

Class 12 Physical Activity Trainer

Part A (Employability Skills)

Section 1: Case Study Based Questions

Case Study 1: Communication Skills Scenario: A school sports captain sends a very short email to his team saying, "Practice tomorrow at 4." The next day, half the team arrives at 4:00 AM, and the other half arrives at 4:00 PM. Some went to the basketball court, while others went to the football field.

- **Q(a):** What was the main barrier to communication in this scenario?
 - **Answer:** The main barrier was an incomplete and ambiguous message. The sender lacked clarity.
- **Q(b):** How could the sports captain have made this communication effective?
 - **Answer:** He should have provided complete details: the exact time (e.g., 4:00 PM), the specific location (e.g., Main Football Field), and the objective of the practice.

Case Study 2: Self-Management Skills Scenario: Riya has her final board exams starting next week. She is feeling extremely overwhelmed, getting headaches, and is unable to sleep because she keeps thinking she will fail. She hasn't even made a study schedule yet.

- **Q(a):** What psychological condition is Riya experiencing right now?
 - **Answer:** Riya is experiencing high levels of exam-related **Stress and Anxiety**.
- **Q(b):** Suggest two self-management techniques she can use to overcome this situation.
 - **Answer:** (1) **Time Management:** She should break her syllabus down and create a realistic daily study timetable. (2) **Relaxation Techniques:** She can practice deep breathing, meditation, or take short walks to calm her mind.

Case Study 3: ICT Skills Scenario: A teacher creates an important Excel spreadsheet containing the final grades of all Class 12 students. He saves it on the school's shared computer without a password and leaves his account logged in while going for a tea break.

- **Q(a):** What digital security mistake did the teacher make?
 - **Answer:** He compromised data security by leaving his account logged in and saving sensitive information on a shared computer without setting up a document password.
- **Q(b):** Name any one basic method to protect digital data in such environments.
 - **Answer:** Always lock the computer screen or log out of the account when stepping away, and use strong passwords for sensitive files.

Case Study 4: Entrepreneurial Skills Scenario: Aman notices that many young children in his neighborhood are becoming obese due to a lack of physical activity. Instead of ignoring it, he

decides to start a weekend "Fun Fitness Boot Camp" in the local park. He charges a small monthly fee, buys some basic equipment, and starts marketing his camp on WhatsApp.

- **Q(a):** Which Employability Skill is Aman demonstrating in this scenario?
 - **Answer:** Aman is demonstrating **Entrepreneurial Skills**.
- **Q(b):** Mention any two entrepreneurial qualities shown by Aman.
 - **Answer:** (1) **Opportunity recognition:** He identified a problem (obesity in kids) and found a solution. (2) **Risk-taking & Initiative:** He invested his time and money to start a new venture from scratch.

Case Study 5: Green Skills Scenario: The school canteen uses hundreds of disposable plastic plates and cups every day, which end up in the local landfill. The student council decides to launch an initiative to replace all plastic items with biodegradable plates made from leaves (Pattal) and steel glasses.

- **Q(a):** The student council's initiative is an example of promoting which concept?
 - **Answer:** It is an example of promoting **Sustainable Development** and environmental conservation.
- **Q(b):** How does this change positively impact the environment?
 - **Answer:** It significantly reduces non-biodegradable plastic waste, prevents soil pollution, and lowers the carbon footprint of the school.

{Part B}

Section 2: (Unit 1) Case Study Based Questions

Case Study 1: The Grassroots Talent Scenario: Rohan belongs to a small village and is a very fast runner. His Physical Education teacher recognized his talent, but Rohan lacks the funds for proper training and good sports shoes. The teacher informed him about a Government of India scheme through which he can get a scholarship of ₹5 Lakh per year for 8 years.

- **Q(a):** Which government scheme did the teacher tell Rohan about?
 - **Answer:** Khelo India Programme.
- **Q(b):** What is the main objective of this scheme?
 - **Answer:** To identify sports talent at the grassroots level and provide them with financial support and training assistance.

Case Study 2: Future in the Sports Sector Scenario: Amit is very passionate about sports, but he suffered a severe injury that prevents him from becoming a professional athlete. He is disappointed, thinking that his career in the sports sector is completely over. His school counselor informed him that there are numerous excellent career options in the sports industry besides being an athlete.

- **Q(a):** Is Amit's career really over? Name any two emerging career options in the sports sector.
 - **Answer:** No, his career is not over. He can build a successful career in fields like Sports Management, Sports Data Analysis, or Sports Journalism.
- **Q(b):** What is the role of a 'Sports Psychologist'?
 - **Answer:** To help athletes become mentally strong, reduce performance-related stress, and improve their focus and concentration during competitions.

