

## MARK SCHEME for the October/November 2008 question paper

### **9694 THINKING SKILLS**

**9694/04**

Paper 4 (Problem Solving and Critical Thinking (Advanced)),  
maximum raw mark 50

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began.

All Examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes must be read in conjunction with the question papers and the report on the examination.

- CIE will not enter into discussions or correspondence in connection with these mark schemes.

CIE is publishing the mark schemes for the October/November 2008 question papers for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level syllabuses and some Ordinary Level syllabuses.

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1 (a) Clearly stating how many of which firework(s) are required, and how much cost:

(i) What is the cheapest way of delivering the finale?

Stellar x 2 = \$120	30 secs	5*
Stellar + flashes x 2 = \$110	33 secs	4.3*
Stellar + rockets x 2 = \$100	31 secs	3.7*
Stellar + rocket + flash = \$105	32 secs	4*
Flash x 4 = \$100	36 secs	4*

1 mark for one of the four sub-optimal options given above  
2 marks for the correct answer: 4 flashes - \$100

[2]

(ii) What is the cheapest way of delivering the whole display (considering only requirements 1 and 2)?

Answer: 14 catherine wheels & 4 flashes & 1 rocket = \$820

Flashes x 4 = \$100    time = 36 seconds    WOW factor = 4  
Rocket x 1 = \$20  
Catherine wheels x 14 = \$700  
Total time = 560 + 36 + 8 = 604 seconds  
Total cost = \$820

3 marks for the correct solution (14 catherine wheels & 4 flashes & 1 rocket AND \$820)

If the 3 marks is not awarded:

- award 2 marks for EITHER 14 catherine wheels & 5 flashes & 1 rocket OR \$820

If the optimal solution is not given:

- award 2 marks for a solution which satisfies the first two requirements but is sub-optimal, and gives the cost.
- award 1 mark for a solution which satisfies the first two requirements but is sub-optimal, and does not correctly give the cost.    [3]

- (b) Investigate whether it is possible to satisfy all the requirements, show the attempts you make in the process. State clearly what combination of fireworks you propose.

1 mark for a proposed solution which includes at least one of each and lasts at least 600 seconds

1 mark for a proposed solution which fulfils the visibility criterion

1 mark for a proposed solution which involves 1 or 2 rockets and 1 stellar rocket

1 mark for a proposed solution which involves:

Wheels	X	Where $X < Y$ And $A \leq 2$ and $B \leq 4$
Fountains	Y	
Rockets	1	
Stellar Rockets	A	
Flashes	B	

Full marks for any solution within the budget. For example:

	Solution A	Solution B	Solution C	Solution D	Solution E	Solution F	Solution G
Wheels	7	8	8	8	8	8	9
Fountains	18	14	14	15	15	16	14
Rockets	1	1	2	1	2	1	1
Stellar Rockets	1	1	1	1	1	1	1
Flashes	1	4	3	2	1 or 2	1	1 or 2

[5]

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2 (a) Answer: 2 hours 50 minutes – award 2 marks.

If answer is wrong, award 1 mark for clear evidence of selection of 15:45 and 18:35 as relevant times.

Skill: Extract and process relevant data.

(b) Answer: 10 hours 10 minutes – award 2 marks.

If answer is wrong, award 1 mark for correct identification that Seattle is 9 hours behind Amsterdam.

OR an attempt to adjust both times to GMT.

Skill: Extract and process relevant data.

(c) Answer: Via Amsterdam and San Francisco. 22 hours 30 minutes – award 3 marks.

If 3 marks cannot be awarded:

- award 2 marks for via Amsterdam and San Francisco. 12 hours 30 minutes (which compares the flights correctly but fails to take account of time difference).
- award 1 mark for any other route together with the correct journey time for this route.

The other journey times are 23 hours, 23 hours 10 minutes, 31 hours 55 minutes, 32 hours 55 minutes and 24 hours 10 minutes respectively.

Skill: Analyse complex data and draw conclusions.

(d) (i) Answer: 19:20 Tuesday and 08:15 Wednesday – award 2 marks.

Deduct 1 mark for each missing or extra flight (minimum 0 marks).

Other flights do not operate on Wednesday, or get him to Honolulu too late.

(ii) Unless a candidate can produce a convincing argument for the 19:20 flight (which takes almost 33 hours and involves waiting at Amsterdam all night), award 1 mark for 08:15 because it is the shortest journey time and/or he can have a good night's sleep before departure and before the conference after his arrival in Honolulu.

