

aced

Victorian Certificate of Education 2018

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STUDENT NUMBER

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Letter

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PHYSICAL EDUCATION

Written examination – Trial 1

2018

Reading time: 15 minutes
Writing time: 2 hours

QUESTION AND ANSWER BOOK

Structure of book

Section	Number of questions	Number of questions to be answered	Number of marks
A	15	15	15
B	12	12	105
Total 120			

- Students are permitted to bring into the assessment room: pens, pencils, highlighters, erasers, sharpeners and rulers.
- Students are NOT permitted to bring into the examination room: blank sheets of paper and/or white out liquid/tape.
- No calculator is allowed in this examination.

Materials supplied

- Question and answer booklet.
- Additional space is available at the end of the book if you need extra paper to complete an answer.

Instructions

- Write your **student number** in the space provided above on this page.
- All written responses must be in English.

At the end of the examination

- Place the answer sheet for multiple-choice questions inside the front cover of this book.

Students are NOT permitted to bring mobile phones and/or any other unauthorised electronic devices into the assessment room.

SECTION A – Multiple-choice questions**Instructions for Section A**

Answer **all** questions in pencil on the answer sheet provided for multiple-choice questions.

Choose the response that is **correct** or that **best answers** the question.

A correct answer scores 1, an incorrect answer score 0.

Marks will not be deducted for incorrect answers.

No marks will be given if more than one answer is completed for any question.

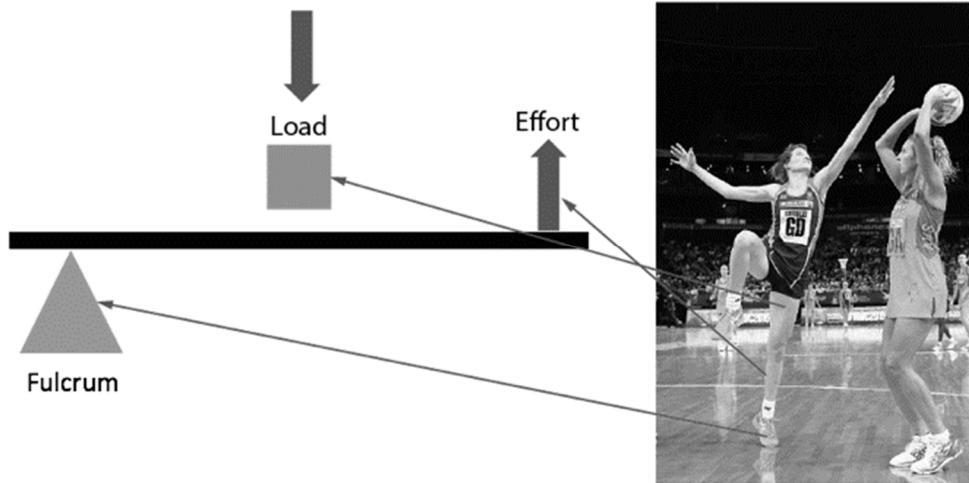
Question 1

Which energy substrate provides the most ATP production per gram?

- A. creatine phosphate
- B. triglycerides
- C. glycogen
- D. amino acids

Question 2

Which type of lever is shown in the picture below?



- A. 1st class
- B. 2nd class
- C. 3rd class
- D. A combination of A and C

Question 3

Identify the correct order of the steps of a qualitative analysis.

- A. observation, evaluation, error correction, preparation
- B. preparation, observation, error correction, evaluation
- C. observation, error correction, evaluation, preparation
- D. preparation, observation, evaluation, error correction

Question 4

Throwing a dart, kicking a ball and firing an arrow at a target all have a distinct beginning and end. These movements are examples of

- A. discrete skills.
- B. continuous skills.
- C. serial skills.
- D. gross skills.

Question 5

The inverted U curve relates to which two variables?

- A. wellbeing and performance
- B. arousal and performance
- C. imagery and performance
- D. concentration and performance

Question 6

Which list of chronic adaptations are all classified as cardiovascular adaptations?

- A. increased capillarisation, increased glycogen storage, increased stroke volume
- B. increased cardiac output, increased a-vo₂ difference, increased elasticity of the blood vessels
- C. cardiac hypertrophy, increased stroke volume, increased haemoglobin
- D. increased stroke volume, increased capillarisation of the muscle, increased a-vo₂ difference

Question 7

Which of the following is not a characteristic of an open skill?