Case Study 3: Fit India Movement Application Scenario: A school principal noticed that most students sit in their classrooms playing mobile games during the lunch break. She decided to implement the guidelines of the 'Fit India Movement' in the school and assigned this responsibility to the school's Physical Activity Trainer (PAT).

- **Q(a):** In which year was the 'Fit India Movement' launched?
 - **Answer:** In the year 2019.
- **Q(b):** How can the PAT implement this campaign in the school? (State any two ways)
 - **Answer:** (1) By conducting 10 minutes of mandatory free-hand exercises during the morning assembly. (2) By organizing inter-class matches of traditional sports like Pitthu (Seven Stones) or Tug of War.

Case Study 4: Elite Athlete Support Scenario: Neeraj is a national-level Javelin Thrower. His ultimate dream is to win an Olympic medal. Looking at his consistent performance, the Sports Ministry has decided to provide him with foreign training facilities and a top-tier international coach.

- **Q(a):** Which Government of India scheme directly assists potential Olympic medal winners?
 - **Answer:** TOPS (Target Olympic Podium Scheme).
- **Q(b):** What facilities are provided to an athlete under the TOPS scheme?
 - **Answer:** World-class training, foreign coaches, customized sports equipment, and a monthly out-of-pocket financial allowance.

Case Study 5: Role of SAI (Sports Authority of India) Scenario: A state-level volleyball team requires advanced training for the upcoming National Championship. Their school lacks a synthetic court and a modern gymnasium. Therefore, they applied for a one-month training camp at a government-run sports complex.

- **Q(a):** Which apex body in India is responsible for managing national-level training camps and sports infrastructure?
 - **Answer:** SAI (Sports Authority of India).
- **Q(b):** What was the primary objective behind establishing SAI?
 - **Answer:** To promote and develop sports in India, identify sporting talent, and provide international-standard sports infrastructure and coaching facilities.

Case Study 6: Traditional Games vs Modern Games Scenario: On the school's Annual Sports Day, the PAT included traditional games like Mallakhamb and Kho-Kho alongside Athletics and

Basketball. A few students questioned why these traditional games were being played when they are not major Olympic events.

- **Q(a):** How will the PAT explain the importance of traditional games to the students?
 - **Answer:** Traditional games are an integral part of our cultural heritage. They require minimal equipment or financial cost and are highly effective in developing core fitness components like agility, balance, and flexibility, just like modern sports.
- **Q(b):** Write the names of any two traditional Indian games.
 - **Answer:** Kabaddi and Kalaripayattu.

Case Study 7: Role of a Physical Activity Trainer Scenario: Sumit has recently joined a fitness club as a Physical Activity Trainer. A new client approaches him who has no previous sports background and is highly overweight.

- **Q(a):** What should be Sumit's very first step as a professional trainer?
 - **Answer:** To conduct a thorough fitness assessment of the client and review their medical history.
- **Q(b):** Should Sumit make the client perform heavy weightlifting from the very first day? Give a reason.
 - **Answer:** No. Lifting heavy weights without building a foundational base can cause severe injuries. Training for a beginner should always start with light aerobic exercises and basic functional movements.

Case Study 8: Physical Education vs Sports Scenario: A Class 11 student asked his teacher, "Sir, if I am not in the school football team and I do not want to win any medals, why should I attend the Physical Education class?"

- **Q(a):** How will the teacher explain the fundamental difference between 'Physical Education' and 'Sports' to him?
 - **Answer:** The primary goal of 'Sports' is competition, high performance, and winning medals. On the other hand, the goal of 'Physical Education' is the holistic development (physical, mental, and social well-being) of every individual, ensuring they lead a healthy and active lifestyle throughout their lives, regardless of whether they compete or not.

(Unit 2): Case Study Based Questions

Case Study 1: Calculating and Understanding BMI Scenario: Rahul is a 17-year-old student. During the annual school health check-up, the Physical Activity Trainer recorded his weight as 75 kg and his height as 1.70 meters. The trainer advised Rahul to modify his diet and start regular aerobic exercises.