If a candidate has given 06:05 Wednesday as an available departure time in (i) accept 06:05 with convincing reasoning.

Skill: Analyse complex data and draw conclusions.

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- 3 (a) Outline the structure of the argument in Document 1, identifying the real conclusion(s).

**Main conclusion:** We are now entrapped in a consumerist web: we need an 'about-turn' and this can be done only by a new ethic.

**Structure of Reasoning;**

R: Advertising makes a mockery of the claim that consumer society is expanding our freedom of choice.

R: The growth economy succeeds only by manipulating the consumer/reconstructing the human image.

C/A: Of course advertisers can ask what is wrong with persuasion: it goes on in a small way even in local markets. But (R) advertisers offer us gimmicks by persuasion.

IC1: Effectively the advertising industry turns us all into commodities.

R: People want to conform to the advertising image and so the ordinary condition of men and women become a matter of shame.

R: This is illustrated by the vast expansion of the cosmetic industry.

IC2: Advertising does not just sell us products, but the human image, packaged as power, sexuality and freedom.

IC3: The economy no longer exists to serve human needs, but human needs have to be distorted to serve the expanding market.

OR

Clearly we are now entrapped in a consumerist web

*Therefore* (IC 1-3):

C: We need an 'about-turn' and this can be done only by a new ethic.

**Marks**

Main conclusion + gist OR main conclusion + 1 i/c – 2

Main conclusion + 2 ICs or 1 IC + C/A – 3

Main conclusion + all the ICs or 2 ICs + C/A) – 4

Gist OR 1 i/c accompanied by an inappropriate conclusion – 1

2 i/c's or more accompanied by an inappropriate conclusion – 2

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(b) Examine Document 2.

- (i) Which one of the two complaints, A or B, would have been upheld by the ASA?

**Marks**

1 mark for correctly identified complaint i.e. 2nd complaint/complaint B [1]

- (ii) Which of the following CAP codes did HFL breach, with respect to the complaint you have identified in (i)?

- CAP 3.1 – Substantiation
- CAP 7.1 – Truthfulness
- CAP 9.1 – Fear and Distress

**Marks**

2 marks for CAP 3.1 and CAP 7.1 identified

1 mark if an incorrect judgment is made (either inappropriate inclusion of 9.1, or omission)

0 marks if two or more incorrect judgments are made [2]

- (iii) Identify two points of strength and/or weakness in HFL's reasoning, to support the answers you have given to (i) and (ii).

**Marks**

For each point of strength/weakness: 2 marks available; one for a basic or unclear statement; two for a more developed answer. The fifth mark is available for a particularly well-expressed/argued point [examples of these are given in the **Assumptions** section below].

Quotations from the text without any explanatory comments are awarded no marks.

If a candidate gets parts (i) and (ii) wrong, they can only score 4 marks on (iii). [5]

**Appendix to Marks for 3(b)(iii)**

(Much of this is only for the P/E or AE's information and can be concised at co-ord meeting – **the candidate need merely indicate the elements in bold below in answer to access the mark/s.** These are a range of possible answers for the examiner's consideration. The candidate is not expected to write at this length)

**Strength:** Detailed examination of the document will show that HFL **has carefully chosen legally authoritative documents** (MHRA, NHS and medical papers) to substantiate its meticulously detailed claim (appeal to authority & hard evidence). It can be seen that Chlorx could be used to treat allergic reactions caused by all the listed substances: food allergies (tomatoes, avocados, chilli, kiwi fruit and spices); insect bites (wasp stings, ants, mosquito bites); allergic rhinitis caused by squirrel fur, rats, tree and dust. Medical papers support that allergic skin disorders could be caused by the 14 substances listed in the ad. They **provided medical papers** also to show that sweat could cause allergic reactions and this too could be treated with the product. HFL has therefore substantiated that all the substances in the ad were capable of producing allergic reactions which could be treated with Chorx. **It has not therefore breached any of the CAP codes, (substantiation, honesty and truthfulness),** in regards to the **first complaint.** Even if some of the materials caused only irritation to some people, they are medically assessed to be capable of causing allergic reactions to others.

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#### Weaknesses/flaws:

- The text at the bottom of the ad states that the figures were extrapolated from a survey of 16-64 year olds – but this **does not unambiguously/plainly** show that some of those who thought they were allergy sufferers had not been **medically diagnosed**.
- HFL's figures are **based on a survey in which patients self-diagnosed their allergies rather than from the diagnoses of medical practitioners**. Therefore it may not be appropriate to use the results to estimate the number of peoples nationwide suffering from allergic reactions to the substances cited. It can be inferred that HFL has not substantiated the accuracy of the claimed numbers and has therefore breached the CAP codes, 3.1 and 7.1, with reference to substantiation and truthfulness.

