

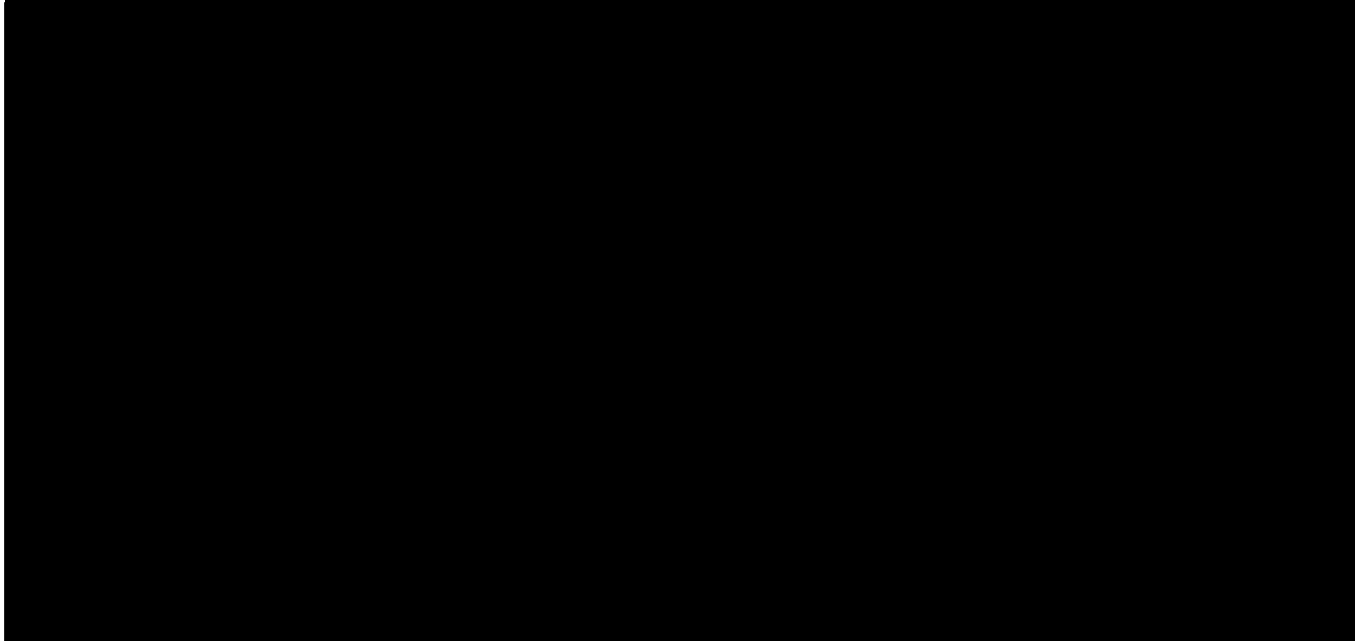
Auditory Psychology

Page 1 of 3

Note: Use only the specified answer sheets.

Question I

Read the following descriptions and answer the specific questions.



From Deutsch, D. (Ed.). (2013). *The Psychology of Music* (3rd ed.). Elsevier Academic Press.

- Question (1) The underlined sentence following A refers to a figure. Draw a figure showing equal loudness contours (at least three contours), including axes labels and contour labels. (25 points)
- Question (2) The underlined sentence following B refers to psychophysical measurements. Describe an experiment that can be performed to obtain equal loudness contours in as much detail as possible. (25 points)

Auditory Psychology

Page 2 of 3

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Question II

Choose three out of the following six questions and answer them. 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) When we try to localize a sound source, our hearing system can sometimes not discriminate between certain sound locations under specific conditions. Please describe and explain these conditions.
- (2) Under what acoustic conditions can we perceive sound A continuing through an interrupting sound B, even when sound A is physically discontinuous or not present during sound B? Assume no reverberation occurs.
- (3) Describe how it is known that nonlinearity exists in the auditory pathway. Limit to a non-invasive method.
- (4) Describe the workings of cochlear implants.
- (5) Shepard tones are often used recently in (film) music, and give a sense of unease or uncertainty to the listeners. How can we make Shepard tones and what can we hear when listening to Shepard tones?
- (6) Fletcher (1940) performed a so-called bandwidening experiment using bandpass noise. How did the experiment contribute to our understanding of the workings of the auditory peripheral system?