- **Q(a):** Calculate Rahul's Body Mass Index (BMI).
 - **Answer:** $BMI = \text{Weight (kg)} / \text{Height}^2 (\text{m}^2)$ $BMI = 75 / (1.70 \times 1.70)$ $BMI = 75 / 2.89 = 25.95$

- **Q(b):** Based on the WHO classification, in which BMI category does Rahul fall, and why did the trainer advise him to exercise?
 - **Answer:** Rahul falls into the '**Overweight**' category (BMI between 25.0 and 29.9). The trainer advised him to exercise to reduce his body fat percentage and prevent obesity-related health issues in the future.

Case Study 2: Selecting the Right Assessment Test Scenario: A school's basketball coach wants to select players for the upcoming regional tournament. He asks the PAT (Physical Activity Trainer) to identify the players who have the best lower-body explosive power and quick directional changing ability, as these are crucial for basketball.

- **Q(a):** Which test should the PAT conduct to measure the 'lower-body explosive power' of the players?
 - **Answer:** The PAT should conduct the **Standing Broad Jump** or **Vertical Jump Test**.
- **Q(b):** Which test is most appropriate to measure the 'agility' (quick directional changing ability) of the players?
 - **Answer:** The **Shuttle Run Test** (e.g., 4x10m shuttle run) or the **Illinois Agility Test**.

Case Study 3: Importance of Flexibility Scenario: Priya is an excellent sprinter, but she often complains of lower back pain and stiffness in the back of her thighs after a race. The PAT decides to assess her flexibility to find the root cause of the problem.

- **Q(a):** Which specific fitness test will the PAT use to assess the flexibility of Priya's lower back and hamstring muscles?
 - **Answer:** The **Sit and Reach Test**.
- **Q(b):** Why is flexibility an important component of physical fitness for an athlete like Priya?
 - **Answer:** Flexibility improves the range of motion (ROM) of joints, enhances athletic performance, and significantly reduces the risk of muscle cramps, strains, and lower back injuries during high-speed activities.

Case Study 4: Assessing Cardiovascular Endurance Scenario: A group of Class 12 students wants to join the National Cadet Corps (NCC) training program. The selection criteria require a high level of stamina and heart-lung efficiency. The NCC officer asks the school PAT to test the cardiovascular endurance of the applicants.

- **Q(a):** Suggest any one standard test that the PAT can use to assess the cardiovascular endurance of the students.
 - **Answer:** The **12-Minute Run/Walk Test (Cooper Test)** or the **Harvard Step Test**.
- **Q(b):** Briefly explain the objective of cardiovascular endurance tests.
 - **Answer:** The objective is to measure the efficiency of the heart, lungs, and blood vessels in delivering oxygen to the working muscles during prolonged physical activity.

Case Study 5: Pre-Assessment Protocol Scenario: Anuj, a newly appointed PAT, decides to conduct a rigorous 1-mile run test for Class 11 students on his first day. He takes them directly to the ground and asks them to sprint immediately without asking any questions or doing any preparatory activities. Two students felt dizzy and fainted during the run.

- **Q(a):** What crucial pre-assessment step did Anuj completely ignore before conducting the physical test?
 - **Answer:** Anuj ignored taking the **medical history/health screening** (e.g., PAR-Q form) of the students to identify any pre-existing health conditions like asthma or heart issues.
- **Q(b):** What physical activity must be performed by the students immediately before starting a rigorous fitness test?
 - **Answer:** A proper **Warm-up** routine (including light jogging and dynamic stretching) to prepare the body and prevent injuries.

Case Study 6: Evaluating Muscular Endurance Scenario: During a fitness drive, the PAT conducts the 'Push-up Test' for boys and the 'Modified Push-up Test' for girls. One student asks why they are doing this test and what exactly it measures.

- **Q(a):** What specific component of physical fitness does the Push-up test measure?
 - **Answer:** It measures the **muscular strength and muscular endurance** of the upper body (chest, shoulders, and triceps).
- **Q(b):** Why are 'Modified Push-ups' (knees resting on the floor) generally suggested for beginners or girls?
 - **Answer:** Because beginners or individuals with lower initial upper-body strength may find standard push-ups too difficult, and modified push-ups allow them to perform the movement with proper form and a reduced load.

(Unit 3): Case Study Based Questions

Case Study 1: Managing a Sprain Scenario: During a school basketball match, Raj jumped for a rebound and landed awkwardly on his opponent's foot. He immediately grabbed his right ankle, screaming in pain. The ankle started swelling rapidly. The PAT immediately asked him to stop playing and applied an ice pack.

