

**ADVANCED GCE
CRITICAL THINKING**

Unit 4: Critical Reasoning

MONDAY 21 JANUARY 2008

F494

Afternoon

Time: 1 hour 45 minutes

Additional materials (enclosed): None

Additional materials (required):

Answer Booklet (8 pages)

Answer Sheet

Resource Booklet



INSTRUCTIONS TO CANDIDATES

- Write your name in capital letters, your Centre Number and Candidate Number in the spaces provided on the Answer Booklet and Answer Sheet.
- Read each question carefully and make sure you know what you have to do before starting your answer.
- Answer **all** the questions.
- Section A contains multiple-choice questions which you should answer on the answer sheet provided.

INFORMATION FOR CANDIDATES

- The number of marks for each question is given in brackets [] at the end of each question or part question.
- You should spend no more than 40 minutes answering Section A.
- You will be awarded marks for the quality of your written communication in Section B.
- The total number of marks for this paper is **110**.

This document consists of **12** printed pages.

Section A: Multiple Choice

Answer **all** questions in this section of the paper.

You are advised to spend no more than 40 minutes on this section of the paper.

1 Which of the following is an argument?

- A A European Union Directive on animal experimentation was introduced in 1986. It now needs to be updated. There have been many changes in the scientific use of animals and in our understanding of animal welfare since then.
- B Britain must stand up to the anti-science brigade by defeating them with rational arguments. Young people who want to change the world should become scientists. We need scientists to dispel myths, calm our fears and make judgements based on facts.
- C People who build up businesses and take risks using their own money deserve to gain enormous sums of money. Many top executives get 98 times the pay of the ordinary employee even though they have not risked their own money. This is just greed.
- D The International Energy Agency recommends that global energy demand should be reduced by 10% by 2030 and global emissions of carbon dioxide should be 16% less by 2030. If governments want to achieve this, they need to invest heavily in improving the efficiency of vehicles, buildings and industry.

[1]

2 When children grow up on a housing estate where gang culture has taken hold, and where the adult residents have no organisation, gangs gain control. Young people have little choice. They either belong or they are seen as outsiders and do not come under the protection of the gang, which makes them vulnerable. To counter the violence of gang culture, children need to be given more choices. This means working with adults and children to create caring communities in which children are heard and trusted. Teaching youngsters about parenting and families has its place. But it takes a village to raise a child. If children do not experience what they are being taught, no outside agency can replace the caring community.

Which of the following best expresses the main conclusion of the passage?

- A Children and adults need to work together to create supportive communities.
- B Children more or less have to join gangs to ensure their survival.
- C Children need more options open to them if we are to end gang violence.
- D Children need to experience good parenting because it cannot be taught from outside.

[1]

- 3 'Teaching youngsters about parenting and families has its place.'

What is the function of this element in the structure of the argument in the passage in Q2?

- A Counter argument
- B Intermediate conclusion
- C Reason
- D Response to anticipated counter argument

[1]

- 4 The test for immigrants who wish to become British citizens includes questions such as: 'When did women get the same voting rights as men? How are judges appointed? How many states are there in the Commonwealth? What proportion of women in the UK work?' A third of candidates fail the test each time, even after learning information from the book, *Life in the United Kingdom: A Journey to Citizenship*. Most people who are born British do not know the answers to these questions.

Which of the following might justify the use of questions to determine who gains British citizenship, even though many British people do not know the answers?

- A Every British citizen should know such information because it is central to being British.
- B Many immigrants would know things about the Commonwealth that British people do not know because they come from these countries.
- C People from abroad may be put off settling in Britain by some of the knowledge they gain from learning for the test.
- D People from abroad need a higher level of specific knowledge to make up for their lack of absorbed, general cultural knowledge.

