

MATRICULATION AND SECONDARY EDUCATION CERTIFICATE EXAMINATIONS BOARD
UNIVERSITY OF MALTA, MSIDA

MATRICULATION CERTIFICATE EXAMINATION
ADVANCED LEVEL
MAY 2012

SUBJECT: PHILOSOPHY
PAPER NUMBER: I
DATE: 21st May 2012
TIME: 4.00 p.m. to 7.00 p.m.

Directions to Candidates

Answer **THREE** questions in all, **ONE** from **EACH** section. Each question carries equal marks.

Section A: Logic

1. (a) In **not more than 10 lines**, explain what is meant by a *complete system of junctors*, giving an example of one such system.
- (b) Express the following propositions symbolically:
(*The dance studio Petra attends holds classes every day from Monday to Friday*).
- (i) Petra went to the studio on at least one day.
 - (ii) It is not the case that Petra went to the studio everyday.
 - (iii) Petra went to the studio on Wednesday if she did not go on Tuesday.
 - (iv) Petra went to the studio on Wednesday only if she did not go on Tuesday.
 - (v) Petra went to the studio either on Thursday or on Friday.
- (c) (i) Write down three propositions **W**, **X**, **Y** whose truth-tables are shown below, using only the elementary propositions **a**, **b** and **c**, and the junctors \neg , \wedge , \vee and brackets. (The first proposition **W** is **true** precisely when **b** is true and **a** and **c** are false, the second **X** is **true** precisely when **a** is true and **b** and **c** are false. Proposition **Y** is to be derived from the other two propositions **W** and **X**.)
- (ii) Proposition **Z** is **false** precisely when **a** and **c** are true and **b** is false and when **a** is false and **b** and **c** are true. Write down such a proposition **Z**.

a	b	c	W	X	Y	Z
T	T	T	F	F	F	T
T	T	F	F	F	F	T
T	F	T	F	F	F	F
T	F	F	F	T	T	T
F	T	T	F	F	F	F
F	T	F	T	F	T	T
F	F	T	F	F	F	T
F	F	F	F	F	F	T

- (d) (i) By translating symbolically and working out the truth-tables find out whether the two propositions below are logically equivalent:
- (I) If Max stayed at home and did his homework then he took a break.
 (II) If Max stayed at home then he took a break or he did not do his homework.
- (ii) The validity of which one of the following standard equivalences has been proved by the working out of the truth-table above?
- (I) contraposition $(a \wedge b) \rightarrow c \times (a \wedge \neg c) \rightarrow \neg b$
 (II) \vee is distributive over \rightarrow $a \vee (b \rightarrow c) \times (a \vee b) \rightarrow (a \vee c)$
 (III) \rightarrow is distributive over \vee $a \rightarrow (b \vee c) \times (a \rightarrow b) \vee (a \rightarrow c)$
 (IV) transportation $(a \wedge b) \rightarrow c \times a \rightarrow (c \vee \neg b)$
- (iii) Write down in words another proposition that may be derived from proposition d(i) (I) above and which is also logically equivalent to it by using a different standard equivalence to the one already used.
- (e) (i) What is meant by an **interpretation** of a formula?
 (ii) What is meant by a **model** of a formula?
 (iii) For each of the following formulae write down **one** interpretation which is a model.
 (I) $(a \leftrightarrow b) \vee \neg c$
 (II) $(a \rightarrow b) \wedge \neg (a \vee c)$
- (f) Fill in the blanks:
- (i) For $\neg (a \vee b)$ to be T, $a \vee b$ must be ___ and so a must be ___ and b must be ___ .
 (ii) For $\neg (a \wedge b)$ to be F, $a \wedge b$ must be ___ and so a must be ___ and b must be ___ .
 (iii) Therefore it cannot be the case that $\neg (a \vee b)$ is T and $\neg (a \wedge b)$ is F simultaneously as _____ .
 (iv) Therefore the implication $\neg (a \vee b) \rightarrow \neg (a \wedge b)$ is valid as _____ .
- (g) Write down a proposition constructed out of the elementary propositions **a** and **b** and the logical particles \neg and \rightarrow and whose truth-table is as follows.

a	b	a^*b
T	T	F
T	F	T
F	T	T
F	F	T

2. (a) Does the method of constructive logic consist in describing the way that words such as ‘and’, ‘or’ and ‘if... then’ are used in English? **Answer in not more than 10 lines.**
- (b) Rebecca has two hats, one red and one blue, which may fit into three boxes X, Y and Z. Express the following propositions symbolically:
- (i) No hat fits in box X.
 (ii) Unless both hats fit in box Y, they both fit in box X.
 (iii) It is not the case that the blue hat fits in all the boxes.
 (iv) At least one hat fits in all the boxes.