- A. changing environment
- B. externally paced
- C. replication of skill
- D. adaption of skill required

Question 8

Newton's Law of Inertia states

- A. the rate of acceleration of a body is proportional to the force applied to it and in the direction in which the force is applied.
- B. force equals mass times acceleration.
- C. for every action, there is an equal and opposite reaction.
- D. an object will stay at rest or continue to travel in the same direction at a constant velocity unless acted on by another unbalanced force.



Source: <http://www.saca.com.au/news/cricket-australia-announces-modified-junior-formats/2017-04-04>

Question 9

The image above shows children using a plastic bat and wickets. These modifications are related to which type of movement constraint?

- A. task
- B. environment
- C. individual
- D. A and B

Question 10

The example of the increased success in the Women's Big Bash League is an example of which sociocultural influence on movement?

- A. local community
- B. cultural norms, traditions and beliefs
- C. socioeconomic status
- D. none of the above

Question 11

Which fitness component is the most relevant to the action shown in the image above?

- A. muscular power
- B. coordination
- C. flexibility
- D. muscular strength

Question 12

The advantages of concurrent feedback are that it

- A. can have an immediate impact on performance, enables the athlete to give their full attention to the coach, it allows the athlete to reflect on their own performance prior to receiving feedback.
- B. can have an immediate impact on performance, enables the athlete to give their full attention to the coach, the athlete does not have to wait until the designated time for feedback.
- C. can have an immediate impact on performance, it allows the athlete to reflect on their own performance prior to receiving feedback, the athlete does not have to wait until the designated time for feedback.
- D. can have an immediate impact on performance, the performer does not have to wait, no interruption to training intervals.

Question 13

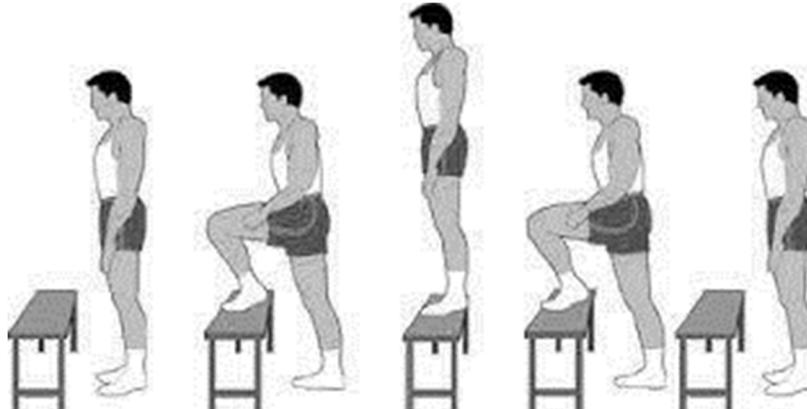
Which fuel is the body's preferred fuel during submaximal exercise?

- A. creatine phosphate
- B. carbohydrate
- C. triglycerides
- D. free fatty acids

Question 14

Which of the following is the most appropriate type of practice for a young golfer in the cognitive stage of learning?

- A. massed and blocked
- B. blocked and random
- C. distributed and serial
- D. deliberate play and massed

Question 15

Source: https://www.goconqr.com/p/4164617-components-of-fitness-flash_card_decks

The fitness test in the image above involves stepping up and down to a set cadence for five minutes. This test is aimed at measuring which fitness component?

- A. balance
- B. muscular endurance
- C. muscular power
- D. aerobic capacity

SECTION B – Short-answer questions**Instructions for Section B**

Answer all questions in the spaces provided.

Question 1 (6 marks)

- a. Describe what is meant by a-vO₂ difference.

1 mark

- b. What happens to the a-vO₂ difference during exercise? Outline the changes to the respiratory system, cardiovascular system and at the muscular level that cause this change. 5 marks

Question 2 (7 marks)

Tennis Hot Shots is a tennis program designed specifically to meet the needs of children. With the inclusion of smaller courts and modified equipment (e.g. lighter racquets and low-compression balls), it makes tennis fun and easy to learn for young children.

Participants are placed in groups with others their age. The modifications for each age group are shown in the table below.

