

**ROYAL CIVIL SERVICE COMMISSION  
BHUTAN CIVIL SERVICE EXAMINATION (BCSE) 2019  
EXAMINATION CATEGORY: TECHNICAL**

**PAPER III: SUBJECT SPECIALISATION PAPER FOR AUDIOLOGY AND SPEECH  
LANGUAGE PATHOLOGY**

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<b>Date</b>	: October 13, 2019
<b>Total Marks</b>	: 100
<b>Writing Time</b>	: 150 minutes (2.5 hours)
<b>Reading Time</b>	: 15 minutes (prior to writing time)

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**GENERAL INSTRUCTIONS:**

1. Write your Registration Number clearly and correctly on the Answer Booklet.
2. The first 15 minutes is to check the number of pages of Question Paper, printing errors, clarify doubts and to read the instructions. You are NOT permitted to write during this time.
3. This paper consists of **TWO SECTIONS**, namely SECTION A & SECTION B:
  - **SECTION A** has two parts: Part I - 30 Multiple Choice Questions  
Part II - 4 Short Answer Questions  
  
All questions under SECTION A are COMPULSORY.
  - **SECTION B** consists of two Case Studies. Choose only **ONE** case study and answer the questions of your choice.
4. All answers should be written on the Answer Booklet provided to you. Candidates are not allowed to write anything on the question paper. If required, ask for additional Answer Booklet.
5. All answers should be written with correct numbering of Section, Part and Question Number in the Answer Booklet provided to you. Note that any answer written without indicating the Section, Part and Question Number will NOT be evaluated and no marks will be awarded.
6. Begin each Section and Part in a fresh page of the Answer Booklet.
7. You are not permitted to tear off any sheet(s) of the Answer Booklet as well as the Question Paper.
8. Use of any other paper including paper for rough work is not permitted.
9. **You are required to hand over the Answer Booklet to the Invigilator before leaving the examination hall.**
10. This paper has **11 printed pages**, including this instruction page.

**GOOD LUCK**

SECTION A

PART I: Multiple Choice Questions (30 marks)

Choose the correct answer and write down the letter of your chosen answer in the Answer Booklet against the question number e.g. 31 (d). Each question carries ONE mark. Any double writing, smudgy answers or writing more than one choice shall not be evaluated.

1. Child with difficulty in feeding along with unclear speech is brought to you. Muscular inability to sufficiently close the port between the nasopharynx and oropharynx during speech and swallowing is seen. Mild degree of conductive hearing loss is also seen. Which one will you recommend as assistive device?
  - a) Bone conduction hearing aid
  - b) Palatal lift prosthesis
  - c) Behind the ear hearing aids
  - d) Communication board
  
2. Which of the following describes best for the sound /s/ ?
  - a) affricate consonant
  - b) fricative consonant
  - c) dental plosive
  - d) voiced consonant
  
3. In Brodmann classification, Brocas area is indicated by area number
  - a) 40 and 41
  - b) 43 and 42
  - c) 44 and 45
  - d) 46 and 47
  
4. Format of words and phrases to construct a sentence in speech is known as \_\_\_\_\_ skills.
  - a) semantics
  - b) syntax
  - c) pragmatics
  - d) prelinguistics
  
5. Which cranial nerve is affected by an acoustic neuroma?
  - a) VI
  - b) VII
  - c) VIII
  - d) X
  
6. Sound energy is converted to electrical impulses at \_\_\_\_\_.
  - a) footplate of stapes
  - b) fluid in the cochlea
  - c) tympanic membrane
  - d) auditory cortex

7. Masking in pure tone audiometry test is done to
  - a) avoid cross hearing.
  - b) avoid cross over.
  - c) elicit real hearing threshold.
  - d) avoid background noise.
  
8. In genetic hearing loss audiogram shows bone conduction elevation at
  - a) 1 KHz.
  - b) 2 KHz.
  - c) 3 KHz.
  - d) 4 KHz.
  
9. Melodic intonation therapy (MIT) aims to
  - a) emphasize melodic pattern of speech.
  - b) convert singing into speech.
  - c) speak with tapping feet.
  - d) both (a) and (b)
  
10. Noise induced hearing loss is diagnosed when
  - a) audiogram shows 2 KHz notch.
  - b) audiogram shows 4 KHz notch.
  - c) audiogram shows 6 KHz notch.
  - d) None of the above.
  
