THIS PAPER IS NOT TO BE REMOVED FROM THE EXAMINATION HALLS

UNIVERSITY OF LONDON **291 0319 ZA**

BSc Examination
for External Students

COMPUTING AND INFORMATION SYSTEMS AND CREATIVE COMPUTING

Decision Support and Executive Information Systems

Dateline: Tuesday 19 May 2009 : 2.30 – 4.45 pm

Duration: 2 hours 15 minutes

There are **FIVE** questions on this paper. Candidates should not attempt more than **THREE** questions. All questions carry equal marks and full marks can be obtained for complete answers to **THREE** questions.

A hand held calculator may be used when answering questions on this paper but it must not be pre-programmed or able to display graphics, texts or algebraic equations. The make and type of machine must be stated clearly on the front cover of the answer book.

Candidates are advised that their answer to all questions will be greatly strengthened by citing examples either of their personal experience or from written sources. Full referencing of sources is not necessary; an indication of nature of the source is all that is required.

1. Imagine that you have just graduated from University and that you are now looking for gainful employment.
Discuss the problems you might face in making a rational decision as to which jobs and which firms you should approach.
You must outline your arguments and conclusions according to Herbert Simon's theory of problem solving, explaining each step in the process and any inadequacies in the theory.

[25]

2. The following set of equations represents a market model for a particular product.

$Q_d = a + bP + cY_d + dW_t$	(demand sector)
$Qs = eP + fP_{t-1} + gC$	(supply sector)
$Y_d = h + i(Y - T)$	(disposable income)
$W_t = jW_{t-1} + (1-j)W_{t-2}$	(wealth sector)
Equilibrium price P is determined when $Q_d = Q_s$	(market equilibrium)

Q_d = consumer demand Qs = market supply
Y = consumer gross income Y_d = consumer disposable income
P = market price of product P_{t-1} = market price of product lagged by one time period
W_t = current wealth W_{t-1} = wealth lagged by one time period
W_{t-2} = wealth lagged by two time periods
T = total income tax C = cost of production inputs

a,b,c,d,e,f,g,h,i and j are fixed parameters.

(a) You are required to draw a METAGRAPH of the above five models according to the principles laid down by Robert Blanning.
Some marks will be awarded for neatness and clarity.

[17]

(b) Discuss the advantages of metagraphs as a modelling device and illustrate your arguments by using the metagraph obtained in part (a) of your answer.

[8]

3. A firm, that sells household goods, has 20 travelling salesmen operating in different parts of the country and are therefore very seldom at head office.
The firm wishes to install a Group Decision Support System (GDSS) to facilitate communication and decision-making between head office staff and the salesmen.

(a) Discuss the problems the firm would face in choosing the appropriate GDSS hardware and software to purchase.

[15]

(b) Outline any staffing problems that might arise in managing such a system.

[10]

4. Explain the relationship that exists between Artificial Intelligence (AI) and an Expert System (ES) and discuss how such a system may enhance the performance of a Decision Support System (DSS) Illustrate your answer with either a real or hypothetical decision support system.

[25]

5. The United Kingdom's Department of Education collects many statistics on the state of UK schools such as,

Number of schools
Number of students
Number of teachers
Number of students taking examinations
Number of successful students with different pass grades
Etc.,

Discuss the advantage of an Executive Information System (EIS), for assisting the Secretary of State for Education, to understand the status of UK education and to answer any parliamentary questions.
Introduce any statistics not listed above, which you think may be relevant.

[25]

END OF EXAMINATION