S2 Physical Education Practice Paper: Fitness and Health, Fitness Testing and Data, Athletics Techniques, Ball Games Skills and Rules, Safety and Injury Prevention, Nutrition Hydration and Training Plans (100 marks)

S2 | Physical Education | Time: 75 minutes | Total: 100 marks | 24 questions

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Section A Fitness and Health

Part A: 4 marks each, 16 marks in total.

1. Name the four health-related fitness components. [4]

Answer: Cardiorespiratory endurance, muscular strength and endurance, flexibility, and body composition.

2. What is the difference between cardiorespiratory endurance and muscular strength? Give one training example for each. [4]

Answer: Cardiorespiratory endurance is the ability of the heart and lungs to supply oxygen to muscles over time, e.g. distance running or skipping; muscular strength is the maximum force a muscle can produce once, e.g. weighted squats or pull-ups.

3. Why measure resting heart rate before exercise, and what may a high resting heart rate suggest? [4]

Answer: Resting heart rate gives a baseline for fitness and fatigue; if it is clearly higher than usual it may indicate fatigue, poor sleep, illness or incomplete recovery, so training intensity should be reduced.

4. Explain why poor flexibility increases the risk of injury. [4]

Answer: Limited flexibility restricts joint range of motion, so muscles and tendons are easily overstretched, and compensating movements load other parts incorrectly, raising the risk of strains and sprains.

Section B Fitness Testing and Data

Part B: 4 marks each, 16 marks in total.

5. An S2 student weighs 48 kg and is 1.5 m tall. Calculate the BMI (1 decimal place) and state which range it falls into. [4]

Answer: BMI = 48 / (1.5 x 1.5) = 48 / 2.25 = 21.3, which is in the normal range (18.5-22.9).

6. A 13-year-old student trains at 60% to 80% of maximum heart rate. Given maximum heart rate = 220 - age, find the training heart rate range. [4]

Answer: Maximum heart rate = 220 - 13 = 207 beats per minute; lower limit = 207 x 0.6 = 124, upper limit = 207 x 0.8 = 165, i.e. about 124 to 165 beats per minute.

7. A student runs 100 m in 14 seconds. Find the average speed in m/s (2 decimal places). [4]

Answer: Average speed = 100 / 14 = 7.14 m/s.

8. Why should fitness test results be recorded and compared over several tests instead of judging from one result? [4]

Answer: A single result is affected by warm-up, sleep, weather and motivation, so it carries large error; repeated records show the trend, tell whether training works and allow the training load to be adjusted.

Section C Athletics Techniques

Part C: 4 marks each, 16 marks in total.

9. In the crouch start of a sprint, what two points should be observed after the start signal? [4]

Answer: Push hard off the blocks at once and keep the body low rather than standing up immediately; drive the arms vigorously so they lead the legs, and run in a straight line.

10. When should the receiving runner start moving in a relay changeover, and why? [4]

Answer: The receiver should start moving when the incoming runner reaches the check mark, about 5-8 metres away, so both are moving at similar speed and time is not lost; the baton must be passed within the 20-metre changeover zone.

11. What are the four phases of the long jump? Briefly describe the key point of one phase. [4]

Answer: Approach run, take-off, flight and landing; for example in take-off the runner keeps speed into the board, drives the foot down and back quickly and swings the arms up to lift the body forward and upward.

12. Why is a pacing strategy more effective than an all-out sprint in middle-distance races such as 800 m? [4]

Answer: An all-out sprint causes lactate to build up quickly and heavy slowing in the later stages; an even pace with a faster final section uses energy more efficiently and usually gives a faster overall time.

Section D Ball Games Skills and Rules

Part D: 4 marks each, 16 marks in total.

13. In basketball, when is a player called for traveling? [4]

Answer: Moving more than two steps while holding the ball without dribbling, or shifting the feet beyond what the rules allow after ending the dribble, is traveling; the ball goes to the opponents for a throw-in.

14. In football, in what situation does the referee award a penalty kick? [4]

Answer: When a defender commits an offence inside their own penalty area, such as handling the ball, pushing or tripping, a penalty kick is awarded from the penalty mark while other players stay outside the area.

15. In volleyball, what is the role of each of the three touches: pass, set and attack? [4]

Answer: The first touch controls the incoming ball and lifts it to the net area; the set places the ball at a good height for the attacker; the attack sends the ball into the opponents court to win the rally.

16. A basketball game has 4 quarters of 8 minutes each. Find the total playing time in minutes, excluding overtime. [4]

Answer: Total time = 4 x 8 = 32 minutes.

Section E Safety and Injury Prevention

Part E: 4 marks each, 16 marks in total.

17. What two kinds of activity should a warm-up include? Give one example of each. [4]

Answer: General warm-up, e.g. five minutes of jogging to raise body temperature and heart rate, and specific warm-up, e.g. dynamic stretching and short accelerations for basketball; dynamic stretching should be included at the end.

18. What first-aid principles apply in the first 48 hours after an ankle sprain? List four. [4]

Answer: Protect, rest, ice (about 15-20 minutes at a time), compression and elevation; do not apply heat, massage the area or keep playing.

19. Why should exercise be shorter or less intense in hot weather? [4]

Answer: In hot and humid conditions sweat evaporates poorly, so heat loss is less efficient and body temperature and heart rate rise faster, which can lead to heat exhaustion (dizziness, nausea, cold clammy skin); thus reduce intensity and take more breaks with fluids.

20. What safety checks should be made on a sports venue and equipment? List three. [4]

Answer: Any three, e.g. the surface is free of water, sand and holes; equipment such as goal posts, hurdles and boxes is stable and undamaged; safe clearance from boundaries and obstacles; suitable protective gear; water stations available in hot weather.

Section F Nutrition Hydration and Training Plans

Part F: 5 marks each, 20 marks in total.

21. How should food and fluid be arranged before, during and after exercise? Give one recommendation for each. [5]

Answer: Two to three hours before, eat a carbohydrate-based low-fat low-fibre meal such as bread or a banana; during exercise drink small amounts every 15-20 minutes; within 30-60 minutes after, take carbohydrate with protein such as milk or a rice ball to aid recovery.

22. A student plans 4 exercises of 3 sets with 12 repetitions each. Find the total number of repetitions and explain why sets are used instead of one long effort. [5]

Answer: Total repetitions = 4 x 3 x 12 = 144. Sets allow the muscle to recover between efforts, keep the quality and technique of each repetition, and reduce the risk of injury and overtraining.

23. What is the principle of progressive overload? Illustrate with an example applied over two weeks. [5]

Answer: Progressive overload means gradually increasing training volume or intensity as the body adapts. For example run 2 km per session in week one and 2.5 km in week two, raising by no more than about ten per cent a week and including rest days for recovery.

24. Design a one-week training plan with three sessions, giving the content and duration of each, and explain how overtraining is avoided. [5]

Answer: Marking notes (3 marks for content, 2 marks for preventing overtraining): e.g. Monday 20 minutes of jogging plus 10 minutes of dynamic stretching; Wednesday 30 minutes of ball-game practice; Friday 20 minutes of circuit training with four exercises plus 10 minutes of static stretching. To avoid overtraining, leave at least one day between sessions for the same muscle groups, record resting heart rate and fatigue, and plan a lighter week every three to four weeks.