<i>Features</i>	Blue Stage	Red Stage	Orange Stage	Green Stage
<i>Age</i>	3-5 years old	5-8 years old	8-10 years old	9+ years old
<i>Level</i>	Motor Skill Development	Beginner	Basic Tennis Skill Development	Development
<i>Equipment</i>	Small court, mini net, small racquet, low compression ball	Small court, mini net, small racquet, low compression ball	Half-court, small racquet, low compression ball	Full court, junior racquet, low compression ball
<i>Duration</i>	30 minutes	30 minutes	60 minutes	60 minutes
<i>Focus</i>	The program will help to stimulate motor skill development, build strength, balance and general coordination.	Introduction to tennis, body coordination, spacial awareness, group interaction, self-confidence, fun	Develop technique, ability to rally, body coordination, challenge & concentration, group interaction, self-confidence, fun	Consolidate technique and swing patterns, game strategy, develop physical skills, discover the game, rules and type of competition

Source: <http://www.tennisworld.net.au/play/coaching/anz-tennis-hot-shots/>

- a. Predict the stage of learning of the Tennis Hot Shots participants in the blue, red and orange groups. 1 mark
-
- b. Explain whether a direct or indirect approach to coaching would be most suited to the Tennis Hot Shots program. 2 marks
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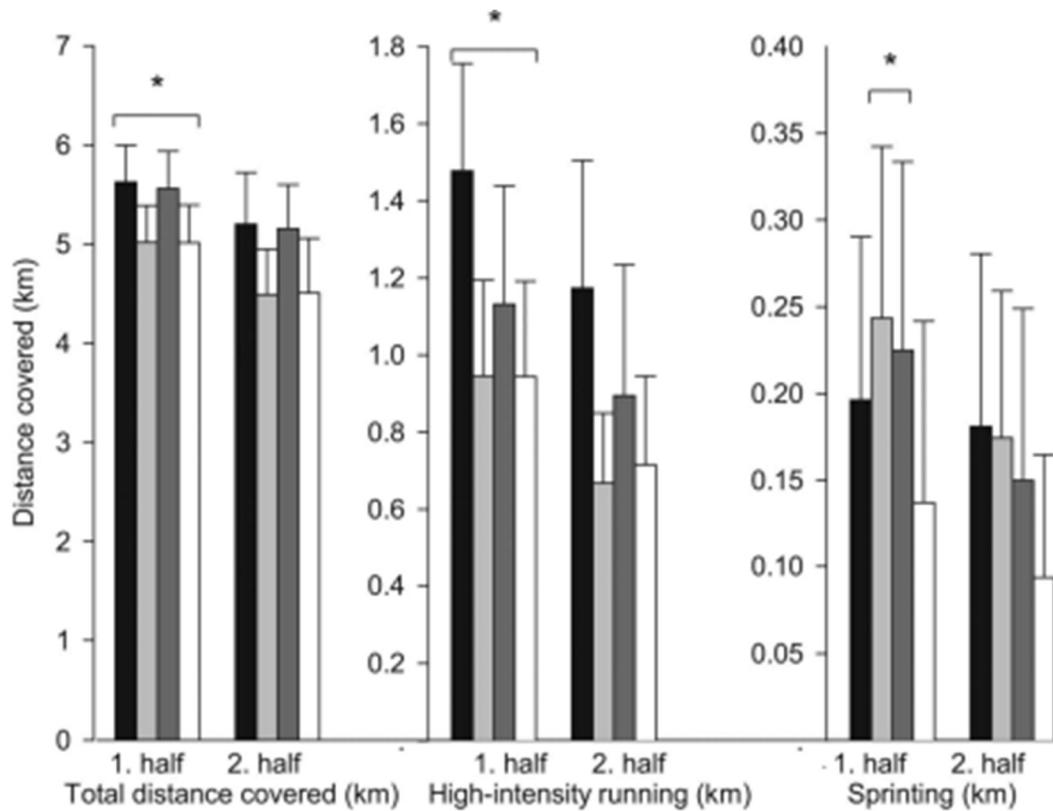
- c. Use the example of a child who participates in the Tennis Hot Shots program to explain the relationship between motor skill development, participation and performance. 2 marks

- d. Discuss two sociocultural factors that may influence the success of the Tennis Hot Shots program in a rural Victorian town. 2 marks

Question 3 (14 marks)

The data below is taken from a GPS data of performance analysis in soccer during a 90-minute game. It shows:

- the total distance covered in the first and second half,
- the distance covered using high intensity running, and
- the distance covered sprinting.