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) just noticeable difference (JND)
- (2) consonance and dissonance
- (3) turning curve of an auditory nerve fiber
- (4) voiced and unvoiced consonants
- (5) organ of Corti
- (6) voice onset time (VOT)
- (7) phase locking
- (8) auditory filter
- (9) Gestalt principle of similarity
- (10) meter

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Auditory Psychology

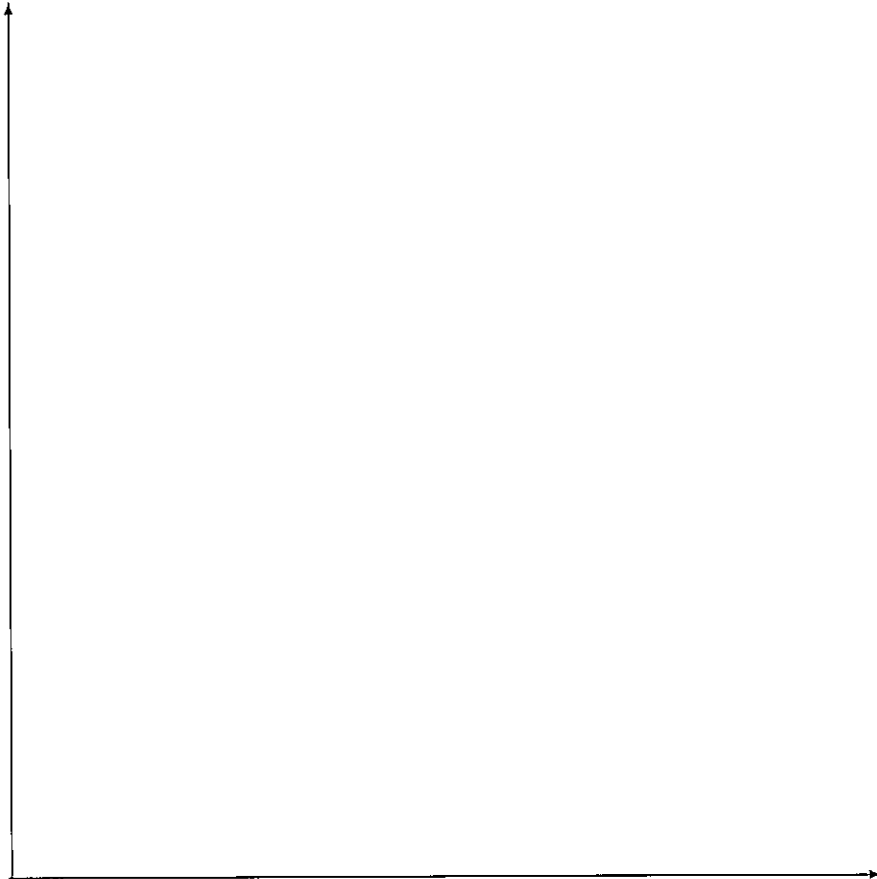
Answer Sheets

(Page 1 of 8)

Examinee's number

Question 1

Question (1)



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Auditory Psychology

Answer Sheets

(Page 2 of 8)

Examinee's number

Question 1 (Continued)

Question (2)

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Auditory Psychology

Examinee's number

Question number:

Do not write your answer on the back side of the sheet. Any answer on the back side will not be scored.

Auditory Psychology

Examinee's number

Question 11 (Continued)

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Examinee's number

Question number:

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(General Entrance Examination) Achievement Test

Auditory Psychology

Answer Sheets

(Page 6 of 8)

Examinee's number

Question III

The term of your choice:

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The term of your choice:

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(General Entrance Examination) Achievement Test

Auditory Psychology

Answer Sheets

(Page 7 of 8)

Examinee's number

Question III (Continued)

The term of your choice:

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(General Entrance Examination) Achievement Test

Auditory Psychology

Answer Sheets

(Page 8 of 8)

Examinee's number

Question III (Continued)

The term of your choice:

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The term of your choice:

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Do not write your answer on the back side of the sheet. Any answer on the back side will not be scored.

Auditory Psychology

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