MATRICULATION AND SECONDARY EDUCATION CERTIFICATE EXAMINATIONS BOARD

UNIVERSITY OF MALTA, MSIDA

MATRICULATION EXAMINATION
INTERMEDIATE LEVEL
SEPTEMBER 2013

SUBJECT:	PHILOSOPHY
DATE:	6th September 2013
TIME:	4.00 p.m. to 7.00 p.m.

Directions to Candidates
Answer **THREE** questions in all, **ONE** from **EACH** section. Questions carry equal marks.

Section A: Logic

1. (a) Describe, in not more than 10 lines, how a complex proposition is composed.

   (b) Express the following propositions symbolically:
   (i) Iana goes to the gym on Monday or Thursday.
   (ii) If Iana goes to the gym on Monday, she does not go on Thursday.
   (iii) Iana goes to the gym on Monday only if she does not go on Thursday.
   (iv) Iana goes to the gym on Monday if and only if she goes on Thursday.

   (c) (i) Translate symbolically the following argument and, by using truth-tables, check whether the implication involved is valid.
   If Tessa passed her exam, Luke did too.
   Tessa passed her exam.
   Therefore Luke did too.
   (ii) Which standard application form is involved in the argument in (c) (i) above?

   (d) Fill in the blanks:
   (i) _____ $>< A \wedge B$ is valid (commutativity of $\wedge$).
   (ii) _____$>< A \vee (B \vee C)$ is valid (associativity of $\vee$).
   (iii) _____ $>< \neg A \vee \neg B$ is valid (de Morgan).
   (iv) _____,, $B < C =>$ _____ is admissible (transitivity of $<$).

   (e) (i) Complete the following implication:
   $A \vee (B \wedge C) <$ _____ (distributivity of $\vee$ over $\wedge$).
   (ii) State the duality principle.
   (iii) Dualise the implication in (e)(i) above.
   (iv) Use the duality principle only to find out whether the answer to (e)(iii) is valid.

   (f) (i) Write down the truth-tables of the formulae which correspond to:
   (I) x and y are either both false or both true.
   (II) if x is false then y is true and vice versa.
   (ii) For each of the truth-tables in (f)(i) above, write down a formula which contains only one junctor.
   (iii) What must be done to either one of the formulae in (f)(ii) above so that they will become equivalent to each other?

   (g) For each of the following formulae write down one interpretation which is a model:
   (i) $\neg(x \vee y)$
   (ii) $\neg x \vee \neg y$

2. (a) What is meant by saying that the implication A < B is valid?
   (b) Express the following propositions symbolically:
       (i)   Gail or Michael went to dancing classes.
       (ii) If Michael went to dancing classes, Gail went too.
       (iii) Both Gail and Michael went to dancing classes.
       (iv) It is not the case that neither Gail nor Michael went to dancing classes.

   (c) Refer to the following statement:
       If Alex is at the party then Berta and Lara are not.
       Identify:
       (i)   a nominator
       (ii) a junctor
       (iii) an elementary proposition
       (iv) a complex proposition

   (d) By means of truth-tables find out whether:
       (i) $\lor$ is commutative
       (ii) $\rightarrow$ is associative

   (e) (i) Fill in the blanks: $A \rightarrow (B \lor C) >< $ _____ ($\rightarrow$ is distributive over $\lor$)
                               $A \rightarrow (B \lor C) >< $ _____ (transportation)
       (ii) Use one of the above equivalences to simplify the proposition:
            If Tara has a holiday then she will play rugby, or if Tara has a holiday, she will play football.
            (An English sentence which does not contain logical symbols is expected.)

   (f) The truth-tables of the formulae W, X, Y, Z are given underneath.

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

       Arrange the four formulae in order such that moving from left to right each formula would imply the next.

   (g) Write down a **formula** constructed **only** out of the primary formulae a and b and the junctors $\neg$ and $\land$ and whose truth table is:

a	b	formula
T	T	F
T	F	T
F	T	F
F	F	F

Section B: Ethics

3. When, if at all, is the withholding or withdrawing of life-sustaining treatment morally justified?

4. Discuss the philosophical basis of our moral responsibilities towards future generations.

Section C: History of Philosophy

5. What distinguishes the works of the early Greek philosophers from those of the mythologists who precede them?

   X'jagħżel ix-xogħlijiet tal-filosfi Griegi bikrin minn dawk tal-mitoloġisti li ġew qabilhom?

6. What relation does Plato see between the just individual and a just society?

   X'rabta jara Platun bejn il-ġustizzja bħala virtù tal-individwu u l-ġustizzja bħala kwalità tas-socjetà?