Source: Performance analysis in soccer: applications of player tracking technology

- a. Outline the purpose of conducting an activity analysis prior to developing a training program. 1 mark

- b. Use the data from the graph above to make a link to a major fitness component that is required in each of: 4 marks

- total distance covered
- sprinting
- high intensity running.

- c. For one of the fitness components named in 3b, identify the most suitable field fitness test for 1 mark the soccer players.
-

- d. The graph above is based on GPS data; identify another method of activity analysis that could 1 mark be used to measure the physiological demands of the game of soccer.
-

- e. Compare your answer in 3d to the use of GPS. 4 marks
-
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- f. Describe the trends across the first and second halves of the game from each of the three types 3 marks of data. Discuss the fatigue mechanisms that have played a role in any differences identified in the data.
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Question 4 (14 marks)

Movement skills such as striking, catching and throwing are important for performance in the sport of cricket. Fast bowling in cricket is an example of a serial skill. It involves the combination of running and the sport-specific skill of the bowling action. The bowler's objective is to bowl the ball at optimal speed and accuracy.

- a. Use examples from the movement of fast bowling in cricket to compare angular and linear motion. 4 marks

b.

1 mark



Source: http://i.dailymail.co.uk/i/pix/2013/11/12/article-2502693-195C001C00000578-89_634x415.jpg

Leading Biomechanists in Australia have studied the fast bowling action with the intention of preventing injuries and improving bowling performance. The image above shows a bowler whose technique is being captured by high speed cameras for the purpose of qualitative analysis.

What stage of qualitative analysis is shown in the image above?

- c. Consider the movement of the ball from the moment the ball leaves the bowler's hand to the completion of its movement. List two factors that determine the speed and accuracy of the ball. 2 marks

- d. Use the table below to identify two fitness components that are important for the performance of fast bowling in cricket and identify a training method that could be used to improve these two components. 6 marks

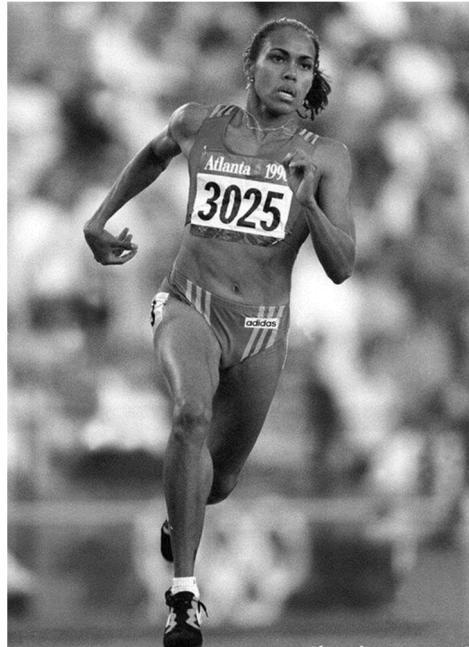
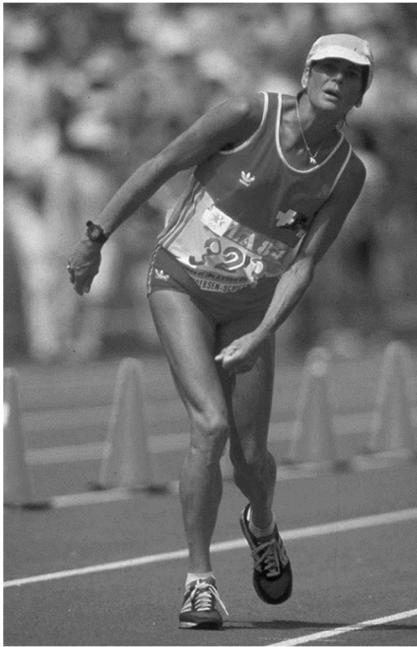
Fitness component	Link to performance	Training method

- e. Identify an appropriate fitness test for one of the fitness components listed in your answer to 4d. 1 mark

Question 5 (18 marks)

The picture below shows Gabriela Anderson-Scheiss (left) showing obvious signs of fatigue as she ran the final lap of the 1984 Olympic marathon. Anderson-Scheiss completed her final lap of the stadium in 5 minutes 44 seconds. Cathy Freeman's record time for the same lap was 48:63 seconds.