[1]

5 Commercial Vehicle Operations.

Year	Canadian Trucks returning to Canada (000's)	US Trucks entering Canada (000's)	Total Trucks entering Canada (000's)
1990	2,150	1,498	3,648
1991	2,046	1,545	3,591
1992	2,225	1,669	3,894
1993	2,570	1,795	4,365
1994	2,917	1,914	4,831
1995	3,218	1,940	5,158
1996	3,466	1,999	5,465

Source: Transport Canada, www.tc.gc.ca

Which of the following can reliably be concluded from the information in the table?

- (i) Trade between Canada and the US increased during this period.
- (ii) Canada exported more goods to the US than it imported from the US during this period.
- (iii) No trucks from countries other than Canada and the US entered Canada during this period.

- A (i) and (ii)
- B (i), (ii) and (iii)
- C (ii) only
- D (iii) only

[1]

6 'The increase in truck freight across the Canadian border led to an increase in carbon emissions.'

Which of the following cannot strengthen or weaken this claim?

- A Air freight decreased while road freight increased.
- B Domestic truck travel within Canada decreased during this period.
- C Old Canadian trucks were replaced with new trucks.
- D Technological changes have led to new trucks producing less pollution per mile.

[1]

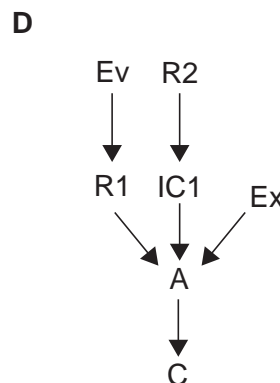
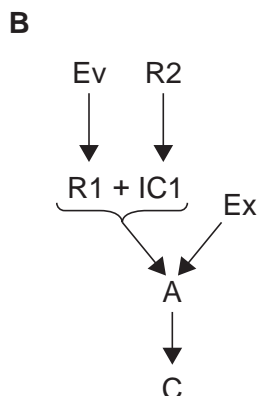
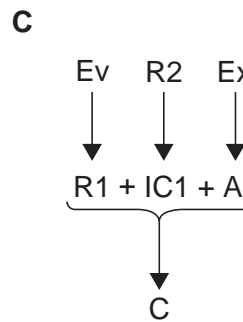
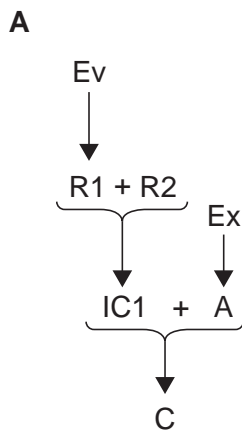
- 7 The future of gaming lies with surveillance robots, which are sent out into the real world, viewed and controlled remotely, and which interact with each other and us. People are already beginning to treat CCTV surveillance as an interactive game. The evidence for this is the increasing popularity of downloadable games which require players to control a number of virtual CCTV cameras and report crime. Robotic toys are becoming increasingly popular because they are increasingly interactive, sophisticated and game-like. There is already an unbelievably cool Japanese robot that can be controlled by wireless network and has a webcam so that you can see where it is going.

Which of the following best expresses an assumption which underlies the argument?

- A Combining robotic technology with surveillance is realistic and achievable.
 B Having a webcam is the same as surveillance.
 C Players who like controlling virtual CCTV cameras will like surveillance robots.
 D The existence of one robot with a web cam means that this will soon be a trend.

[1]

- 8 Which of the following diagrams best represents the structure of the argument in Q7?



Ev = Evidence
R = Reason
IC = Intermediate Conclusion
C = Conclusion
A = Assumption

