

PSYCHOLOGY 452 FINAL EXAM
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Part I: Choose any *TEN* of the following terms, and write a short (2-3 sentence) definition for each. The definition should indicate what the term means, and should also indicate why the term is important to or of interest to cognitive science. Remember, *ONLY 10 DEFINITIONS* are required. Each definition is marked out of 3 points.

Homeostat	Grey Walter's Tortoise	Coarse Coding
Bonini's Paradox	Nonlinearity	Emergent Phenomena
Law Of Uphill Analysis And Downhill Synthesis	Coarse Allocentric Coding	Goodness Of Fit
Production System	Jittered Density Plot	Definite Feature

Part II: Choose any one of the following questions, and write a short answer (3-4 pages) for it. Make sure that your answer is clear and concise, and also make sure that you deal with the question directly. Your answer will be marked out of 35 points.

1. In *Minds and Machines*, Dawson argues that modern connectionism can be viewed as providing a rich medium in which one can explore synthetic psychology. What are the general characteristics of the approach that Dawson advocates? How does his approach relate to other approaches that could be described as being synthetic? What are the potential advantages and disadvantages of Dawson's approach? Illustrate your answer with examples
2. One of the themes underlying Dawson's *Minds and Machines* is the potential conflict between approaches that focus on representation (or the absence of representation) versus approaches that focus on synthesis (or analysis) when studying psychological phenomena. Compare and contrast these two general views. Are they mutually exclusive? What are their implications in terms of carrying out synthetic psychology? Illustrate your answer with examples
3. One of the main research issues for connectionism, according to Dawson in *Minds and Machines*, is the interpretation of internal network structure. Provide an overview of the kinds of approaches that one might take to interpret some trained network of interest. What are the relative advantages and disadvantages of these approaches? Illustrate your answer with examples.