

THE HEARING AID COUNCIL

EXAMINATION PAPER 1 – APRIL 2005 (1)

SECTION A

Answer **THREE** of the following four questions:

1A1

- (a) Describe the differences between the inner and outer hair cells. Include structure and function in your answer. 14
- (b) How would you expect the loss of each of these two types of cells to affect hearing? 6

1A2

Write short notes on **all of**:

- (a) stapedius fixation 4
- (b) tinnitus 4
- (c) acoustic neuroma 4
- (d) stria vascularis 4
- (e) diplacusis 4

1A3

- (a) Describe in detail how sound is localized. 14
- (b) What might a client with a moderate **bilateral** hearing loss experience if they lost the remaining hearing in **one** ear? 6

1A4

- (a) Describe the function of the healthy middle ear in the transmission of sound to the cochlea. 11
- (b) **List three** pathological conditions of the middle ear that would affect this. 3
- (c) Describe **briefly** how each of these three conditions interferes with this normal transmission. 6

THE HEARING AID COUNCIL

EXAMINATION PAPER 1 – APRIL 2005 (1)

SECTION B

Answer **THREE** of the following four questions:

1B1

- (a) Describe the composition of 2 types of speech lists commonly used for assessing hearing aid benefit with adults. **3**
- (b) How are the tests scored using these materials? **3**
- (c) Describe the relative advantages and disadvantages of each of these 2 lists. **6**
- (d) Describe how a simple speech test might be set up and undertaken to assess hearing aid benefit and mention any particularly important aspects. **8**

1B2

- (a) What are equal loudness contours and how were they derived? **8**
- (b) Comment on the differences between the 40 phons and 100 phons curves. **6**
- (c) In relation to hearing what are the Minimum Audible Pressure (MAP) and Minimum Audible Field (MAF), how do they differ? **6**

1B3

Write short notes on **all of**:

- (a) The octave frequency scale and its relevance to hearing **5**
- (b) How you can determine the approximate distance of a sound source? **5**
- (c) Factors affecting reverberation time **5**
- (d) Upward spread of masking. **5**

1B4

- (a) Explain in full the terms dBSPL; dBHL; and dB(A). Make clear in your answer the difference between the terms and how they are derived. In what circumstances would you encounter each of these terms? **15**
- (b) The performance data of a hearing aid is measured to IEC 118-7 and IEC 118-0 specifications. Discuss how these two methods of measurements differ. **5**

THE HEARING AID COUNCIL

EXAMINATION PAPER 2 – APRIL 2005(1)

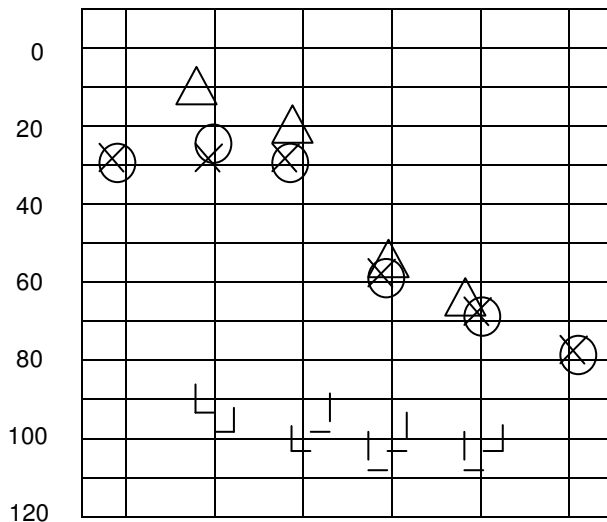
SECTION A

Answer **THREE** of the following four questions:

2A1

Study the audiogram below.

- (a) Based on this audiogram how would you expect the client to describe their hearing difficulties? **3**
- (b) Explain the frequency response you are aiming to achieve through a hearing aid fitting and what you want to avoid. **4**
- (c) In the case of a BTE fitting:
1. Give four reasons why you would choose a binaural fitting **4**
 2. Give four reasons why you would choose to fit monaurally **4**
 3. State what earmould style and material you would select and why **3**
 4. State what tubing you would use and why **2**



2A2

- (a) State three different types of difficult listening conditions for a person with a bilateral, sensorineural hearing loss. Include why they would be difficult for such a person. For each type of difficult listening condition, briefly describe a situation which illustrates the difficulties and explain why this happens **7**
- (b) What technical features exist in currently available hearing aid which are designed to assist in each of the three situations? In addition to these technical features, what other recommendations would you make to minimise the difficulties described in (a). **10**
- (c) How can hearing tactics assist in the three situations? **3**

Continued on next page

2A3

- (a) Draw a labelled diagram of a hearing aid test box as used to measure the performance of an air conduction hearing aid. **8**
- (b) Briefly describe four functions of an aid's performance that can be tested in this way **8**
- (c) List four functions of an aid's performance that cannot be tested in this way **4**

2A4

Many hearing aids have or can be fitted with a telecoil.

- (a) In what listening conditions can a telecoil be beneficial and why? **3**
- (b) What is the difference between a switch marked 'T' and 'MT'? **2**
- (a) How can some programmable systems enable variations in the response of a telecoil and for what reasons would this be an advantage? **4**
- (d) For what type and degree of hearing loss can a telecoil be most helpful? **6**
- (e) What can be the disadvantages of a telecoil? **5**

THE HEARING AID COUNCIL

EXAMINATION PAPER 2 – APRIL 2005(1)

SECTION B

All candidates must answer question 2B1 and TWO out of the other three questions

2B1 [COMPULSORY QUESTION]

A dispenser practises from a hearing aid centre as well as undertaking home visits. In order to ensure compliance with the HAC Code of practice, describe in detail:

- (a) What limitations there are regarding how a dispenser can describe himself and his premises in written promotional material? **8**
- (b) What rules must be observed when making home visits other than through an approach by telephone by the dispenser? **8**
- (c) What items of equipment must be available at each consultation? Does this requirement differ depending on whether the consultation is in a client's home or in the Centre? **4**

2B2

An elderly, active and intelligent client was fitted with a binaural in-the-ear hearing aid system approximately 12 months ago.