Cathy Freeman, an Australian 400 metre runner, still holds the current Australian record for the Women's 400 metres. She set the time of 48:63 in the final of the Women's 400 Metres at the Atlanta Olympics in 1996.



Source: <https://i.pinimg.com/originals/14/92/81/149281d8acc95ff5f58301d34537a90d7.jpg>
<http://www.sporting-heroes.net/content/thumbnails/00082/08104-zoom.jpg>

- a. What was the dominant energy system used in each of the marathon and the 400 metre sprint? 2 marks

- b. Compare the two energy systems that were identified in 5a. 4 marks

- c. Cathy's time was faster than Gabriela Anderson-Scheiss however, she could not sustain the same running speed for the whole 400 metres. 8 marks

Discuss two possible causes of fatigue for Gabriela Anderson-Scheiss. Identify a type of training that she could use and explain how the adaptations from that method of training would assist in reducing these causes of fatigue and therefore improve her performance.

- d. Compare the post event nutritional and rehydration recovery strategies that may be used by Gabriela Anderson-Scheiss and Cathy Freeman. 4 marks

Question 6 (11 marks)

- a. Place the training goals/adaptations listed below in the table beside the event that they are most relevant to. 4 marks

Glycogen sparing

Anaerobic capacity

LIP (Lactate Inflection Point)

Glycolytic capacity

Sport / Event	Training goals/Adaptations
Cricket fast bowler bowling a 10 over spell	
1500 metre speed skating (Olympic record: 1 minute 41 seconds)	
400 metre running race (World record 43.18 seconds)	
50km Freestyle cross country skiing (Expected completion time: 1 hour 45 minutes)	

- b. Identify a training method that could be used by the 1500 metre speed skater in the above table. 1 mark
-

- c. Outline how the adaptation that you identified in 6a for the 1500 metre speed skater would contribute to an increased performance. 2 marks
-
-
-
-
-

- d. Overtraining can result in a decline in performance. To avoid overtraining, it is important that an athlete monitors their training. Outline a strategy that can be used by the speed skater to monitor their training and track their physiological or psychological wellbeing. 2 marks

- e. Overtraining can be attributed to insufficient recovery or increasing the training volume or intensity too quickly. Describe a psychological strategy that could be used to enhance recovery from training and competition. 2 marks

Question 7 (8 marks)

A swimmer completes six repetitions of a 50 metre swimming pool in 40 seconds per lap (high intensity), with a two minute recovery between repetitions.

- a. What is the name given to this method of training? 1 mark
-

- b. What is the predominant energy system being trained by the swimmer? 1 mark
-

- c. Indicate in the table below how the athlete would apply the principle of overload in the *next* training session. 1 mark

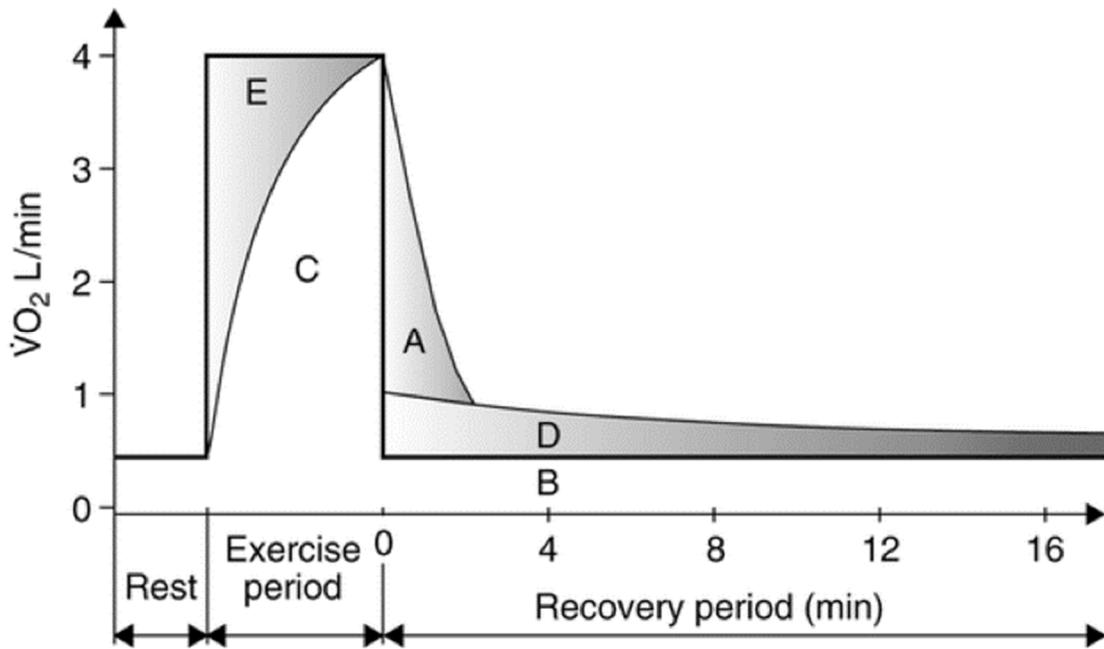
Session	Sets	Repetitions	Time of each rep	Recovery time
This session	1	6	40 seconds	2 minutes
Next session				

