

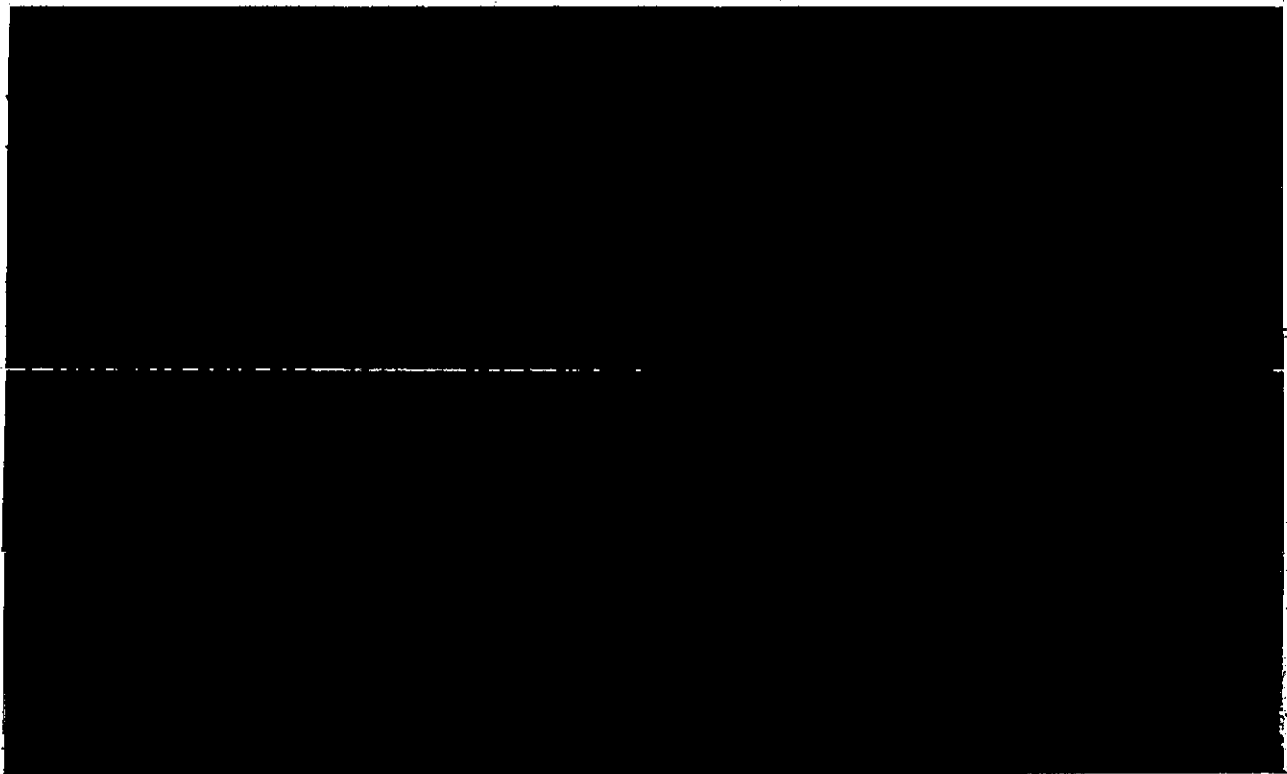
Auditory Psychology

Page 1 of 3

Note: Use only the specified answer sheets.

Question 1

The following descriptions are concerned with frequency selectivity in the auditory system. You should answer the following specific questions. You are allowed to draw figures for explanations, however, the main part of your answer should be logical explanations in English. The “...” parts signifies omitted parts from the original.



From Plack, C. J. (2018). *The Sense of Hearing (3rd Ed.)*, p. 100.

The underlined part under (A) says that masking experiments can be used to measure the frequency selectivity of the human auditory system.

Question (1) Describe a typical masking experiment in as much detail as possible. Do not use the example described in the text. (30 points)

Question (2) Give an example of the outcomes of the experiment that you answered to the above question by providing a graph. You have to indicate variables for both axes and describe the main features of the data. (20 points)

Auditory Psychology

Page 2 of 3

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Question II

Choose three out of the following six questions and answer. You are allowed to draw figures for explanations, however, the main part of your answer should be logical explanations in English. Specify the number of each question of your choice on the answer sheet. (90 points; 30 points for each question)

- (1) The auditory cortex is characterized by tonotopic organization. Explain what is tonotopic organization and where tonotopic organization originates.
- (2) Give one concrete example of how the Gestalt principle of *common fate* works in the perception of sound.
- (3) What factors are important for the perception of an integrated musical piece made by many different instruments in an orchestral performance?
- (4) Traditional telephone works as a bandpass filter with a frequency response of 300–3,400 Hz. This means that the fundamental frequency component in the voice is eliminated. Describe why we, nevertheless, understand the speech through a telephone line.
- (5) Describe types of hearing loss.
- (6) Why is Fourier analysis important for investigating auditory psychology?

Auditory Psychology

Page 3 of 3

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Question III

Choose six terms from the list of 10 terms below, and explain the meaning of the terms in several lines for each. You are allowed to draw figures for explanations, however, the main part of your answer should be logical explanations in English. Specify the term you choose at the beginning of each answer. (60 points; 10 points for each question)

- (1) phon
- (2) threshold
- (3) sound localization
- (4) Weber fraction
- (5) coarticulation
- (6) auditory filter
- (7) beats
- (8) independent variable
- (9) temporal fine structure
- (10) synapse