- 9 Which of the following best expresses a weakness in the argument in Q7?
- A Many people may find watching CCTV very dull.
 - B Surveillance robots represent a nightmare of loss of privacy for many of us.
 - C The argument draws a general conclusion from a single example.
 - D The argument excludes other trends in gaming.
- [1]
- 10 Which of the following is a valid argument (one in which the conclusion must be true if the reasons are true)?
- A Dangerous stunts should not be shown on television. A television presenter's serious crash was shown on television. So he can't have been doing a dangerous stunt when he crashed.
 - B Only children take teddies to bed with them. You are taking a teddy to bed. You must be a child.
 - C You are allergic to wheat flour. You are eating a biscuit. So it must be a wheat-free biscuit.
 - D All the 'celebrities' on that game show are desperately seeking to improve their fading careers. Your career is fading. You should go on that game show.
- [1]
- 11 Which of the following is an argument?
- A Bond loves speedy gadgets, such as the mini jet in *Octopussy*, which fits inside a horsebox and flies at over 300mph. Some people, like Bond, constantly seek thrills because they have too much dopamine in their brains.
 - B In *Diamonds are Forever*, Q gives James Bond a set of false fingerprints to conceal his identity. Another far-fetched Bond gadget? No. Fake prints made out of common household ingredients can fool expensive biometric security systems which use fingerprints for identification. Researchers in Japan recently tricked one security system by using fake fingerprints from a gelatine mould.
 - C In *The World Is Not Enough*, Q gives Bond a pair of X-Ray sunglasses which allow Bond to discover concealed weapons and see ladies' underwear. However, X-ray technology requires people to stand still to create an image and fabric does not reflect X-rays.
 - D Q's robotic snooper pet in *A View To A Kill*, is operated by remote control and has cameras and microphones which send information to Q. Similar robots are used in disasters in the 21st century to look for survivors in rubble and wrecked buildings. Some of them even have baby robots inside them which they can spit out to investigate extremely small spaces.
- [1]

- 12** More and more women (and even some men) in their early twenties are paying hundreds of pounds for Botox treatment to prevent their skin from ageing, to conceal the first signs of wrinkles and remain beautiful. These people are not simply wasting their money. A study of identical twins in America indicates that Botox injections can work to delay ageing in young women. One twin was given regular Botox jabs for thirteen years and her sister received none. The twin who had been treated showed no visible signs of wrinkles when she wasn't smiling, frowning or squinting. The other twin showed normal signs of ageing. This is because lines and wrinkles are caused by the muscle movements when we smile, frown etc. and Botox stops these muscles working properly, so the skin is not being creased. It is easier to prevent wrinkles than to fix them, so these people will need less cosmetic surgery later in life.

'These people are not simply wasting their money.'

What is the function of this element in the structure of the argument?

- A** Evidence.
- B** Reason.
- C** Intermediate Conclusion.
- D** Main Conclusion.

[1]

- 13** Which of the following is **not** an assumption underlying the argument in the passage in Q12?

- A** Signs of ageing skin need to be treated.
- B** There were no significant differences between the twins' lifestyles apart from the Botox treatments.
- C** These people would age prematurely if they did not invest in Botox treatments.
- D** These people would need surgery only to correct signs of ageing, not to satisfy an inner anxiety about their appearance.

[1]

- 14** Which of the following, if true, would counter the argument in the passage about Botox in Q12?

- (i) Smoking, drinking, staying up late and sunbathing speed up ageing.
- (ii) An expressive smile is more beautiful than smooth skin.
- (iii) It is better to eat healthily and look after your skin than to rely on cosmetic treatments for your looks.