11. Type A Tympanogram is always associated with
  - a) ossicles.
  - b) fluid in the cochlea.
  - c) normal tympanic membrane.
  - d) All of the above.
  
12. Primary Auditory cortex is represented by Brodmann classification numbered
  - a) 41, 42 in temporal lobe.
  - b) 22, 21 in occipital lobe.
  - c) 22, 23 in frontal lobe.
  - d) None of the above.
  
13. Basal Part of cochlea is responsible for hearing sounds at
  - a) low frequencies.
  - b) high frequencies.
  - c) mid frequencies.
  - d) None of the above.
  
14. Biological mechanisms of noise induced hearing loss is
  - a) damage of inner hair cells.
  - b) damage of outer hair cells.
  - c) damage of basal part of cochlea.
  - d) damage of apex part of cochlea.

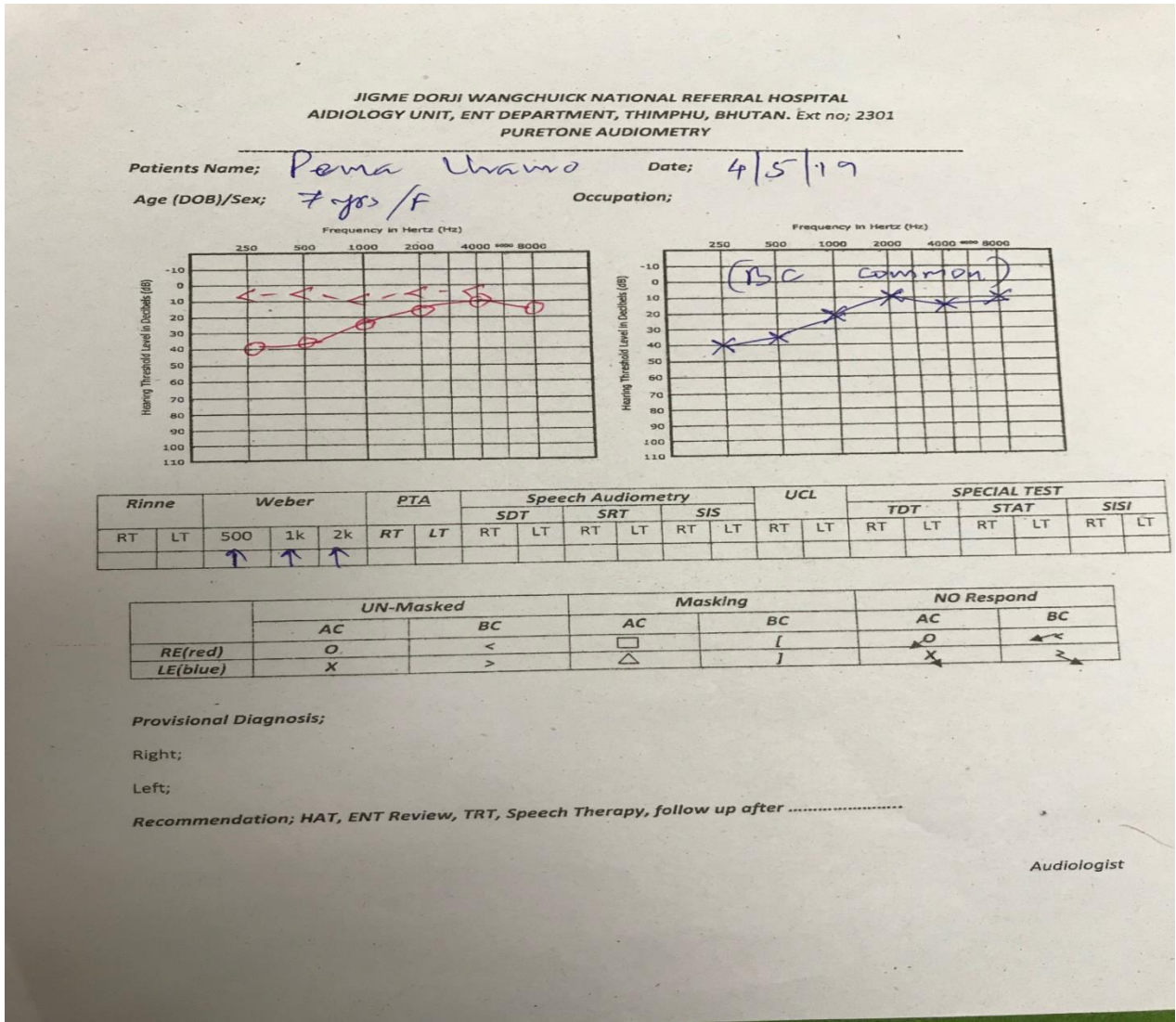
Use the following information to answer **Question 15 and 16**.