A relative of the client contacts you to say that the client stopped using two hearing aids after a few months of the fitting and has only worn one of them irregularly over the last 6 to 8 weeks.

- (a) What are the possible reasons for this client not wearing both hearing aids regularly? **6**
- (b) What would you do with a view to ensuring that the client makes regular use of amplification? **6**
- (c) What can you do as a matter of routine practice to avoid such situations from arising? **8**

2B3

You feel that binaural aiding is appropriate for your client.

- (a) Why might they initially reject the idea of wearing binaural hearing aids? **8**
- (b) How would you seek to change that attitude – and why? **12**

2B4

- (a)** Explain what is meant by the occlusion effect in association with hearing aids. **6**
- (b)** Explain which features of earmould and shell design affect occlusion. **6**
- (c)** What audiometric results would suggest that a patient would be likely to report occlusion? **4**
- (d)** What is meant by the viscosity of an aural impression material and why is it important? **4**

THE HEARING AID COUNCIL

EXAMINATION PAPER 3 – APRIL 2005(1)

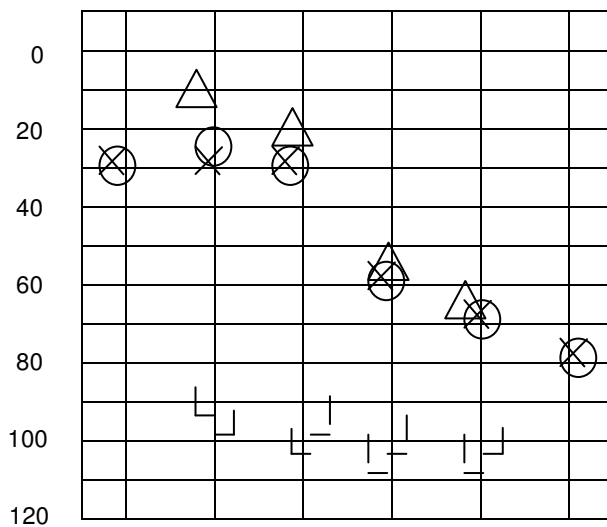
SECTION A

Answer **FOUR** of the following five questions:

3A1

Study the audiogram below.

- (a) Based on this audiogram how would you expect the client to describe their hearing difficulties? **3**
- (c) Explain the frequency response you are aiming to achieve through a hearing aid fitting and what you want to avoid. **4**
- (c) In the case of a BTE fitting:
5. Give four reasons why you would choose a binaural fitting **4**
 6. Give four reasons why you would choose to fit monaurally **4**
 7. State what earmould style and material you would select and why **3**
 8. State what tubing you would use and why **2**



3A2

- (a) State three different types of difficult listening conditions for a person with a bilateral, sensorineural hearing loss. Include why they would be difficult for such a person. For each type of difficult listening condition, briefly describe a situation which illustrates the difficulties and explain why this happens **7**
- (b) What technical features exist in currently available hearing aid which are designed to assist in each of the three situations? In addition to these technical features, what other recommendations would you make to minimise the difficulties described in (a). **10**
- (c) How can hearing tactics assist in the three situations? **3**

3A3

- (a) Draw a labelled diagram of a hearing aid test box as used to measure the performance of an air conduction hearing aid. **8**
- (b) Briefly describe four functions of an aid's performance that can be tested in this way **8**
- (c) List four functions of an aid's performance that cannot be tested in this way **4**

3A4

Many hearing aids have or can be fitted with a telecoil.

- (a) In what listening conditions can a telecoil be beneficial and why? **3**
- (b) What is the difference between a switch marked 'T' and 'MT'? **2**
- (d) How can some programmable systems enable variations in the response of a telecoil and for what reasons would this be an advantage? **4**
- (d) For what type and degree of hearing loss can a telecoil be most helpful? **6**
- (e) What can be the disadvantages of a telecoil? **5**

3A5

- (a) Describe with the use of simple diagrams how a DSP hearing aid functions and how it differs from a digitally programmable analogue hearing aid? **8**
- b) Explain the various compression strategies that can be employed by a dispenser with a DSP hearing system to maximise a users' understanding of speech. **12**

THE HEARING AID COUNCIL

EXAMINATION PAPER 3 – APRIL 2005(1)

SECTION B

Answer **BOTH** questions:

3B1

A dispenser practises from a hearing aid centre as well as undertaking home visits. In order to ensure compliance with the HAC Code of practice, describe in detail:

- (a) What limitations there are regarding how a dispenser can describe himself and his premises in written promotional material? **8**
- (b) What rules must be observed when making home visits other than through an approach by telephone by the dispenser? **8**
- (c) What items of equipment must be available at each consultation? Does this requirement differ depending on whether the consultation is in a client's home or in the Centre? **4**

3B2

- (a) Who legally can be the 'notified supervisor' of a trainee dispenser? **3**
- (b) With reference to seven separate clauses of the Code of Practice describe 7 responsibilities of a 'notified supervisor' in relation to a notified pre-exam trainee **7**
- (c) During the post-examination period what does the HAC Standard of Competence require of a supervisor and a trainee in respect of the logbooks? **8**
- (d) What are the duties of a supervisor of a trainee who is an applicant for registration undergoing an adaptation period? (clause 29) **2**