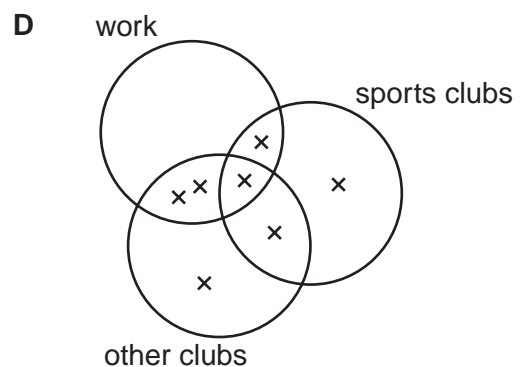
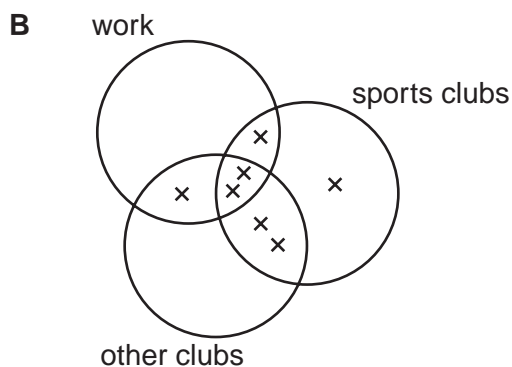
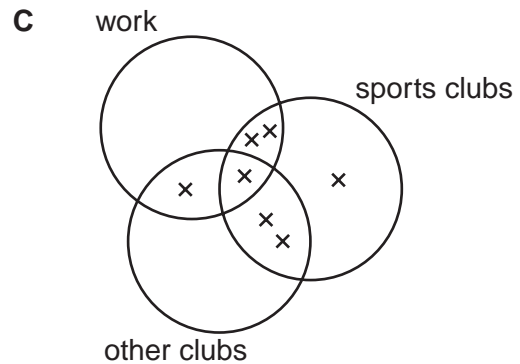
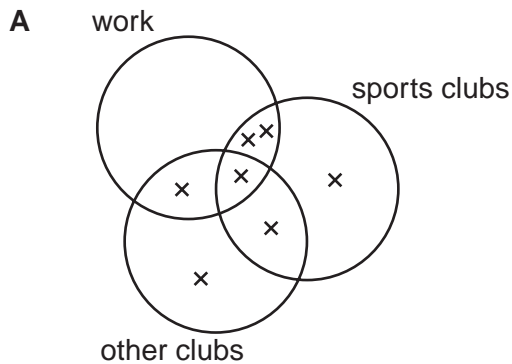
- A** (i) only
- B** (ii) only
- C** (i) and (iii)
- D** (ii) and (iii)

[1]

- 15 There is a group of seven friends. Each person belongs to two clubs. Each of the four girls works from 9–5 on either Saturday or Sunday. None of the boys has a job.

Name	Activities
Tamara (f)	Trampolining, Diving
Meera (f)	Volunteers, Computer Club
Kah Yin (f)	Band, Diving
Lauren (f)	Football, Trampolining
Peter (m)	Computer club, Football
Kamal (m)	Volunteers, Band
Zafar (m)	Football, Trampolining

Which of the following diagrams best represents the information about the friends' activities?



x = a person

[1]

16

Activity	Time of club meetings
Trampolining	Monday 6–8pm Wednesday 6–8pm
Diving	Tuesday 5–7pm
Football	Wednesday: matches in the afternoon Friday: training 5.30–6.30pm Saturday: training 10–12am
Circuit training	Monday 8–9pm Tuesday 8–9pm Wednesday 8–9pm Thursday 8–9pm
Band	Wednesday 7–9pm Gigs on Fridays and Saturdays from 8pm onwards
Volunteers	Thursday 7–9pm
Computer gaming	Friday 7–10pm

The group of friends from Q15 are trying to find an evening to go out together but it is proving difficult because they are all so busy. Everyone in a club must attend all meetings. In addition, everyone who does a sport must do circuit training twice a week. No one wants to go out on Sunday or after an activity which finishes after 7.30.

Which day would most people be able to go out?

- A Monday
- B Tuesday
- C Thursday
- D Friday

[1]

17 Which of the following can reliably be concluded from the information in questions 15 and 16?

- A It is not possible to be in the band and play football.
- B Lauren must work on Sundays.
- C None of the boys is ever busy with their clubs on Tuesdays.
- D Only Meera is free on Saturdays.

[1]

Refer to the following paragraph for questions **18**, **19** and **20**.