- **Q(a):** Based on the symptoms (landing awkwardly, rapid swelling at the joint), what specific injury is Raj most likely suffering from?
 - **Answer:** Raj is most likely suffering from an **Ankle Sprain** (injury to the ligaments).
- **Q(b):** Which standard first-aid principle should the PAT apply to manage this injury? Briefly expand its acronym.
 - **Answer:** The PAT should apply the **R.I.C.E.** principle. It stands for Rest (stop playing), Ice (apply cold packs), Compression (wrap a crepe bandage), and Elevation (keep the ankle raised above heart level).

Case Study 2: Head Injury & Concussion Scenario: In a football tournament, two players clashed their heads in mid-air while trying to head the ball. One player fell to the ground, felt dizzy, and looked completely confused. He told the coach that he was seeing blurry lines. However, he insisted on going back to the field to finish the match.

- **Q(a):** What serious condition is the player exhibiting symptoms of?
 - **Answer:** The player is exhibiting symptoms of a **Concussion** (a mild traumatic brain injury).
- **Q(b):** Should the coach allow him to return to play? What is the standard protocol?
 - **Answer:** No, the coach must absolutely not allow him to return to play. The protocol dictates "When in doubt, sit them out." The player should immediately be examined by a medical professional.

Case Study 3: The Threat of Heat Exhaustion Scenario: It is the month of May (summer), and the school is organizing a cross-country race. After running for 3 kilometers, a student stops on the side of the track. He is sweating profusely, his face looks pale, and he complains of extreme weakness and nausea.

- **Q(a):** Identify the heat-related emergency the student is experiencing.
 - **Answer:** The student is experiencing **Heat Exhaustion**.
- **Q(b):** What immediate first-aid steps should the PAT take?
 - **Answer:** The PAT should immediately move the student to a cool, shaded area, loosen his tight clothing, and make him slowly sip cold water or an electrolyte drink (ORS).

Case Study 4: Dealing with a Suspected Fracture Scenario: A Class 8 student fell from the monkey bars in the playground. He is holding his forearm, which looks visibly deformed and is in excruciating pain. A teacher suggests that they should try to pull and straighten the arm to ease the pain.

- **Q(a):** What type of injury has the student most likely sustained?
 - **Answer:** A **Bone Fracture** (broken bone).
- **Q(b):** Is the teacher's suggestion correct? What is the correct first-aid management in this case?
 - **Answer:** No, the teacher's suggestion is completely wrong. One should never try to realign or straighten a deformed bone. The correct first-aid is to **immobilize** the arm using a splint or a sling and transport the student to a hospital immediately.

Case Study 5: Managing Nosebleeds (Epistaxis) Scenario: While playing cricket, the ball bounced unexpectedly and hit the batsman straight on the nose. His nose started bleeding heavily. His teammate told him to tilt his head backward as far as possible to stop the blood from coming out.

- **Q(a):** Is the teammate's advice to tilt the head backward correct? Give a reason.
 - **Answer:** No, tilting the head backward is incorrect because it can cause the blood to flow down the throat, leading to choking or vomiting.

- **Q(b):** What is the correct posture and first-aid for a nosebleed?
 - **Answer:** The correct posture is to sit upright and **lean slightly forward**. The victim should pinch the soft part of the nose continuously for 5 to 10 minutes and breathe through the mouth.

Case Study 6: Unresponsive Victim and CPR Scenario: A 50-year-old man collapses suddenly on the jogging track. The PAT runs towards him, taps his shoulders, and asks loudly, "Are you okay?" The man does not respond, and he is not breathing. The PAT asks a bystander to call an ambulance and immediately begins chest compressions.

- **Q(a):** What life-saving technique is the PAT performing?
 - **Answer:** The PAT is performing **CPR (Cardiopulmonary Resuscitation)**.
- **Q(b):** Why did the PAT tap the shoulders and shout before starting compressions?
 - **Answer:** To check for the victim's **responsiveness (consciousness)**. It is the crucial first step to ensure the person has actually collapsed and is not just sleeping or resting before starting CPR.

Case Study 7: Sprain vs. Strain Confusion Scenario: During a 100m sprint, a runner suddenly grabs the back of his thigh midway through the race and falls to the ground in pain. He says he felt a sudden "snap" in his muscle.

- **Q(a):** Which specific injury has the sprinter most likely suffered? (Sprain or Strain?)
 - **Answer:** He has suffered a **Muscle Strain** (specifically, a hamstring strain).
- **Q(b):** Write one basic difference between a Sprain and a Strain.
 - **Answer:** A **Sprain** is the stretching or tearing of *ligaments* (tissue connecting bone to bone, usually at joints), whereas a **Strain** is the stretching or tearing of *muscles or tendons* (tissue connecting muscle to bone)

(Unit 4): Case Study Based Questions

Case Study 1: The Outbreak of Skin Infections Scenario: A wrestling academy noticed that several of their wrestlers were suddenly suffering from ringworm and other fungal skin infections. Upon inspection, the head coach found that the wrestling mats were only being swept with a dry broom once a week, and athletes were not showering immediately after their bouts.

