Find how far the train will go before it is brought to rest.

**ANS:** Initial speed of the train,  $u = 90 \text{ km/h} = 25 \text{ m/s}$

Final speed of the train,  $v = 0$  (finally the train comes to rest)

Acceleration =  $-0.5 \text{ m s}^{-2}$

According to third equation of motion:

$$v^2 = u^2 + 2as$$

$$(0)^2 = (25)^2 + 2(-0.5) s$$

Where,  $s$  is the distance covered by the train

$$s = \frac{(25)^2}{2(0.5)} = 625 \text{ m}$$

The train will cover a distance of 625 m before it comes to rest.

**Question 3:** A trolley, while going down an inclined plane, has an acceleration of  $2 \text{ cm s}^{-2}$ . What will be its velocity 3 s after the start?

**ANS:** Initial velocity of the trolley,  $u = 0$  (since the trolley was initially at rest)

Acceleration,  $a = 2 \text{ cm s}^{-2} = 0.02 \text{ m/s}^2$

Time,  $t = 3 \text{ s}$

According to the first equation of motion:

$$v = u + at$$

Where,  $v$  is the velocity of the trolley after 3 s from start

$$v = 0 + 0.02 \times 3 = 0.06 \text{ m/s}$$

Hence, the velocity of the trolley after 3 s from start is 0.06 m/s.

**Question 4:** A racing car has a uniform acceleration of  $4 \text{ m s}^{-2}$ . What distance will it cover in 10 s after start?

**ANS:** Initial velocity of the racing car,  $u = 0$  (since the racing car is initially at rest)

Acceleration,  $a = 4 \text{ m/s}^2$

Time taken,  $t = 10 \text{ s}$

According to the second equation of motion:

$$s = ut + \frac{1}{2}at^2$$

Where,  $s$  is the distance covered by the racing car

$$s = 0 + \frac{1}{2} \times 4 \times (10)^2 = \frac{400}{2} = 200 \text{ m}$$

Hence, the distance covered by the racing car after 10 s from start is 200 m.

**Question 5:** A stone is thrown in a vertically upward direction with a velocity of  $5 \text{ m s}^{-1}$ . If the acceleration of the stone during its motion is  $10 \text{ m s}^{-2}$  in the downward direction, what will be the height attained by the stone and how much time will it take to reach there?

**ANS:** Initially, velocity of the stone,  $u = 5 \text{ m/s}$

Final velocity,  $v = 0$  (since the stone comes to rest when it reaches its maximum height)

Acceleration of the stone,  $a = \text{acceleration due to gravity, } g = 10 \text{ m/s}^2$

(in downward direction)

There will be a change in the sign of acceleration because the stone is being thrown upwards.

Acceleration,  $a = -10 \text{ m/s}^2$

Let  $s$  be the maximum height attained by the stone in time  $t$ .

According to the first equation of motion:

$$v = u + at$$

$$0 = 5 + (-10) t$$

$$\therefore t = \frac{-5}{-10} = 0.5 \text{ s}$$

According to the third equation of motion:

$$v^2 = u^2 + 2as$$

$$(0)^2 = (5)^2 + 2(-10) s$$

$$s = \frac{5^2}{20} = 1.25 \text{ m}$$

Hence, the stone attains a height of 1.25 m in 0.5 s.

### Page No 112:

**Question 1:** An athlete completes one round of a circular track of diameter 200 m in 40 s. What will be the distance covered and the displacement at the end of 2 minutes 20 s?

**ANS:** Diameter of a circular track,  $d = 200 \text{ m}$

$$\text{Radius of the track, } r = \frac{d}{2} = 100 \text{ m}$$

$$\text{Circumference} = 2\pi r = 2\pi (100) = 200\pi \text{ m}$$

In 40 s, the given athlete covers a distance of  $200\pi \text{ m}$ .

$$\text{In 1 s, the given athlete covers a distance} = \frac{200\pi}{40} \text{ m}$$

The athlete runs for 2 minutes 20 s = 140 s

$$\therefore \text{Total distance covered in } 140 \text{ s} = \frac{200 \times 22}{40 \times 7} \times 140 = 2200 \text{ m}$$

The athlete covers one round of the circular track in 40 s. This means that after every 40 s, the athlete comes back to his original position. Hence, in 140 s he had completed 3 rounds of the circular track and is taking the fourth round.