Even if only a tiny percentage of all the billions of stars have planets which can support life, that's still billions of planets. Therefore, we are told, it's pretty conclusive that life exists somewhere else in the universe. So where is it? If the chance of extra-terrestrial life in the universe is so overwhelming, isn't it surprising, on a fantastic scale, that absolutely no evidence exists of it? It just can't be there. When we look up at the night sky at all those billions of stars, we simply see a cold, uneventful and – apart from natural phenomena – dead universe. We've been listening for radio signals for decades now, desperately searching for anything that might give us a sign that life exists. But nothing. There are galaxies out there billions of light years away. If they harboured life, these life forms would be far advanced of anything we could ever comprehend. Surely, if there was extra-terrestrial life, when we look up at the night sky it should be teeming with life and activity. And they can't just be shielding themselves from us. If the chances of life were as abundant as the common theory suggests, there would be millions of different alien races out there, all at different levels of evolution. It's simply not plausible to believe that every one of them has decided to hide from us.

18 Which of the following is the main conclusion of the argument?

- A It's pretty conclusive that life exists somewhere else in the universe
- B It just can't be there.
- C If they harboured life, these life forms would be far advanced of anything we could ever comprehend.
- D It's simply not plausible to believe that every one of them has decided to hide from us.

[1]

19 Which of the following is **not** assumed by the argument in Q18?

- A Alien life forms have the technology for intergalactic travel.
- B Alien life forms would communicate in ways we could recognise.
- C Alien life forms would choose to communicate with us.
- D We would recognise alien life forms if we did come across them

[1]

20 'Aliens would have no problem observing us without interfering, just as we do with wildlife.' Does this comment effectively counter the argument in Q18?

- A No, because we cannot be sure it is true.
- B No, because we would notice 'little green men' watching us.
- C Yes, it demonstrates that evidence of UFOs may in fact be reliable.
- D Yes, it explains why we might have missed evidence of aliens.

[1]

Section B: Analysing and evaluating argument

Read the article, “Let’s reclaim the f-word”, and answer questions 21 to 25.

Analyse

- 21 Name and briefly explain the function of the following elements in the structure of Rake’s argument:
- (a) ‘It’s just as insulting as the slights of ‘noisy virago,’ and ‘shrieking sisterhood,’ hurled at women campaigning for women’s right to vote more than 100 years ago.’ (paragraph 1) [2]
 - (b) ‘It [feminism] is about much more than tinkering at the edges – and that feels threatening to a lot of people.’ (paragraph 4) [2]
 - (c) ‘More than 80% of MPs are men.’ (paragraph 5) [2]
 - (d) ‘To make it happen, we have to reclaim the f-word, show what we are really about and unite for change.’ (paragraph 9) [2]
- 22 Analyse in detail the structure of the argument in paragraph 2 by identifying reasons, intermediate conclusions etc. [9]

Evaluate

- 23 How effectively does Rake respond to ‘feminist-bashers’ and hostility to feminism in paragraphs 1–5? [18]

Support your evaluation by **selectively** referring to:

- flaws in the reasoning and their impact on the strength of the reasoning.
- assumptions which must be made and their impact on the reasoning.
- the effectiveness of the use of examples.
- how effectively reasons support intermediate conclusions.

- 24 A blogger responded to the article as follows:

Some women actually admire female pop stars who sell sex and men who are macho stereotypes. Not many men wish to belong to a movement of women who think they can tell everyone else who should clean their toilets. Rake is talking the usual sexist feminist rubbish along the lines of, ‘women never generalise, all men are rapists and we need to trample men to get them back for all that oppression.’

How effectively does this response counter Rake’s reasoning?

[12]

Develop your own reasoning

25 'Equality is an unattainable dream.'

Write your own argument to support or challenge this claim.

[18]

Total marks for Section B [65]

Copyright Acknowledgements:

Q.5 table Source: Transport Canada, www.tc.gc.ca
Q.11 text Adapted from Science of *James Bond*, Hot Topics, BBC, 18 November 2004, www.bbc.co.uk/science/hottopics
Q.18, 19 & 20 text Source: www.wearealoneintheuniverse.com

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