

S.Y.B.A.S.L.P. (2013 Course) : SUMMER-2018
SUBJECT : TECHNOLOGY & AMPLIFICATION DEVICES FOR PERSONS WITH
HEARING IMPAIRMENT

Day : Friday
Date : 25-05-2018

Time : —
Max. Marks : 10

S-2018-3524

N.B.

- 1) Put a in the appropriate box below the question number once only.
- 2) Use blue ball point pen only.
- 3) Each question carries **ONE** marks.
- 4) Student will not be allotted marks if he/she overwrites strikes or put white ink on the cross once marked.
- 5) MCQ sheet will be taken back after half an hour.

SECTION – A

Q.1 M.C.Q.

- 1) Which of the following is a transducer?
 - a) Microphone
 - b) Resistor
 - c) Capacitor
 - d) Diode
- 2) _____ is the voltage and frequency for household supply in India.
 - a) 150 V, 30 Hz
 - b) 220 V, 50 Hz
 - c) 220 V, 30 Hz
 - d) 150 V, 80 Hz
- 3) In which microphone additional power supply is required?
 - a) Ribbon microphone
 - b) Condenser microphone
 - c) Dynamic microphone
 - d) None of the above
- 4) What is the base of binary number system?
 - a) 10
 - b) 8
 - c) 2
 - d) 16
- 5) In _____ optical recording is used.
 - a) Pen drive
 - b) Compact disc
 - c) Magnetic disc
 - d) Magnetic tape

P.T.O.

- 6) A physical phenomenon which negatively affects the transmission of mid to high frequencies to the side of the far ear _____ effect.
- a) Body baffle
 - b) Precedence
 - c) Transmission
 - d) Head shadow
- 7) The presence of components in an output signal which are multiples of the input signal frequency is _____ distortion.
- a) Intermodulation
 - b) Linear
 - c) Harmonic
 - d) Phase
- 8) A coupler having a _____ cc cavity is used during hearing aid analysis.
- a) 1.2
 - b) 2.0
 - c) 2.2
 - d) 6
- 9) During EAC measurement _____ is measured with the volume control at the full on position.
- a) Frequency range
 - b) Total harmonic distortion
 - c) Reference test gain
 - d) SSPL 90
- 10) _____ of following prescriptive formula is used in pediatric hearing aid fitting
- a) NAL-NLI
 - b) DSL i/o
 - c) FIG -6
 - d) None of the above

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Day : **Friday**
Date : **25/05/2018**

S-2018-3524

Time : **10.00 AM TO 01.00 PM**
Max. Marks : 70

N.B.

- 1) All questions are **COMPULSORY**.
- 2) Answers to both the sections should be written in **SEPARATE** answer book.
- 3) Figures to the right indicate **FULL** marks.
- 4) Draw neat diagrams **WHEREVER** necessary.
- 5) Answers written in the inappropriate answer sheet will not be assessed in any case.

SECTION – B

- Q.2** Attempt any **FIVE** out of **SIX** questions: (5X3=15)
- a) Explain the operation of diode in reverse bias.
 - b) What is the principle of microphone? Explain the operation of any one type of microphone.
 - c) Name different types of signals which can be given as input to digital signal processing system.
 - d) Draw the frequency response of different types of filters.
 - e) Draw and explain the operation of full-wave rectifier.
 - f) What is the need for baffles and boxes in loud speakers?
- Q.3** Attempt any **ONE** of the following: (1X10=10)
- a) Explain the operation of CRO with neat diagram.
 - b) What is the need for digital to analog converter in DSP? Explain the operation of any one type of digital to analog converter.

SECTION – C

- Q.4** Attempt any **FOUR** out of **FIVE** questions: (4X5=20)
- a) Write a note on REIG measurement and its application in hearing aid fitting.
 - b) Delineate the advantages and disadvantages of CIC hearing aids with respect to other types of hearing aids.
 - c) Compare and contrast WDRC with compression limiting.
 - d) Explain the various types of ear mould modifications with respect to different types of audiogram configuration.
 - e) Write a note on frequency transposition.
- Q.5** Attempt any **ONE** of the following: (1X10=10)
- a) Discuss the special consideration in hearing aid fitting of children with hearing impairment.
 - b) Discuss the technological advances in hearing aid such as directional microphone, multichannel technology and noise reduction technology.
- Q.6** Attempt any **ONE** of the following: (1X15=15)
- a) Discuss the various couplers used in EAC measurement of hearing aids and explain the following terms: Full on gain, Total harmonic distortion, OSPL-90.
 - b) Discuss the various prescriptive formulae used for programming of hearing aid in hearing aid fitting procedure.

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