He takes 3 rounds in  $40 \times 3 = 120$  s. Thus, after 120 s his displacement is zero.

Then, the net displacement of the athlete is in 20 s only. In this interval of time, he moves at the opposite end of the initial position. Since displacement is equal to the shortest distance between the initial and final position of the athlete, displacement of the athlete will be equal to the diameter of the circular track.

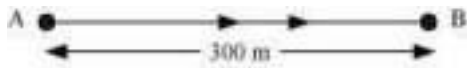
$\therefore$  Displacement of the athlete = 200 m

Distance covered by the athlete in 2 min 20 s is 2200 m and his displacement is 200 m.

**Question 2:** Joseph jogs from one end A to the other end B of a straight 300 m road in 2 minutes 30 seconds and then turns around and jogs 100 m back to point C in another 1 minute. What are Joseph's average speeds and velocities in jogging (a) from A to B and (b) from A to C?

**ANS:**(a) 2 m/s, 2 m/s (b) 1.90 m/s, 0.95 m/s

(a) From end A to end B



Distance covered by Joseph while jogging from A to B = 300 m

Time taken to cover that distance = 2 min 30 seconds = 150 s

$$\text{Average speed} = \frac{\text{Total distance covered}}{\text{Total time taken}}$$

Total distance covered = 300 m

Total time taken = 150 s

Average speed =  $\frac{300}{150} = 2$  m/s

$$\text{Average velocity} = \frac{\text{Displacement}}{\text{Time interval}}$$

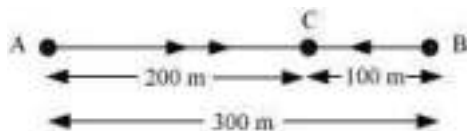
Displacement = shortest distance between A and B = 300 m

Time interval = 150 s

Average velocity =  $\frac{300}{150} = 2$  m/s

The average speed and average velocity of Joseph from A to B are the same and equal to 2 m/s.

(b) From end A to end C



$$\text{Average speed} = \frac{\text{Total distance covered}}{\text{Total time taken}}$$

Total distance covered = Distance from A to B + Distance from B to C

$$= 300 + 100 = 400 \text{ m}$$

Total time taken = Time taken to travel from A to B + Time taken to travel from B to C = 150 + 60 = 210 s

$$\text{Average speed} = \frac{400}{210} = 1.90 \text{ m/s}$$

$$\text{Average velocity} = \frac{\text{Displacement}}{\text{Time interval}}$$

Displacement from A to C = AC = AB - BC = 300 - 100 = 200 m

Time interval = time taken to travel from A to B + time taken to travel from B to C

$$= 150 + 60 = 210 \text{ s}$$

$$\text{Average velocity} = \frac{200}{210} = 0.95 \text{ m/s}$$

The average speed of Joseph from A to C is 1.90 m/s and his average velocity is 0.95 m/s.

**Question 3:** Abdul, while driving to school, computes the average speed for his trip to be 20 km h<sup>-1</sup>. On his return trip along the same route, there is less traffic and the average speed is 30 km h<sup>-1</sup>. What is the average speed for Abdul's trip?

**ANS: Case I:** While driving to school

Average speed of Abdul's trip = 20 km/h

$$\text{Average speed} = \frac{\text{Total distance}}{\text{Total time taken}}$$

Total distance = Distance travelled to reach school =  $d$

Let total time taken =  $t_1$

$$20 = \frac{d}{t_1}$$

$$t_1 = \frac{d}{20} \dots (i)$$

**Case II:** While returning from school

Total distance = Distance travelled while returning from school =  $d$

Now, total time taken =  $t_2$

$$30 = \frac{d}{t_2} \dots (ii)$$

$$\text{Average speed for Abdul's trip} = \frac{\text{Total distance covered in the trip}}{\text{Total time taken}}$$

Where,

Total distance covered in the trip =  $d + d = 2d$

Total time taken,  $t =$  Time taken to go to school + Time taken to return to school

$= t_1 + t_2$

$$\therefore \text{Average speed} = \frac{2d}{t_1 + t_2}$$

From equations (i) and (ii),

$$\text{Average Speed} = \frac{2d}{d/20 + d/30} = \frac{2d}{\frac{3d + 2d}{60}} = \frac{2d \times 60}{5d} = 24 \text{ km/h}$$

Hence, the average speed for Abdul's trip is 24 km/h.