- d. Even though they are not specified in the table, identify the components of a typical training session, such as this. 3 marks
-
-
-

- e. Give one reason why the swimmer might also occasionally use running and cycling in training. 2 marks
-
-
-
-

Question 8 (4 marks)

The graph below shows oxygen consumption during exercise.



Source: <http://twynhamschoolalevelpe.weebly.com/uploads/2/2/6/6/22662982/8674784.png?575>

- a. Identify the area labelled E and A in the graph.

2 marks

E: _____

A: _____

- b. With reference to the graph, explain whether this graph would relate to high or low intensity activity.

2 marks

Question 9 (6 marks)

Discuss the relationship between heart rate, stroke volume and cardiac output for trained and untrained individuals during submaximal and maximal exercise.

Question 10 (6 marks)

- a. Outline the summation of force principle and provide an example of an action in a sport that is dependent on the summation of force for movement. 2 marks

- b. Identify two characteristics of the summation of force principle, and explain how they contribute to the outcome of the action identified in 10a. 4 marks

Question 11 (6 marks)

Source: <http://www.heraldsun.com.au/sport/basketball/dante-exum-and-216cm-thon-maker-headline-exciting-new-era-for-australian-basketball/news-story/52d7c12e4e4a7d9b08b89678ab51cb5>

- a. Identify the fitness component being tested in the picture above. 1 mark

- b. Explain two factors that affect performance in this fitness component. 2 marks

- c. Identify one standardised test that could be used to measure the fitness component identified in 11a. 1 mark

- d. Identify two steps that could be taken to maximise the reliability of the test identified in 11c. 2 marks

Question 12 (5 marks)

In the game of field hockey, the term ‘drive’ is used to explain a hard hit made with the swinging motion of the stick. It is typically used when the player wants to gain maximum distance with the hit.

- a. Define Newton’s second law of motion.

1 mark

- b. The generation of force influences the velocity of the ball and the distance of the drive in hockey. Use the relationship between force, mass and acceleration to discuss practical strategies that a player could use to increase the distance of their drive in hockey.

4 marks

Extra space for responses

Clearly number all responses in this space.



VCE PE – TRIAL 1
Written Examination
ANSWER SHEET – 2018

**STUDENT
NAME:**

Use a **PENCIL** for **ALL** entries. For each question, shade the box which indicates your answer.

Marks will **NOT** be deducted for incorrect answers.

NO MARK will be given if more than one answer is completed for any question.

If you make a mistake, **ERASE** the incorrect answer – **DO NOT** cross it out.

1	<input type="checkbox"/> A	<input type="checkbox"/> B	<input type="checkbox"/> C	<input type="checkbox"/> D
2	<input type="checkbox"/> A	<input type="checkbox"/> B	<input type="checkbox"/> C	<input type="checkbox"/> D
3	<input type="checkbox"/> A	<input type="checkbox"/> B	<input type="checkbox"/> C	<input type="checkbox"/> D
4	<input type="checkbox"/> A	<input type="checkbox"/> B	<input type="checkbox"/> C	<input type="checkbox"/> D
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