Perception of Musical Sounds

Mock Exam Paper

Autumn Term 2007

Time allowed: 2 hours

Answer two questions

Do not write on both sides of the paper at once
Attempt to stay awake during the exam

1. The ear is often described as acting like a bank of band-pass filters. Use this concept to describe what information the ear sends to the brain about a steady-state complex tone. Briefly comment on the non-linearities in the ear which violate the band-pass filter analogy.

2. How does the brain perceive the pitch of a complex tone? Pay particular attention to the distinction between resolved and unresolved harmonics.

3. What aspects of a sound contribute to its timbre? Illustrate your answer by considering the sounds both of speech and of musical instruments.

4. How do we localise a complex sound such as speech? How would these mechanisms be affected by either the presence of other sounds or by reverberation?

5. How do classical composers ensure that a particular voice in polyphonic music is heard appropriately?

6. What is "auditory scene analysis"?