**Question 4:** A motorboat starting from rest on a lake accelerates in a straight line at a constant rate of  $3.0 \text{ m s}^{-2}$  for  $8.0 \text{ s}$ . How far does the boat travel during this time?

**ANS:** Initial velocity,  $u = 0$  (since the motor boat is initially at rest)

Acceleration of the motorboat,  $a = 3 \text{ m/s}^2$

Time taken,  $t = 8 \text{ s}$

According to the second equation of motion:

$$s = ut + \frac{1}{2}at^2$$

Distance covered by the motorboat,  $s$

$$s = 0 + \frac{1}{2} \times 3 \times (8)^2 = 96 \text{ m}$$

Hence, the boat travels a distance of 96 m.

**Question 5:** A driver of a car travelling at  $52 \text{ km h}^{-1}$  applies the brakes and accelerates uniformly in the opposite direction. The car stops in  $5 \text{ s}$ . Another driver going at  $3 \text{ km h}^{-1}$  in another car applies his brakes slowly and stops in  $10 \text{ s}$ . On the same graph paper, plot the speed versus time graphs for the two cars. Which of the two cars travelled farther after the brakes were applied?

**ANS:** Case A:

Initial speed of the car,  $u_1 = 52 \text{ km/h} = 14.4 \text{ m/s}$

Time taken to stop the car,  $t_1 = 5 \text{ s}$

Final speed of the car becomes zero after  $5 \text{ s}$  of application of brakes.

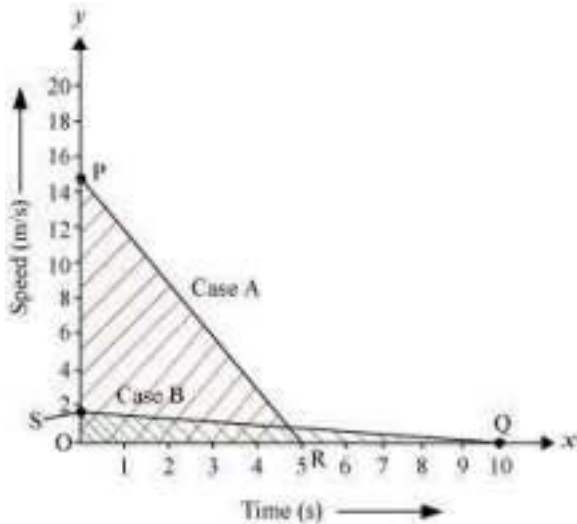
Case B:

Initial speed of the car,  $u_2 = 3 \text{ km/h} = 0.833 \text{ m/s} \cong 0.83 \text{ m/s}$

Time taken to stop the car,  $t_2 = 10 \text{ s}$

Final speed of the car becomes zero after 10 s of application of brakes.

Plot of the two cars on a speed–time graph is shown in the following figure:



Distance covered by each car is equal to the area under the speed–time graph.

Distance covered in case A,

$$s_1 = \frac{1}{2} \times OP \times OR = \frac{1}{2} \times 14.4 \times 5 = 36 \text{ m}$$

Distance covered in case B,

$$s_2 = \frac{1}{2} \times OS \times OQ = \frac{1}{2} \times 0.83 \times 10 = 4.15 \text{ m}$$

Area of  $\triangle OPR >$  Area of  $\triangle OSQ$

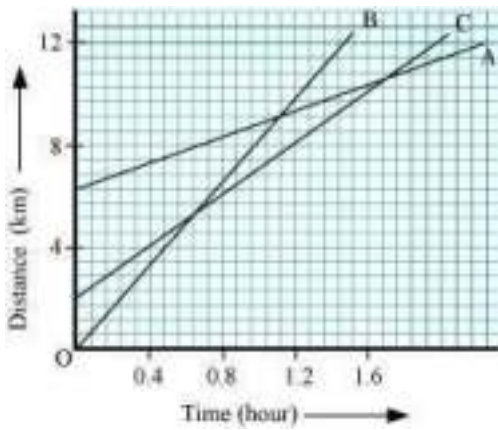
Thus, the distance covered in case A is greater than the distance covered in case B.