A 6 years old male child has been brought directly to you with the complaint of not speaking age adequately. On observation, you noticed few functional words with stereotypic behaviour. Parents notice unusual jargon utterances when child gets excited. You have a tough time building interaction with the child during assessment.

15. What will be your provisional diagnosis?
- Inadequate expressive skills.
  - Delayed speech and language.
  - Delayed speech and language consequent to ASD.
  - Delayed speech and language consequent to (?) ASD.
16. As a speech therapist, what will be your immediate suggestion to the parents?
- Take advice from psychologist.
  - Take advice from paediatrician.
  - Start speech therapy right away.
  - Take advice from occupational therapist.
17. Vocal cord nodule is also known as
- readers nodule.
  - whisperers nodule.
  - singers nodule.
  - cheer leaders nodule.
18. Which of the following scores are most likely to be obtained if word recognition is assessed at 40dBSL?
- 88% at right ear, 90% at left ear
  - 60% at right ear, 80% at left ear
  - 98% at right ear, 50% at left ear
  - 78% at right ear, 70% at left ear

Use the following information to answer Questions 19 – 21.

Pema Lhamo, 7 years old female has been referred for the hearing test. She is brought with the complaint of being inactive in the classroom. She is usually found staying blank in the classroom and her academic performance is found to be average. She had been treated for sinus infection for last 8 months. Copy of her audiogram is shown below:



19. As an Audiologist, what will be your recommendations for this child?
- Individualized family service plan
  - Individualized educational program
  - Refer back to Otorhinolaryngologist
  - Both (b) and (c)

20. What will be provisional diagnosis for this child from this audiogram?
- Bilateral minimal hearing loss.
  - Bilateral minimal to mild conductive hearing loss.
  - Bilateral mild to minimal conductive hearing loss.
  - Bilateral mild mixed hearing loss.
21. If you happen to administer impedance audiometry for Pema lhamo, which of the following results defines her situation?
- Bilateral B tympanogram with no ipsi reflexes.
  - Bilateral A tympanogram with no contra reflexes.
  - Bilateral As tympanogram with no ipsi and contra reflexes.
  - Bilateral B tympanogram with no ipsi and contra reflexes.
22. A child born with bilateral Atresia is brought to the Audiologist consultation at the age of 6 months. Radiological evidence indicates the probable presence of middle ear and cochlea. BC ABR has obtained at near normal levels. Which of the following move will be the best for the child at this time?
- Defer treatment until the child attains 6 years of age so that external and middle ear growth is completed.
  - Suggest surgery at one ear so that normal air conduction in hearing mechanism is established.
  - Recommend an implanted bone anchored hearing aid.
  - Investigate the use of bone conduction hearing aid until the Audiological test results can be confirmed and surgery initiated later when the child is old enough for the surgery.
23. The accuracy of hearing screening test in correctly identifying those individuals who actually have hearing impairment is referred to as \_\_\_\_\_ hearing tests.
- Reliability
  - Validity
  - Sensitivity
  - Specificity
24. Which of the following will you choose for amplification for a person with bilateral moderate conductive hearing loss and chronic drainage from both the ears?
- Body worn hearing aids.
  - Behind the ear with vented earmoulds.
  - Bone conduction hearing aid.
  - None of the above.
25. Phenomenon known as paracusis of willis is
- an ability to hear better in noise.
  - a phenomenon occurring in conductive hearing loss.
  - a low speech recognition threshold in presence of noise.
  - both (a) and (b)