- **Q(a):** What is the main cause of the sudden outbreak of skin infections in the academy?
 - **Answer:** Poor hygiene practices, specifically not sanitizing the wrestling mats with disinfectants and the athletes' failure to shower immediately after heavy sweating.
- **Q(b):** Suggest two preventive measures the coach should enforce immediately.
 - **Answer:** (1) The mats must be wiped with a medical-grade disinfectant before and after every training session. (2) It must be mandatory for all wrestlers to shower and change into clean clothes immediately after practice.

Case Study 2: Indoor Court Ventilation Scenario: A school recently built a new indoor badminton facility. During a summer tournament, many players complained of suffocation,

excessive sweating, and extreme fatigue much earlier than usual. The PAT noticed that the exhaust fans were switched off, and all windows were tightly shut.

- **Q(a):** Why were the players feeling suffocated and fatigued so quickly?
 - **Answer:** Due to the lack of proper ventilation. Closed spaces with heavy physical activity lead to an accumulation of carbon dioxide, high humidity, and a lack of fresh oxygen.
- **Q(b):** What is the duty of the PAT in this scenario?
 - **Answer:** The PAT must ensure that the indoor facility is well-ventilated by turning on the exhaust fans and opening windows to allow the circulation of fresh air before allowing athletes to play.

Case Study 3: Hazard on the Field Scenario: While practicing for a 100m sprint, a runner stepped on a broken plastic bottle hidden in the grass on the school ground. He twisted his ankle and got a deep cut on his foot.

- **Q(a):** What aspect of play area management was severely neglected in this scenario?
 - **Answer:** Proper waste management and regular ground inspection (clearing the field of hazardous debris) were severely neglected.
- **Q(b):** What should be the daily routine of a PAT before starting any outdoor sports session?
 - **Answer:** The PAT must visually inspect the entire play area to ensure it is free from dangerous objects like glass, stones, plastic waste, or uneven holes.

Case Study 4: Hydration Hygiene Scenario: During a highly intense football match, the team had only one large water bottle on the sidelines. Whenever a player came out for a substitution, they drank directly from the same bottle, touching their lips to it. The next week, three players caught a viral throat infection.

- **Q(a):** Identify the unhygienic practice in this scenario.
 - **Answer:** Sharing a single water bottle and drinking directly from it (mouth-to-bottle contact) is a highly unhygienic practice.
- **Q(b):** How can this situation be rectified for future matches?
 - **Answer:** Every athlete should be instructed to bring their own personalized water bottle. If a team cooler is used, players must use disposable cups or a squirt bottle without touching it to their lips.

Case Study 5: Foot Hygiene (Athlete's Foot) Scenario: Manish, a fast bowler, practices for 4 hours every day. He has a habit of leaving his wet, sweaty socks inside his sports shoes after practice and wearing the exact same unwashed socks the next day. Recently, he developed severe itching, redness, and peeling skin between his toes.

- **Q(a):** What specific medical condition is Manish most likely suffering from?
 - **Answer:** He is most likely suffering from a fungal infection known as '**Athlete's Foot**' (Tinea Pedis).
- **Q(b):** What hygiene advice should the PAT give him to cure and prevent this?

- **Answer:** The PAT should advise him to wash and dry his feet thoroughly after practice, always wear fresh cotton socks, and leave his sports shoes in an open area to air dry completely before wearing them again.

Case Study 6: Timing of Cleaning Scenario: An indoor basketball session was going on. In the middle of the intense practice, the school's cleaning staff entered the court and started sweeping the wooden floor with dry brooms. A cloud of dust rose into the air, causing several players to start coughing and sneezing.

- **Q(a):** Why was the cleaning staff's action inappropriate?
 - **Answer:** Sweeping with a dry broom while athletes are breathing heavily pushes harmful dust particles and allergens into the air, which can enter the respiratory system and cause breathing issues or asthma attacks.
- **Q(b):** What is the correct protocol for cleaning indoor sports facilities?
 - **Answer:** Cleaning should be scheduled either well before the athletes arrive or after the session is completely over. Additionally, indoor courts should be cleaned using damp mops or vacuum cleaners to trap the dust, rather than dry brooms.