Hence, the car travelling with a speed of 52 km/h travels farther after brakes were applied.

**Question 6:**

Fig 8.11 shows the distance-time graph of three objects A, B and C. Study the graph and Ans: the following questions:

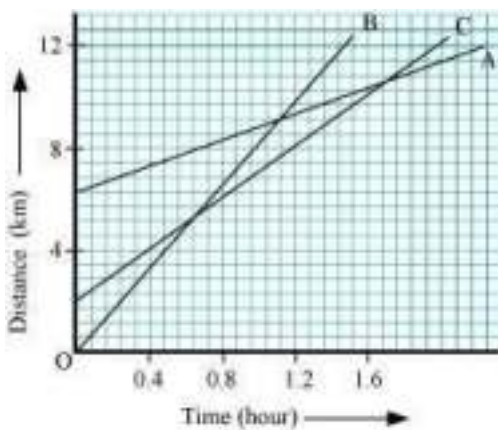




- (a) Which of the three is travelling the fastest?  
 (b) Are all three ever at the same point on the road?  
 (c) How far has C travelled when B passes A?  
 (d) How far has B travelled by the time it passes C?

**ANS:**

- (a) Object B (b) No (c) 5.714 km (d) 5.143 km



(a) 
$$\text{Speed} = \frac{\text{Distance}}{\text{Time}}$$

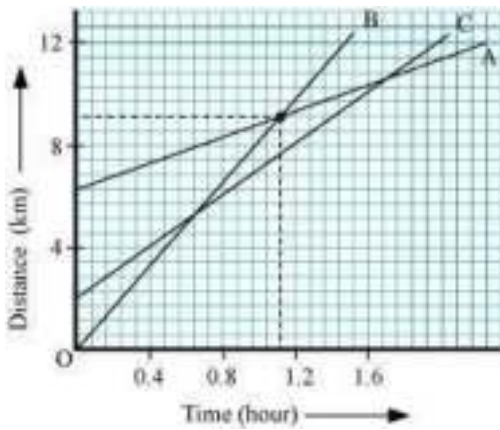
$$\text{Slope of graph} = \frac{y\text{-axis}}{x\text{-axis}} = \frac{\text{Distance}}{\text{Time}}$$

∴ Speed = slope of the graph

Since slope of object B is greater than objects A and C, it is travelling the fastest.

(b) All three objects A, B and C never meet at a single point. Thus, they were never at the same point on road.

(c)



On the distance axis:

7 small boxes = 4 km

$\therefore$  1 small box =  $\frac{4}{7}$  km

Initially, object C is 4 blocks away from the origin.

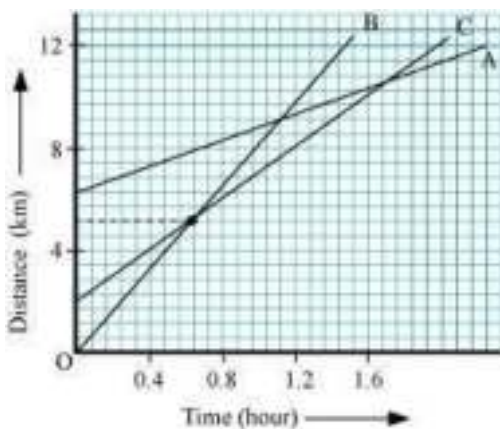
$\therefore$  Initial distance of object C from origin =  $\frac{16}{7}$  km

Distance of object C from origin when B passes A = 8 km

Distance covered by C =  $8 - \frac{16}{7} = \frac{56-16}{7} = \frac{40}{7} = 5.714$  km

Hence, C has travelled a distance of 5.714 km when B passes A.