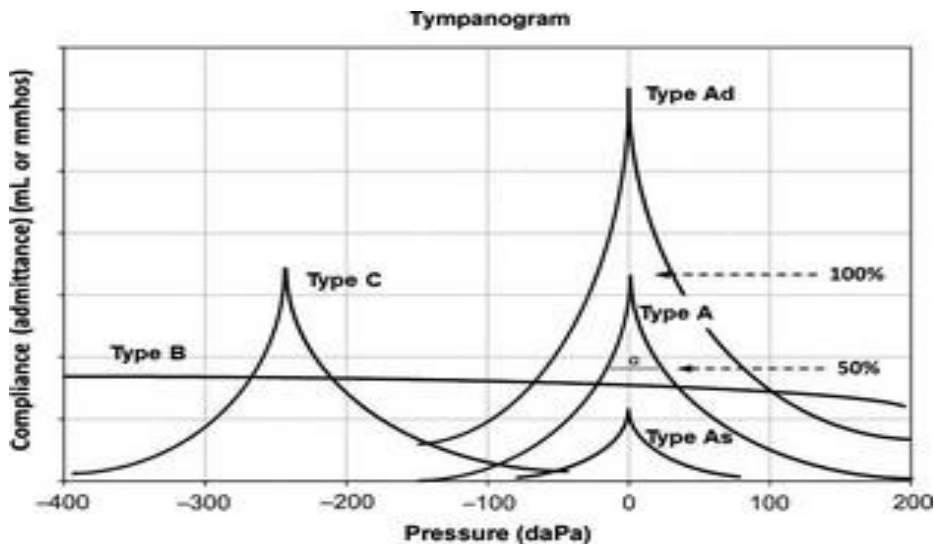
26. The colour of the normal vocal cords is
- pink
  - red
  - pearly white
  - grey
27. The cranial nerve concerned with vocal cord movements is
- V cranial nerve
  - VII cranial nerve
  - VIII cranial nerve
  - X cranial nerve
28. AC masking is needed when
- difference in AC of TE and BC of NTE exceeds more than 40dBHL.
  - difference in AC of TE and AC of NTE exceeds more than 40dBHL.
  - difference in BC of TE and BC of NTE exceeds more than 40dBHL.
  - None of the above.
29. Non organic hearing loss is seen in
- chronic suppurative otitis media.
  - sensorineural hearing loss.
  - malingerer.
  - acute suppurative otitis media.
30. Tinnitus is the perception of noise or ringing in the ears. Following are the common causes of tinnitus EXCEPT
- presbycusis and NIHL
  - hypertension
  - ototoxicity
  - dehydration

**PART II – Short Answer Questions (20 marks)**

**This part has 4 Short Answer Questions. Answer ALL the questions. Each question carries 5 marks.**

- Briefly discuss the different types of hearing loss.
- What is Eustachian tube dysfunction? Mention few causes and symptoms. What test will you administer to confirm it? Briefly describe some management that you can give.
- Discuss consonants with respect to place and manner of articulation with examples wherever necessary.

4. Describe and explain middle ear conditions using the graph below.



**SECTION B: Case Study (50 marks)**

Choose either **CASE I** or **CASE II** from this section. Each case study carries 50 marks. Mark for each sub-question is indicated in the brackets.

**CASE I**

You have been appointed as the Audiologist/Speech language pathologist of JDWNR Hospital and come across the following cases. How will you manage each of them?

1. A 30 year old female singer has developed gradual increase of hoarseness of voice over the years. She has been habitually smoking 7 to 10 cigarettes for the past few years. Though physically fit, she has developed a dry, allergic type of cough since two weeks. Examination reveals tiny nodule growth in the larynx and larynx is found to move normally. She is then referred to you for speech therapy.
  - a) Enumerate the causes of hoarseness of voice with special emphasis to this age group. (3 marks)
  - b) How will you further assess the voice and laryngeal function? (3 marks)
  - c) How will you manage this patient? (4 marks)
  
2. A 41 years old construction worker has come with the complaint of a continuous ringing sound in his ears. He also has difficulty hearing others especially in crowd. On physical examination, he was fit and healthy, and on Otoscopic examination, his ears were normal. On free field testing, he could hear a conversational voice at 2 feet bilaterally. Using a 512 Hz tuning fork, Rinne's test was positive bilaterally and Weber's test centralized.
  - a) Discuss the characteristics of possible hearing loss in this case and its causes? (2 marks)
  - b) What is tinnitus? (2 marks)