- (c) (i) Write down the truth-tables of the formulae: $a \vee b$, $a \wedge \neg a$, b , $a \vee \neg a$, $a \wedge b$ as underneath.

a	b	$a \vee b$	$a \wedge \neg a$	b	$a \vee \neg a$	$a \wedge b$
T	T					
T	F					
F	T					
F	F					

- (ii) Arrange the five formulae in order such that moving from left to right each formula would imply the next.
- (iii) What are the names given to formulae which have the truth-table of those placed first and last respectively in the answer to (c) (ii) above?
- (d) Fill in the blanks:
- (i) $A \wedge B$ _____ (commutativity of \wedge)
 - (ii) $A \wedge (B \wedge C) \times$ _____ (associativity of \wedge)
 - (iii) $A \wedge (B \wedge C) \times$ _____ (self-distributivity of \wedge)
 - (iv) $A \rightarrow B, _ <$ _____ (transitivity of \rightarrow)
 - (v) $A \rightarrow B, _ <$ _____ (Modus Ponens)
 - (vi) $A \rightarrow B, _ <$ _____ (Modus Tollens)
 - (vii) $A \rightarrow B \times$ _____ (contraposition)

- (e) The validity of the implication $(A \vee B) \vee B < A \vee B$ may be proved without truth-tables as follows:

$(A \vee B) \vee B < A \vee (B \vee B)$ (_____)
 $B \vee B \times B$ (idempotency of \vee)
 $A \vee (B \vee B) < A \vee B$ (partial replacement rule)
 So $(A \vee B) \vee B < A \vee B$ (_____ of $<$)
 Fill in the blanks with the reason for each step.

- (f) (i) Fill in the blanks: $A \wedge B <$ _____ (de Morgan)
- (ii) Prove the validity of the answer to (i) by showing that one cannot assign the value T to the premise and value F to the conclusion simultaneously.
- (iii) State the Duality Principle.
- (iv) Dualise the implication in (f)(i) above.
- (v) Use the Duality Principle to find out whether the answer to (iv) is valid.
- (g) F is a formula containing a and b as primary formulae such that $a \sqcup b \times (a \vee b) \wedge F$ is valid. Also F is not equivalent to $(a \sqcup b)$. Write down the **truth-table** of such a formula F.

Section B: Philosophy of Language

3. Discuss the nature of naturalism, conventionalism and the way these two can be combined.
4. David Cooper claims that an 'enquiry into the meaning of meaning should attend to what count as explanations of meaning'. Discuss.

Section C: History of Philosophy

5. How does Descartes move from doubt to certainty in the *Meditations*?
Uri kif Descartes johroġ mid-dubju u jasal għaċ-ċertezza fil-*Meditazzjonijiet*.
6. Write a short essay on any aspect of the philosophy of **either** John Locke **or** David Hume.
Ikteb essay qasir fuq xi aspett tal-filosofija ta' **jew** John Locke **jew** David Hume.

AM 25/II.12m

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SUBJECT:	PHILOSOPHY
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TIME:	4.00 p.m. to 7.00 p.m.

Answer **THREE** questions in all, **ONE** from **EACH** section. Each question carries equal marks.

Section A: Ethics

1. What is the relation between choice and the flourishing of a person's life?
2. Discuss the Existentialist concept of 'radical freedom'.

Section B: Selected Texts I (Classical and Modern)

3. Discuss Plato's distinction between the spoken and the written word in the *Phaedrus*.
4. Discuss Aristotle's analysis of virtuous action in the *Nicomachean Ethics*.
5. Outline Mill's account of the relationship between the individual and the state in *On Liberty*.

Section C: Selected Texts II (Contemporary)

6. Discuss Ryle's distinction between knowing how and knowing that.
7. Discuss Austin's distinction between performative and constative utterances.
8. Discuss Taylor's solution to the problem of individualism in *The Ethics of Authenticity*.
9. Discuss Gadamer's analysis of festivals in *The Relevance of the Beautiful and Other Essays*.