(d)



Distance covered by B at the time it passes C = 9 boxes

$= \frac{4}{7} \times 9 = \frac{36}{7} = 5.143$  km

Hence, B has travelled a distance of 5.143 km when B passes A.

**Question 7:** A ball is gently dropped from a height of 20 m. If its velocity increases uniformly at the rate of  $10 \text{ m s}^{-2}$ , with what velocity will it strike the ground? After what time will it strike the ground?

**ANS:** Distance covered by the ball,  $s = 20 \text{ m}$

Acceleration,  $a = 10 \text{ m/s}^2$

Initially, velocity,  $u = 0$  (since the ball was initially at rest)

Final velocity of the ball with which it strikes the ground,  $v$

According to the third equation of motion:

$$v^2 = u^2 + 2as$$

$$v^2 = 0 + 2(10)(20)$$

$$v = 20 \text{ m/s}$$

According to the first equation of motion:

$$v = u + at$$

Where,

Time,  $t$  taken by the ball to strike the ground is,

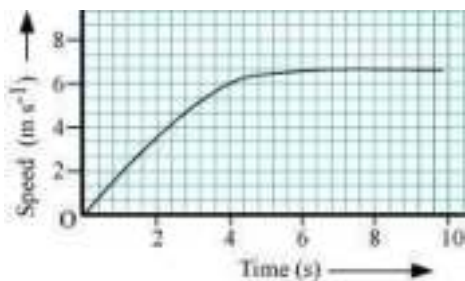
$$20 = 0 + 10(t)$$

$$t = 2 \text{ s}$$

Hence, the ball strikes the ground after 2 s with a velocity of 20 m/s.

**Question 8:**

The speed-time graph for a car is shown is Fig. 8.12.



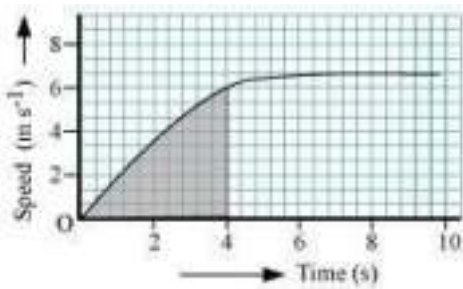
**Fig. 8.12**

(a) Find out how far the car travels in the first 4 seconds. Shade the area on the graph that represents the distance travelled by the car during the period.

(b) Which part of the graph represents uniform motion of the car?

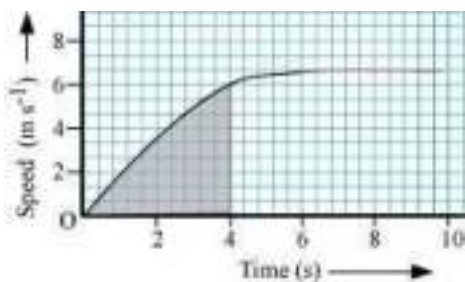
**ANS:**

(a)



The shaded area which is equal to  $\frac{1}{2} \times 4 \times 6 = 12 \text{ m}$  represents the distance travelled by the car in the first 4 s.

(b)



The part of the graph in red colour between time 6 s to 10 s represents uniform motion of the car.

#### Question 9:

State which of the following situations are possible and give an example for each of these:

- (a) an object with a constant acceleration but with zero velocity.  
 (b) an object moving in a certain direction with an acceleration in the perpendicular direction.

**ANS:**

(a) Possible

When a ball is thrown up at maximum height, it has zero velocity, although it will have constant acceleration due to gravity, which is equal to  $9.8 \text{ m/s}^2$ .

(b) Possible

When a car is moving in a circular track, its acceleration is perpendicular to its direction.

**Question 10:** An artificial satellite is moving in a circular orbit of radius 42250 km. Calculate its speed if it takes 24 hours to revolve around the earth.

**ANS:**

$$\text{Speed} = \frac{\text{Distance}}{\text{Time}} \quad \text{Distance} = 2\pi r = 2 \times 3.14 \times 42250 = 265330 \text{ km} \quad \text{Time} = 24 \text{ h} \quad \text{Speed} = \frac{265330}{24} = 11055.4 \text{ km/h}$$