- c) What audiological tests would you perform and why? (3 marks)
- d) Give your opinion and management that you will suggest for such cases. (3 marks)
3. A 16 year old girl is referred to you for review of her hearing aid and assessment of her hearing. She was fitted with hearing aid since 4 years. She is now having difficulty hearing in the presence of background noise, and frequently cannot hear the loud conversations. Her school teachers and parents complain that lately her speech articulation has dramatically distorted. On free field testing, she can hear a loud voice from distance of 6 inches. Tuning fork tests are not heard. The pure tone average of the air conduction thresholds on the right ear is 100dB HL, and 105dB HL on the left ear. The bone conduction thresholds in both sides are beyond the limits of the audiometric threshold.
- a) What type of hearing loss does the case describe? Mention types and degree of loss. (2 marks)
- b) If the hearing aids are not found effective, what are the next possible suggestions will you provide? (2 marks)
- c) Discuss some of the possible causes for such condition? (3marks)
- d) Discuss the management for this patient and rehabilitation. (3marks)
4. A 30 month old baby boy has been brought to you by her mother. She says that her child is not responding to her commands and has not developed any verbal mode speech. The baby has no ear infection, no congenital anomalies.
- a) What is delayed here? (1 mark)
- b) Discuss some of the major possible causes of such conditions. (3 marks)
- c) Describe in brief the communication milestones till the age of 4 years. (4 marks)
- d) What will be management approach in this case? (2 marks)
5. 34 year old lady was referred to Audiology Unit from the forensic department to be proceeded as medico legal case. She complains of assault and battery by her husband last night. On Otoscopic examination, external auditory canal and tympanic membrane is found to be physically intact and normal. She was found to respond to conversational speech predominantly when the content pleases her.
- a) What type of hearing loss will you suspect in this case? (1 mark)
- b) Describe audiological test that you will administer with possible result from each test while administering to this case. (6 marks)
- c) Briefly mention few other causes for such hearing loss. (3 marks)

**CASE II**

As a language pathologist/Audiologist, Discuss how will you manage the following challenging situations:

1. A 59 year old laryngectomee has visited the ENT specialist after undergoing total laryngectomy for a stage III carcinoma of the larynx. He has recovered well, but faced with the dilemma of communicating with others.

Describe the mechanism of phonation and voice production by the larynx. What happens after total laryngectomy? Discuss vocal rehabilitation after total laryngectomy and methods of communication in laryngectomised patients. (10 marks)

2. 12 years old student has been brought to you with a complaint of not speaking fluently especially when the teacher demands the answer in Dzongkha (National language). When the child is assessed using his mother tongue language, he was found to have occasional initial word repetitions. On the other hand, when the child was assessed using Dzongkha, few sound fear and fidgeting fingers as secondary behaviours were noticed during speaking.

- a) Describe the name of the condition and few possible causes. (3 marks)
- b) What are the types of speech characteristics that you will possibly see in this case other than repetitions and sound fear? (3 marks)
- c) Note some secondary behaviour that you will expect in such cases. (1 mark)
- d) Mention some of the techniques that you will use in the management? (3 marks)

3. NICU has referred 1 month old baby boy for the hearing assessment to you. The baby has no ear infection, no congenital anomalies.

- a) Why do you think NICU has referred to Audiology unit? Mention some of the high risk registers for the babies. (2 marks)
- b) What is the standard form of assessment approach that you will start with? (1 mark)
- c) If the screening test shows suggestive hearing loss, what are your future confirmatory tests? (1 mark)
- d) Briefly discuss the results of following tests considering that the child has severe to profound SNHL (6 marks).

4. 9 years old male child has been brought to you with the complaint of attentive listening issue. Sometimes caregivers mistake him for hard of hearing. Educational history of child reveals repeating three times in 1<sup>st</sup> standard. However on your careful assessment of the child, you notice that child has mild autistic feature with intellectually challenged.

- a) Mention few examples of learning difficulties that you will find in this child with examples. (3 marks)
- b) Mention some of the characteristic behaviour that you will possibly find in this child in reference to mild Autism. (2 marks)

- c) Briefly mention some of the management that you can plan to address and help overcome with the challenge. (5 marks)
5. A 11 years old female student has been brought to the speech therapy with the complaint by teacher focusing on speech articulation. On examination you find that child has repaired cleft of palate and lips. When you make the child to speak, you find it necessary for repetitions for speech to be intelligible.
- a) What is CLP? Mention few causes of cleft of lip and palate. (2 marks)
- b) How will you further assess the articulation of this child? (2 marks)
- c) What are the possible articulation errors you will find in this case? Give examples of each. (4 marks)
- d) Mention few therapy techniques to help this child. (2 marks)

**TASHI DELEK**