#### Assumptions:

- There is an **assumption** that the questions were specifically designed to ensure respondents could not mistake allergic reactions for adverse reactions **whereas** some consumers may have special learning difficulties or language difficulties that make them **unable to read with the clarity needed**.
- There is an **assumption** that the symptoms of allergic reaction outlined are **unambiguous** whereas symptoms of soreness and pain could be **mistaken** for/ seen as synonymous to redness, swelling and tenderness.
- **Generalisation** that people often self-diagnosed for mild symptoms and treated themselves whereas no statistical evidence is given to support this.
- **Insufficient evidence** that consumer surveys were used to estimate the prevalence of diseases does not mean that they were correct.
- There is an **assumption** that there are no good research studies on the prevalence of allergic skin disorders.
- Not **sufficient** condition – it **does not follow from the absence of good research studies that consumer survey should be suitable to measure** actual numbers of allergy sufferers. Further the **vested interest** implicated of the marketer weakens this argument.

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- (c) **With critical reference to Documents 1-5 and examples from your own experience, discuss the causes of irresponsible advertising and propose a well-reasoned argument for or against greater regulation of the advertising industry.**

Credit will be given for the **judicious use of the resources in the documents.**

Very good responses will thoughtfully select and synthesise material throughout the documents to build a picture of the dangers of irresponsible advertising and trends in the public that encourage this.

Credit will be given **for the critical analysis and evaluation candidates apply to the sources:**

e.g. Attacking advertising for manipulating human beings (doc 1) should take account of doc 4 which examines consumer mentality and doc 2 which displays a fair deal of considered and largely responsible advertising. The ingenious marketing techniques of McDonalds and HFL could be matched by consumer astuteness in doc 5. Good evaluations would not fail to observe the significance of the statistical data in doc 3 in relation to doc 2.

Credit will be given for the **inferences candidates draw from the sources and from other examples or observations they bring to the debate.** The strategy outlined should be the conclusion drawn from or supported by a set of reasons. It should not be an exact re-statement or paraphrase of the CAP codes or other measures explicitly stated in the text. It can however offer the basis for further lines of reasoning.

To obtain mid-range (B grade) marks, a candidate should be able to identify the difficulties/hurdles in the way of establishing a standard policy of advertising in the global/free market world. Candidates may access higher mark bands where they have given penetrating responses which weighs the excesses of advertisers against consumer insatiability, when proposing a viable strategy.

Award + marks if candidate anticipates challenges to own strategy.

(They may use special knowledge gained in other subject areas as ethics, philosophy, economics, media studies etc. Credit, however, should be given not for the knowledge content but for the critical thinking skill/s of the argument).

Marks to be allocated to 3 bands as in specification sample (1-6, 7-12, and 13-18).

Middle band answers may accrete 1 to 2 marks for individual reasons which are cherry-picked from the sources; 2 to 3 marks for individual critical points/further argument.



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Band	Overall	Within	
Top	A critical stance: ideally <b>an evaluation of sources, and explicit consideration of counter-arguments</b> (or conflicting sources). Reference to at least 3	Candidates must introduce their own ideas and arguments. They must explicitly address counter-arguments.	18 17 16
		Occasional <b>explicit, significant</b> critical comments.	15 14 13
Middle	A reasoned stance: <b>a clear conclusion, supported by clearly expressed reasons cherry-picked from the sources. Some independent reasoning. Reference to at least 2 doc's.</b>	Cherry-picked reasons with implicit consideration of counter-arguments. Clear statement of 2/3 reasons in support.	12 11 10
		Cherry-picked reasons. Some irrelevance/deviation from the question. May be multiple conclusions with little support for each one. Elaborate further arguments with no reference to the sources.	09 08 07
Bottom	"Pub rhetoric" : <b>unclear conclusion, unclear reasoning (substantial irrelevant material)</b>	Reproduced reasoning from (a) and (b). Disorganised. Badly expressed further arguments with no reference to the sources.	06 05 04
		Stream of consciousness.	03 02 01

Candidates who consider whether the advertising needs regulation (rather than **more** regulation) can only achieve 12 marks or less.

Candidates who discuss the causes of advertising with little or no reference to regulation can only achieve 9 marks or less.